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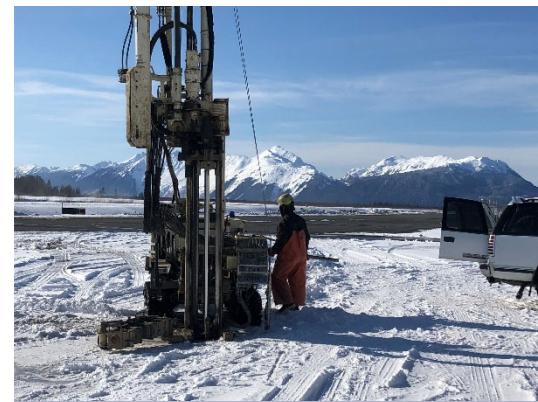
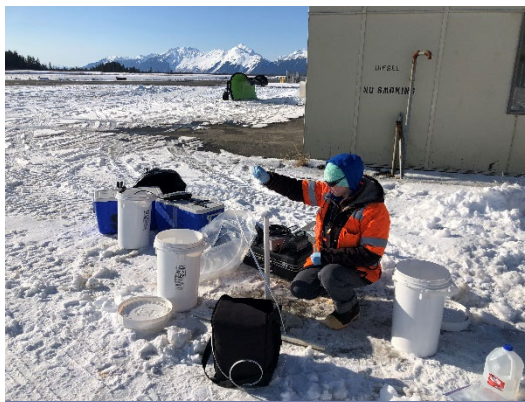


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FINAL

2021 SITE CHARACTERIZATION REPORT  
Cordova Airport Combined  
Maintenance Facility  
CORDOVA, ALASKA



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Submitted To: PDC, Inc. Engineers  
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Subject: FINAL 2021 SITE CHARACTERIZATION REPORT, CORDOVA AIRPORT  
COMBINED MAINTENANCE FACILITY, CORDOVA, ALASKA

Shannon & Wilson prepared this report to document site characterization activities at the Merle K. Smith Airport in Cordova, Alaska for the Alaska Department of Transportation & Public Facilities (DOT&PF) on behalf of PDC Engineers, Inc. Our scope of services was specified in our proposal dated December 16, 2020 and approved by Amendment 4 with PDC Engineers, Inc. dated January 19, 2021 as a subcontract to Professional Services Agreement 025-8-1-022 Amendment Number 7. This report presents the results from the environmental site characterization.

Sincerely,

SHANNON & WILSON, INC.

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## ACRONYMS

AAC	Alaska Administrative Code
ARFF	Aircraft Rescue and Fire Fighting Building
bgs	below ground surface
°C	degrees Celsius
CSM	conceptual site model
CAA	Civil Aeronautics Administration
CDV	Merle K. Smith Airport
DEC	Alaska Department of Conservation
Discovery	Discovery Drilling, Inc.
DOT&PF	Alaska Department of Transportation & Public Facilities
DRO	diesel range organics
EPA	US Environmental Protection Agency
FAA	Federal Aviation Administration
GRO	gasoline range organics
HOT	heating oil tank
LDRC	Laboratory Data Review Checklist
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOQ	limit of quantitation
MB	method blank
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
mV	millivolt
ng/L	nanograms per liter
PAH	polynuclear aromatic hydrocarbons
PDC	PDC Engineers, Inc.
PFAS	per- and polyfluoroalkyl substances
PFHxA	perfluorohexanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PID	photoionization detector
ppm	parts per million
QA	quality assurance
QC	quality control
RL	reporting limit
RRO	residual range organics

ACRONYMS

SGS	SGS North America, Inc.
SREB	Snow Removal Equipment Building
SVOC	semi-volatile organic compounds
TestAmerica	Eurofins TestAmerica Laboratories, Sacramento
VOC	volatile organic compound
Wheaton	Wheaton Water Wells, Inc.
µg/kg	micrograms per kilogram
µS/cm	microSiemens per centimeter



# 1 INTRODUCTION

This report presents the results of the site characterization soil and groundwater sampling at the Merle K. Smith Airport (CDV) in Cordova, Alaska. We understand the Alaska Department of Transportation & Public Facilities (DOT&PF) plans to demolish the existing Aircraft Rescue and Fire Fighting Building (ARFF) at the CDV and build a combined Maintenance Facility to include a Snow Removal Equipment Building (SREB) and new ARFF.

Shannon & Wilson prepared this report in general accordance with Alaska Department of Environmental Conservation's (DEC) March 2017 *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites*, DEC's 2019 *Field Sampling Guidance*, and the March 2021 *Cordova Airport Combined Maintenance Facility Site Characterization FINAL Work Plan*.

## 1.1 Project Purpose and Goals

The project objectives were to characterize contamination from petroleum compounds and per- and polyfluoroalkyl substances (PFAS) within the construction footprint.

The scope for the site characterization included:

- advancing and sampling 17 borings within the demolition and construction footprint and vicinity;
- installing three temporary well points and four groundwater monitoring wells at soil boring locations;
- sampling surface soil and surface water in drainage areas surrounding the SREB footprint;
- characterizing two Class V Industrial Injection Wells in advance of closure with the US Environmental Protection Agency (EPA);
- conducting a limited water supply well search to identify wells that may be affected by migrating contamination; and
- sampling identified water supply wells for PFAS.

## 1.2 Site Description

The CDV is located east of the community of Cordova, Alaska at Mile 13 of the Copper River Highway (60.4933 North, 145.4683 West). Cordova is located at the southeastern end of the Prince William Sound in the Gulf of Alaska near the mouth of the Copper River. The

CDV is located within Section 7 and 18, Township 16 South, Range 1 West, and Section 12, Township 16 South, Range 2 West, Copper River Meridian. Access to the community is only by air and water, as no roads connect Cordova to the Alaska Interior. A map of the general vicinity is presented in Figure 1.

The CDV is located south of the Chugach Mountains on the Copper River Delta area. The delta is a wide, flat plain formed by the progressive accumulation of sediments transported and deposited by numerous glacial rivers from areas inland. The subsurface consists of alluvial, glacial, and marine deposits, with bedrock estimated at 125 feet below ground surface (bgs). Several small streams and ponds are within the CDV property, and groundwater is present between 7 and 10 feet bgs. Regional groundwater surrounding the CDV is expected to flow to the southwest, however, local groundwater may vary seasonally. The site-specific groundwater direction at the ARFF is unknown. A discussion on the CDV aquifers and geotechnical explorations can be found in our *May 2021 Well Evaluation Report, Cordova Airport SREB/ARFF, Cordova, Alaska* and our *May 2021 Geotechnical Data Report, Cordova Airport SREB/ARFF, Cordova, Alaska*, respectively.

### 1.3 Construction Plans

PDC Engineers, Inc. (PDC) will be submitting final design to DOT&PF. The Design Plan includes the following construction activities:

- demolition of the existing ARFF;
- construction of the SREB and water storage building;
- excavations to grade and expand the driveway south of the SREB and create a new driveway north of the SREB; and
- excavation of utility lines to connect the test wells, leach field, and other utilities to the proposed and existing structures.

The proposed demolition areas are shown on Figure 2. The anticipated excavation depth will vary.

## 2 BACKGROUND

The CDV belonged to the Federal Aviation Administration (FAA) and Civil Aeronautics Administration (CAA) until 1966, when property ownership transferred to the State of Alaska. During the 1940's, the property was used as a camp and storage for fuel, aircraft, and ammunition; later additions included control towers, airplane hangars, and multiple underground fuel tanks. Most facilities from the FAA and CAA ownership era have been removed from the site. The DEC Contaminated Sites database lists five FAA locations

within 500 feet of the ARFF related to excavation of multiple gasoline and heating oil tanks in 1994. The sites are listed as “cleanup complete” or “cleanup complete with institutional controls” (DEC File Number 2215.38.001; Hazard IDs 2604, 2079, 2078, 1853, and 2081).

## 2.1 Previous Site Investigations

In July 2020, Shannon and Wilson conducted a hazardous materials assessment in the ARFF and SREB footprint on behalf of our client, PDC. Our scope of work included:

- a hazardous materials assessment for asbestos, lead-based paints, and other potentially hazardous building materials (i.e., fluorescent lighting, mercury-containing thermostats, polychlorinated biphenyls);
- a geotechnical investigation of the subsurface surrounding the ARFF;
- field screening surface and subsurface soil samples using a photoionization detector (PID) and collecting analytical soil samples for PFAS, fuels, volatiles, and mercury; and
- sampling the existing ARFF water supply well for PFAS.

Analytical results from soil sampling showed DEC Cleanup Level exceedances for multiple analytes surrounding the existing ARFF. Fuel-related contaminants were detected in surface soil samples in the vicinity of the out-of-use buried heating oil tank (HOT) on the southeast side of the ARFF; these contaminants were not detected in soil samples collected elsewhere around the ARFF. Perfluorooctanesulfonic acid (PFOS) was reported to be present in all but one of the soil samples collected from the borings and surface. PFOS was reported above Cleanup Level in one surface-soil sample and two soil boring samples (Exhibit 2-3).



**Exhibit 2-1: Advancing a geotechnical soil boring in July 2020. Photo taken facing south.**

### 2.1.1 Geotechnical Investigation

In July 2020, Shannon & Wilson performed an initial geotechnical exploration to assess subsurface conditions and conducted a pump test on the ARFF well. The observations from the pump test suggested new wells were needed to achieve higher flow rates. These results are provided in our May 2021 *Well Evaluation Report, Cordova Airport SREB/ARFF, Cordova, Alaska*. Additional geotechnical work from March 2021 will be discussed in the final geotechnical report.

**Exhibit 2-3: DEC Cleanup Level Exceedance Summary from July 2020 Analytical Results**

Analyte	Cleanup Level	Units	Near underground HOT			West of ARFF
			SB06-1	SB07-1	SURF-2†	SURF-5
			0-2 ft bgs	2.5-3.5 ft bgs	0-0.5 ft bgs	0-0.5 ft bgs
Gasoline Range Organics	260	mg/kg	ND	ND	<b>269 JH*</b>	--
Diesel Range Organics	230	mg/kg	ND	ND	<b>8010 J*</b>	--
1,3,5-Trimethylbenzene	0.66	mg/kg	ND	ND	<b>0.767</b>	--
Naphthalene	0.038	mg/kg	ND	ND	<b>0.232 J*</b>	--
PFOS	3	µg/kg	<b>13</b>	<b>3.6</b>	--	<b>10 J*</b>

NOTES: DEC Soil-Cleanup Levels are from 18 AAC 75.341 Tables B1. Method Two- Soil Cleanup Levels (Over 40 Inch Zone) and Table B2. Method Two - Over 40 Inch Zone - Migration to Groundwater. DEC Cleanup Level exceedances are highlighted in red and bolded.

-- Analysis not requested.

† Field duplicate sample collected; highest concentration from the pair is reported.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

JH\* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc.

ND Analyte not detected; listed as less than the reporting limit unless otherwise flagged due to quality-control failures.

bgs = below ground surface; mg/kg = milligrams per kilogram; HOT = heating oil tank; PFOS = perfluorooctanesulfonic acid; SB = soil boring sample; SURF = surface soil sample; µg/kg = microgram per kilogram

### 3 FIELD ACTIVITIES

This section describes the site characterization field work at the CDV from March 10 to March 15, 2021. Our field sampling forms, including groundwater and soil sampling logs and daily field activity reports, are presented in Appendix A. Field activities were conducted in accordance with the Work Plan. Sampling locations are presented in Figure 2 and a summary of analytical results for the soil samples, injection well samples, and historic soil samples are presented in Figures 3, 4, and 5, respectively.

#### 3.1 Soil Characterization

We subcontracted Discovery Drilling, Inc. (Discovery) to advance 17 soil borings around the ARFF within the construction footprint. Discovery used a Geoprobe Model 7822 equipped with Direct Push DT45 sampling



**Exhibit 3-1: Field staff conduct headspace field screening of soil using a PID.**

system. Shannon & Wilson field staff Dana Fjare and Rachel Willis field-screened for petroleum compounds from soil above the water table using a PID. We collected two analytical samples from each boring, from the ground surface or highest PID reading, and directly above the water table.

We collected 34 samples and four field duplicates using clean, stainless-steel spoons according to the Work Plan. Samples were submitted for the following methods and analyses: gasoline range organics (GRO) with Method AK101, diesel range organics (DRO) with Method AK102, residual range organics (RRO) with Method AK103, volatile organic compounds (VOCs) with EPA Method 8260D, and PFAS with Method 537.1 Modified. Ten percent of samples were also submitted for polynuclear aromatic hydrocarbons (PAH) analysis with EPA Method 8270D-SIM.

Sample locations are presented in Figure 2 and field screening results are presented in Appendix A. Detailed boring logs are presented in Appendix B. Our sample handling procedures are described in Appendix D.

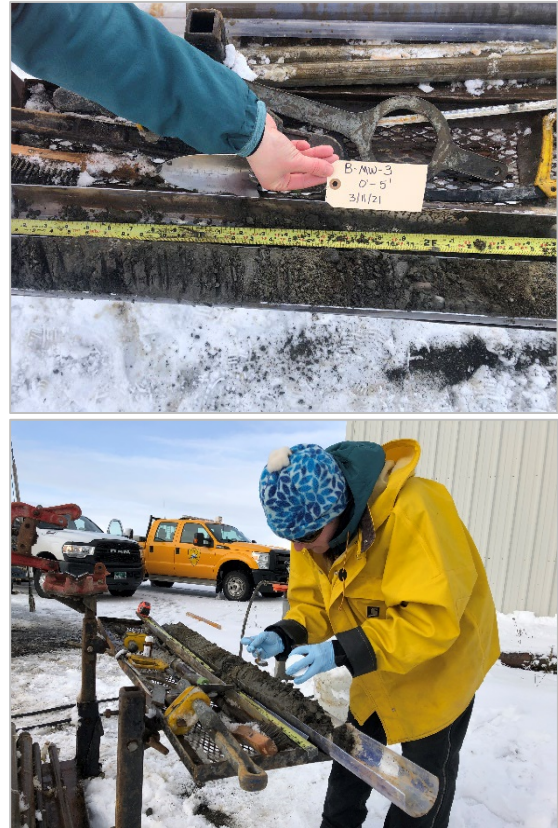
## 3.2 Groundwater Characterization

Groundwater characterization activities included installation and sampling of groundwater monitoring wells, temporary well points, and water supply wells. Three of the borings were completed as temporary well points and four were completed as groundwater monitoring wells. Two water supply test wells were also installed by Wheaton Water Wells, Inc. (Wheaton).

### 3.2.1 Monitoring Well Installation and Development

Discovery installed monitoring wells at four locations:

- northeast of ARFF near utility line excavation (MW-1);
- west of ARFF garage (MW-2);



**Exhibit 3-2: Soil boring B-MW-3 from 0 to 5 feet bgs (top). Collecting a soil sample from B-MW-3 (bottom).**

- east of ARFF and SREB (MW-3); and
- northwest of ARFF near generator building (MW-4).

Wells were installed with 2-inch PVC to approximately 15 feet below ground surface (bgs), screened from 5 feet to 10 feet bgs. Groundwater at the time of drilling was observed from 6.6 feet to 8.6 feet bgs. Well construction details can be found in the field forms in Appendix A and boring logs in Appendix B.

We developed the monitoring wells 24 hours after installation to allow the annular seal to form.

Development was conducted using a Waterra inertial pump equipped with a foot valve. We manually surged the well screen using stiff tubing and surge block prior to purging the well. Development proceeded until there was a significant improvement in the clarity of the water. We contained the development water in 55-gallon drums and stored the drums on-site. Wells were sampled using a stainless-steel submersible pump with disposable tubing as described in Section 3.2.3.



**Exhibit 3-3: Well development at MW-3 using a Waterra inertial pump.**



**Exhibit 3-4: Field staff fill drums with purge water from MW-4. Photo taken facing north (left). Monitoring water quality parameters using a YSI while purging TWP-6 (right).**

### 3.2.2 Temporary Well Point Installation

Discovery installed three temporary well points within the construction footprint at the following locations:

- east of the ARFF and buried HOT (TWP-5);

- southeast of the ARFF within the proposed apron (TWP-6); and
- northeast of the ARFF within proposed paved areas (TWP-7).

Temporary well points were installed with 1-inch PVC to approximately 15 feet bgs, screened from 10 feet to 15 feet bgs. After discussion with DEC, we sampled the wells immediately after installation. Wells were sampled using a peristaltic pump as described in Section 3.2.3.

### 3.2.3 Groundwater Sampling

Field staff purged monitoring wells and temporary well point until water parameters stabilized, or three well volumes had been purged, using a submersible pump or peristaltic pump. Field staff measured temperature in degrees Celsius (°C), conductivity in microSiemens per centimeter ( $\mu\text{S}/\text{cm}$ ), dissolved oxygen in milligrams per liter (mg/L), and redox potential in millivolts (mV) every three minutes using a YSI multi-parameter sonde until parameters met stability criteria described in the Work Plan.

We collected seven water samples and two field duplicates for analysis of GRO, DRO, RRO, VOCs, and PFAS from each monitoring well and temporary well. We collected an additional sample for PAH at TWP-5 and TWP-6. Sample handling procedures are described in Appendix D.

### 3.2.4 Test Well Sampling

Between March 1 and 4, 2021, Wheaton installed two water supply test wells to support the design of the proposed fire suppression system. Well 1R is located 10 feet southwest of the ARFF garage and approximately 60 feet deep, and Well 2 is located 20 feet east of the SREB and approximately 82 feet deep (Figure 2). Wheaton installed the well screens between March 25 and 31, 2021 and developed the well.

Development and pump tests generated approximately 12,000 gallons of water from each well. Following development and pump tests, Shannon & Wilson collected a sample from each well plus one field duplicate for analysis of PFAS and selected organic and inorganic analytes and water quality parameters using a submersible pump.



**Exhibit 3-5: Wheaton Water Wells installs Test Well 2. Photo taken facing west.**

On behalf of DOT&PF we secured a temporary water use authorization (#A2021-20) for the pump test at the Cordova SREB. During development of the test well, we discovered a sheen running off the soil cuttings. The sheen was not observed in the purge water but appeared to be associated with the soil.

Per the permit stipulation #13, "...If additional contamination is encountered while exercising this authorization, the authorization holder must notify ADEC and DNR..." and stipulation #19, "If any well owner notes interference during any pumping...work is to immediately cease and DNR-Water contacted..." we contacted DNR and ADEC and reported the sheen.

Our field staff containerized the potentially contaminated soil into supersacks for future disposal. We collected a sample for laboratory analysis (DRO, RRO, GRO, PAHs, and VOCs). Results of the supersack sampling are summarized in Table 5.

### 3.3 Well Search and Sampling



**Exhibit 3-6: Monitoring water quality parameters using a YSI while purging the ARFF existing water supply well.**

We contacted the DOT&PF Airport Leasing Office to receive a list of occupants within Well Search Area 1 as defined in the Work Plan. We were able to contact 15 of 20 occupants via phone within Well Search Area 1. Water supply wells inventory logs are provided in Appendix A and locations are shown in Figure 6.

We collected a drinking water sample from the Alaska Airlines drinking water well and resampled the ARFF water supply well. We purged the well from the kitchen sink in the ARFF and break room sink in the Alaska Airlines building and recorded pH, temperature, and conductivity according to stabilization criteria described in the Work Plan. Once parameters were stable, field staff collected a water sample and one field duplicate from a spigot plumbed prior to the water filtration system in each building.

### 3.4 Injection Well Characterization

The CR-ARFF-1 and CR-ARFF-2 injection well floor drains were constructed with a removable drain cover and 2-inch diameter pipe spanning the depth of the concrete floor, from surface to four inches bgs. Below the concrete was a void approximately 1 to 2-feet in diameter and 6 feet bgs. We assume the void is a concrete pipe 24-inches in diameter, as described in the 1974 plan detail provided in the Injection Well Closure Work Plan. Sand





**Exhibit 3-7: Discovery Drilling stages drill rig in ARFF garage prior to advancing boring B-IW-19 through CR-ARFF-1.**

and native gravel fill was present below the void. Detailed descriptions of the floor drain can be found in the field notes in Appendix A, and our boring logs are presented in Appendix B, Figures B-18 and B-19.

Field staff noted a strong smell of ammonia in the ARFF garage and conducted ammonia air screening using a PID. The PID recorded 32 parts per million (ppm) of vapors inside the shop with doors closed and vehicles in the shop. Once vehicles were removed and the garage door was opened, the PID recorded 0 ppm. Per Shannon & Wilson's Site-Specific Health and Safety Plan, the garage door was open during drilling activities.

Discovery advanced one boring in each floor drain from 6 feet to 8.5 feet bgs. Shannon & Wilson field screened the borings for petroleum compounds; results ranged from 0 ppm to concentrations exceeding the detector's limit (greater than 15,000 ppm). We collected two analytical samples and one field duplicate from each boring for analysis of GRO, DRO, RRO, VOCs, semi-volatile organic compounds (SVOCs), PAH for 10% of samples, selected metals, and PFAS. Exhibit 3.9 describes sample location, depths and summary of analyses.



**Exhibit 3-8: Inside the ARFF garage facing east. Floor drain CR-ARFF-2 is highlighted with a yellow arrow (right). Close up of CR-ARFF-2 (left).**

Due to the field observations, and after consultation with the project team, we also requested analysis of ethylene glycol and ammonia for all primary field samples collected from the CR-ARFF-1 and CR-ARFF-2 borings.

**Exhibit 3-9: Injection well sample descriptions, depths, and analyses**

Location	Sample Depth (bgs)	Sample Description	PID (ppm)	Sample Name	Analyses
CR-ARFF-1	B-IW-19 6.0 - 7.5 ft	endpoint sample; base of IW discharge	23.7	SBIW19-1	GRO, DRO, RRO, VOCs, SVOC, RCRA metals, PFAS, ethylene glycol, and ammonia
	B-IW-19 7.5 - 8.5 ft	groundwater interface	0.0	SBIW19-2	GRO, DRO, RRO, VOCs, SVOC, RCRA metals, PFAS, ethylene glycol, and ammonia
CR-ARFF-2	B-IW-20 6.0 - 7.5 ft	endpoint sample; base of IW discharge	> 15,000	SBIW20-1 (primary)	GRO, DRO, RRO, VOCs, SVOC, PAH, RCRA metals, PFAS, ethylene glycol, and ammonia
				SBIW20-101 (field duplicate)	GRO, DRO, RRO, VOCs, SVOC, RCRA metals, PFAS
	B-IW-20 7.5 - 8.7 ft	groundwater interface	> 15,000	SBIW20-2	GRO, DRO, RRO, VOCs, SVOC, PAH, RCRA metals, PFAS, ethylene glycol, and ammonia

NOTES: RCRA metals include arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver

bgs = below ground surface; DRO = diesel range organics; ft = feet, GRO = gasoline range organics; PFAS = per- and polyfluoroalkyl substances; ppm = parts per million; RCRA = Resource Conservation and Recovery Act; RRO = residual range organics

### 3.5 Investigation-Derived Waste

Monitoring well development water, purge water, and decontamination rinse water were collected in 55-gallon drums and 6.5-gallon buckets and stored on site pending analytical results. Soil cuttings from each boring were also collected in individual bags and stored in a 55-gallon drum on site pending analytical results. Drums, buckets, and Super Sacks have unique ID and are labeled with the contents. We will coordinate with DOT&PF to dispose of waste according to federal, state, and local regulations. A summary of waste generated is presented below in Exhibit 3-10.

Tubing, nitrile gloves and other inert investigation-derived waste were disposed of in a dumpster at the Cordova DOT&PF Maintenance Station.

**Exhibit 3-10: Summary of IDW**

Description	Sample Location	Container	Container ID
Purge and Development Water	MW-1	1 x 55-gal drum 1 x 6.5-gal bucket	Drum #4 Bucket #5
	MW-2	1 x 55-gal drum 2 x 6.5-gal bucket	Drum #2 Bucket #4 & #6
	MW-3	1 x 55-gal drum 1 x 6.5-gal bucket	Drum #3 Bucket #7
	MW-4	1 x 55-gal drum	Drum #5
	TWP-5	1 x 6.5-gal bucket	Bucket #2
	TWP-6	1 x 6.5-gal bucket	Bucket #1
	TWP-7	1 x 6.5-gal bucket	Bucket #3
Soil Cuttings	B-9 through B-18, B-IW-19 (CR-ARFF-1) and B-IW-20 (CR-ARFF-2)	1 x 55-gal drum each boring in individual bags	Drum #1
	Well 1R and Well 2	2 x 1.5 cubic yard Super Sack	Super Sack #1 & #2
Decontamination Water	all soil and water sample locations	1 x 6.5-gal bucket	Bucket #8

NOTES: Buckets, drums, and Super Sacks are RCRA-approved containers for the storage and transport of hazardous waste.

### 3.6 Deviations from the Work Plan

In general, Shannon & Wilson conducted these services in accordance with the approved Work Plan. The following are deviations from our work plan:

- The Work Plan did not indicate how long the temporary well points would set prior to development and sampling. We received approval from DEC via email on March 12, 2021 to develop and sample the temporary well points without waiting 24-hours since temporary well points were not installed with an annular seal.
- The Work Plan described collecting up to two surface water samples from drainage ditches and ponds within 50 feet of the future SREB. Field staff did not encounter standing water and omitted these samples.

These modifications do not impact the overall data quality or project objectives.

## 4 ANALYTICAL RESULTS

We compared soil analytical results to DEC's Soil Cleanup Levels from 18 Alaska Administrative Code (AAC) 75.341 *Table B1. Method Two- Soil Cleanup Levels (Migration to Groundwater)* and *Table B2. Method Two- Over 40 Inch Zone- Migration to Groundwater.*

Groundwater analytical results for GRO, DRO, RRO, VOCs, and PAHs were compared to 18 AAC 75 Table C. Groundwater Cleanup Levels.

The current DEC action level for drinking water is the EPA Lifetime Health Advisory Level of 70 ng/L for the sum of PFOS and perfluorooctanoic acid (PFOA). This action level was published in an April 2019 update to DEC's Technical Memorandum: *Action Levels for PFAS in Water and Guidance on Sampling Groundwater and Drinking Water*.

Drinking water samples collected from the two test wells are compared to the Maximum Contaminant Levels in EPA's *March 2018 Edition of the Drinking Water Standards and Health Advisories Tables*.

The analytical results are summarized in Tables 1 through 6. The laboratory reports and DEC Laboratory Data Review Checklists for each work order are also included in Appendix C. Analytical sample Quality Assurance (QA) and Quality Control (QC) are summarized in Appendix C. Figure 2 shows the various sample locations, and Figures 3 through 5 display summarized analytical results.

#### 4.1 Analytical Results of Water Supply Wells

PFOS was detected at concentrations below the EPA Lifetime Health Advisory Level of 70 nanograms per liter (ng/L) only in the primary and field duplicate samples collected from the ARFF (2.3 ng/L and 2.1 ng/L, respectively). PFAS analytes were not detected in the water-supply well samples collected from the Alaska Airlines terminal and two test wells. Table 1 presents analytical results from drinking water samples collected from our limited well search and ARFF test wells.

#### 4.2 Soil Analytical Results

PFOS was detected at concentrations exceeding the DEC Cleanup Level of 3.0 micrograms per kilogram (ug/kg) in samples *SB10-1*, *SB15-1*, *SB15-2*, *SB16-1*, *SB17-1*, *SB17-2*, *SBTWP5-1*, *SBTWP5-2*, field duplicate sample *SBTWP5-102*, *SBTWP6-1*, field duplicate *SBTWP6-101*, and *SBTWP6-2*.

Vinyl chloride was detected at concentrations exceeding the DEC Cleanup Level of 0.0008 milligrams per kilogram (mg/kg) in sample *SBMW1-1*. Exhibit 4-1 summarizes sample exceedances and depth bgs.

Table 2 provides a summary of detected analytical results. The corresponding laboratory reports are presented in Appendix C.

**Exhibit 4-1: 2021 Soil Exceedances**

Boring	Sample Name	Sample Depth bgs	PFOS ug/kg	Vinyl chloride mg/kg
B-10	SB10-1	0.0-1.5 ft	<b>4.3</b>	ND
B-15	SB15-1	0.0-1.5 ft	<b>24</b>	ND
	SB15-2	6.5-8.5 ft	<b>150 J*</b>	ND
B-16	SB16-1	0.0-2.0 ft	<b>3.1</b>	ND
B-17	SB17-1	0.0-2.0 ft	<b>4.4</b>	ND
	SB17-2	6.6-8.3 ft	<b>8.7</b>	ND
B-TWP-5	SBTWP5-1	0.0-2.0 ft	<b>15</b>	ND
	SBTWP5-2	6.2-8.4 ft	<b>17 J*</b>	ND
	SBTWP5-102	6.2-8.4 ft	<b>51</b>	ND
B-TWP-6	SBTWP6-1	0.0-1.5ft	<b>7.8</b>	ND
	SBTWP6-101	0.0-2.0 ft	<b>8.9</b>	ND
	SBTWP6-2	7.0-8.3 ft	<b>9.7</b>	ND
B-MW-1	SBMW1-1	0.0-1.5 ft	0.32 J	<b>0.00291</b>
<b>DEC Cleanup Level</b>			<b>3</b>	<b>0.0008</b>

NOTES: DEC Soil-Cleanup Levels are from 18 AAC 75.341 Tables B1. Method Two- Soil Cleanup Levels (Over 40 Inch Zone) and Table B2. Method Two - Over 40 Inch Zone - Migration to Groundwater. DEC Cleanup Level exceedances are bolded.

J Estimated concentration, detected less than the limit of quantitation (LOQ). Flag applied by the laboratory.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

ND Analyte not detected; listed as less than the reporting limit unless otherwise flagged due to quality-control failures.

bgs = below ground surface; mg/kg = milligrams per kilogram; µg/kg = microgram per kilogram

#### 4.2.1 Test Well Soil Cuttings

Fuel-related contaminants in test well soil cuttings from the supersack sampling were not present above DEC Cleanup Levels in the sample and field duplicate. Table 5 provides a summary of detected analytical results. The corresponding laboratory report is presented in Appendix C.

### 4.3 Groundwater Analytical Results

PFOS was detected above the EPA Lifetime Health Advisory Level of 70 ng/L in sample TWP-5 and field duplicate TWP-105 at 82 and 90 ng/L, respectively. The sum of PFOS and PFOA for sample TWP-5 and field duplicate TWP-105 is 83.3 ng/L and 91.1 ng/L, respectively. Neither PFAS nor PFOA were detected above the DEC Cleanup Levels of 400 ng/L for each compound in groundwater samples.

## 4.4 Injection Well Analytical Results

We observed the following exceedances above DEC Soil Cleanup Levels:

- PFOS and arsenic in all injection well soil samples where the concentration ranged from 120 µg/kg to 11,000 J µg/kg and 2.34 mg/kg to 4.59 mg/kg, respectively;
- PFOA and DRO in samples *SBIW19-1*, *SBIW20-1*, and field duplicate *SBIW20-101*. PFOA concentrations ranged from 4.3 J µg/kg to 1,500 J µg/kg, and DRO concentrations ranged from 1,030 mg/kg to 5,540 J mg/kg;
- RRO in samples *SBIW20-1* and its field duplicate *SBIW20-101* at concentrations of 20,600 J mg/kg and 11,100 J mg/kg, respectively; and
- naphthalene in sample *SBIW19-1* at a concentration of 0.0887 J.

Injection well results are summarized in Table 4 and shown in Figure 4. The corresponding laboratory report is presented in in Appendix C.

## 4.5 Test Well Analytical Results

No analytes were detected above the associated EPA Maximum Contaminant Level in groundwater samples collected from the Test Wells. Table 6 presents a summary of analytical results. The corresponding laboratory report is presented in in Appendix C.

# 5 UPDATED CSM

A conceptual site model (CSM) describes potential pathways between a contaminant source and possible receptors (i.e., people, animals, and plants) and is used to determine who may be at risk of exposure to those contaminants. Our DEC Human Health CSM Graphic Form and Human Health CSM Scoping Form were updated based on analytical results and site conditions in 2020 and 2021. These forms are included in Appendix E.

## 5.1 Description of Potential Receptors

Shannon & Wilson considers commercial/industrial workers, site visitors, or trespassers, and construction workers to be current or future potential receptors for one or more exposure pathways. We do not consider recreational users, farmers, subsistence harvesters, or subsistence consumers to be potential receptors.

## 5.2 Potential Exposure Pathways

Potential exposure pathways include incidental ingestion of soil or groundwater, dermal exposure to soil or groundwater, and inhalation of indoor and outdoor air and fugitive dust.

### 5.2.1 Direct Contact with Soil and Groundwater

Industrial workers, construction workers, or site visitors may come in direct contact with contaminated surface and subsurface soil or exposed to shallow contaminated groundwater during excavation and construction projects. Groundwater is from 7.5 feet to 8.5 feet bgs surrounding the ARFF building.

### 5.2.2 Indoor and Outdoor Air

Receptors including industrial workers, construction workers, or site visitors could be exposed to volatile contaminants in indoor and outdoor air. Volatile contaminants are present on the surface soil and below the ARFF garage.

### 5.2.3 Fugitive Dust

Receptors may come into contact with fugitive dust during construction activities since soils within the Copper River Delta may contain high amounts of silt. DOT&PF personnel, tenants, and contractors could inhale wind-blown dust during outdoor construction activities and be exposed to volatile contaminants in fugitive dust.

### 5.2.4 Ingestion and Absorption of Groundwater

Exposure of residents and commercial or industrial workers to PFAS-impacted groundwater through ingestion or dermal absorption is considered insignificant, since PFAS was not detected in drinking water wells. Water supply wells may be used for eating and drinking by commercial residents, but water is reported to have poor taste and not used for drinking.

### 5.2.5 Other Media

Ingestion or dermal absorption of surface water, direct contact with sediment, and inhalation of indoor air are not considered complete exposure pathways because the contaminants of concern were not detected above DEC Cleanup Levels in surface water or sediment. Ingestion of wild harvested foods is not considered a complete exposure pathway because the public is not permitted to access the ARFF and airport vicinity.

## 6 DISCUSSION

This site characterization identified soil and groundwater contamination within the construction footprint of the future SREB. We identified PFAS and fuel-related

contamination above DEC Cleanup Levels in the soil and PFOS above the EPA Lifetime Health Advisory Level at one temporary well point.

## 6.1 Soil

Figure 5 depicts a summary of analytical results from the 2020 investigation and 2021 site characterization activities. PFAS soil contamination was found at multiple locations and depths south to southeast of the ARFF garage, at one location north of the ARFF, and in the floor drain injection wells, further discussed in Section 6.3. We suspect the main source of releases are from historic surface releases of aqueous film forming foam.

In soil samples collected around the ARFF, we found the highest concentration of PFOS at the soil-groundwater interface of boring B-15, at a concentration of 150  $\mu\text{g}/\text{kg}$ . Boring B-15 is located approximately 15 feet south of the ARFF garage in gravel fill atop native sandy silt with gravel.

PFOS concentrations in the soil may increase with depth. PFOS was detected at concentrations exceeding DEC Cleanup Levels in the surface at four locations and both the surface and subsurface soil at four soil boring locations. Where PFOS was detected at the surface and subsurface, the PFOS concentration was higher at the groundwater interface than the surface soil. We suspect this may be due to contaminants concentrating in the soil water interface or migrating from an upgradient source.

We identified petroleum-related contamination in the surface soil at selected areas within the construction footprint. GRO, DRO, 1,3,5-trimethylbenzene, and naphthalene exceeded DEC Cleanup Levels from samples collected from the surface soil sample *SURF-2* and field duplicate *SURF-21* in July 2020 on the southeast side of the ARFF. We suspect this contamination is limited to a small area of visible fuel staining on the ground surface and does not appear to be migrating to the groundwater. Analytical samples collected near samples *SURF-2* and *SURF-21* exceedance in 2020 and 2021 did not have exceedances for GRO, DRO, or 1,3,5-trimethylbenzene.

Vinyl chloride was detected at concentrations exceeding DEC Cleanup Levels in the surface soil northeast of the ARFF in B-MW-1. We did not find fuel-related contaminants in the soil groundwater above DEC Cleanup Levels. Vinyl chloride was not detected in the surface of boring B-9, located 20 feet northwest of B-MW-1.



## 6.2 Groundwater

PFOS was detected in the existing ARFF water supply well but at concentrations below the EPA Lifetime Health Advisory Level for drinking water. No PFAS compounds were detected in the two newly installed ARFF test wells or the Alaska Airlines well.

PFOS and PFOA were detected at concentrations exceeding the EPA Lifetime Health Advisory Level but below the associated DEC groundwater Cleanup Levels in groundwater samples collected from a temporary well point located southeast of the ARFF. We suspect that PFAS contamination in the groundwater is confined to the upper aquifer where groundwater and subsurface soil come in contact.

It is unknown how far south the groundwater plume extends. We were unable to calculate groundwater gradient during site characterization activities, however we assume the groundwater flow is to the south or southeast based on regional geology.

## 6.3 Injection Wells

We observed PFAS- and fuel-related contamination in the two ARFF garage injection wells. DRO, RRO, naphthalene, arsenic, PFOS and PFOA were detected exceeding DEC Cleanup Levels in one or more sample collected from the injection wells. Ethylene glycol was not present in the soil in the discharge zone of the injection wells. The horizontal and vertical extent of injection-well-related contamination is not known.

Ammonia and glycol are associated with urea, a deicing chemical used at the airport. According to the CDV Stormwater Pollution Prevention Plan (SWPPP), due to high average snowfall and relatively moderate coastal climate, urea is the primary deicing compound (average annual usage of 60-70 tons/year). Small amounts of alternative deicers (E36) are used (average of 5,000 gallons/year) when conditions are suitable. According to the Multi-sector General Permit requirements (Section 11.S.8), there shall be no discharge of airfield pavement deicers containing urea, unless there is monitoring. To our knowledge, there is no effluent monitoring at the facility.

Ammonia does not have an associated DEC Cleanup Level; however, ammonia was detected in soil samples collected from the injection well borings with a maximum reported concentration of 1,340 mg/kg. The Agency for Toxic Substances and Disease Registry reports background concentrations of ammonia in soil ranging from 1 to 5 parts per million, equivalent to mg/kg.

We observed arsenic in soil above DEC Cleanup Levels. Arsenic is a naturally occurring metal found in soil and metal throughout Alaska, including the Cordova area. An

investigation conducted by the United States Geological Survey (1988) examined arsenic concentrations in soil samples collected in 48 locations throughout Alaska. Results of this study indicate a geometric mean concentration of arsenic of 6.7 mg/kg.

Arsenic concentrations observed below the building ranged from 2.34 mg/kg to 4.59 mg/kg. Based on this information and results of the 1988 USGS study, we believe that the arsenic concentrations measured in these soil samples are consistent with naturally occurring background levels.

## 7 RECOMMENDATIONS

Based on the results of Shannon & Wilson's limited site characterization effort, we recommend the following:

### 7.1 Design and Construction Recommendations

- Prepare a contaminated soil management plan for planned construction work.
- Excavate surface soil with PFOS and vinyl chloride concentrations exceeding DEC Cleanup Levels.
- Decommission two Class V Industrial Injection Wells in the ARFF.
- Submit a brief report with an IW closure request to the EPA. We understand the EPA will not close the IWs until they are capped or removed.
- Coordinate with DEC to dispose of IDW as described in Section 7.1.

### 7.2 Site Characterization Recommendations

- Install additional monitoring wells or temporary well points to characterize the extent of the PFAS-impacted groundwater south of the building.
- Survey the monitoring wells to calculate groundwater gradient.
- Collect additional groundwater monitoring samples from the newly installed wells.

### 7.3 IDW Recommendations

This site characterization event generated the following IDW:

- five 55-gallon drums and seven 6.5-gallon buckets of monitoring well purge and development water,
- one 6.5-gallon bucket of decontamination water,
- one 55-gallon drum of soil clippings, and

- two 1.5-cubic yard Super Sacks.

We recommend the following IDW **can be reused during construction activities or disposed on site**:

- Purge and development water from all monitoring wells and temporary well points except water from TWP-5, including Buckets #1, Buckets #3 through #7, and Drums #2 through #5;
- Decontamination water (Bucket #8); and
- Soil cuttings from B-9, B-11, B-12, B-13, B-14, B-18, B-MW-2, B-MW-3, B-MW-4, B-TWP-7, and test wells, including selected contents of Drum #1, Super Sack #1, and Super Sack #2.

We recommend the following IDW be **disposed of at a DEC and EPA-approved waste facility** according to federal, state, and location regulations:

- Soil cuttings from B-10, B-15, B-16, B-17, B-MW-1, B-TWP-5, B-TWP-6, and B-IW-19 and B-IW-20 (selected contents of Drum #1); and
- Purge water from TWP-5 (Bucket #2).

We will coordinate proper disposal with DOT&PF and secure an Approval to Transport form with DEC approval prior to moving regulated waste offsite.



**Exhibit 7-1: IDW drums and buckets stored on north side of ARFF.**

## 7.4 Stormwater Recommendations

Due to the ammonia and urea observed in the IWs, we recommend the following:

- Review the CDV SWPPP for effluent monitoring requirements. Because the runway, taxiway, and apron deicing is primarily conducted with urea, all outfalls associated with these areas require monitoring.
- Revise the CDV SWPPP site map to identify outfalls, monitoring locations, and MSGP-required features listed in Section 5.2.3.3 and Section 11.S.5.1.
- Revise the CDV SWPPP to include an estimate of the ethylene glycol used at the facility for aircraft deicing. Section 11.S.5.2 of the MSGP requires this estimation.

## 7.5 Recommendations Limitations

The recommendations presented above are based on:

- Site conditions observed at the CDV in July 2020 and March 2021.

- The results of testing performed on surface soil, subsurface soil, and groundwater at the CDV.
- Shannon & Wilson's experience at the CDV.
- Publicly available literature and data reviewed for this project.
- Shannon & Wilson's understanding of the project and information provided by PDC, DOT&PF, and other members of the project team.
- The limitations of our approved scope and schedule described in our approved proposal dated December 16, 2020.

The information included in this report is based on limited sampling and should be considered representative of the times and locations at which the sampling occurred. Regulatory agencies may reach different conclusions than Shannon & Wilson. We have prepared and included the attachment "*Important Information About Your Environmental Report*" to assist you and others in understanding the use and limitations of this report.

## 8 REFERENCES

Alaska Department of Environmental Conservation (DEC), 2020a, 18 AAC 75, Oil and Other Hazardous Substances Pollution Control: Juneau, Alaska, Alaska Administrative Code (AAC), Title 18, Chapter 75, January available:  
<http://dec.alaska.gov/commish/regulations/>.

Alaska Department of Environmental Conservation (DEC), 2020b, 18 AAC 75.345, Groundwater Cleanup Levels: Juneau, Alaska, Alaska Administrative Code (AAC), Title 18, Chapter 75, Section 341, January, available:  
<http://dec.alaska.gov/commish/regulations/>.

Alaska Department of Environmental Conservation (DEC), 2020c, 18 AAC 75.341, Soil Cleanup Levels: Juneau, Alaska, Alaska Administrative Code (AAC), Title 18, Chapter 75, Section 341, January, available:  
<http://dec.alaska.gov/commish/regulations/>.

Alaska Department of Environmental Conservation (DEC), 2019, Technical Memorandum - Action Levels for PFAS in Water and Guidance on Sampling Groundwater and Drinking Water (updated): Juneau, Alaska, DEC Division of Spill Prevention and Response Contaminated Sites Program and Division of Environmental Health Drinking Water Program, October, available:  
[http://dec.alaska.gov/spar/csp/guidance\\_forms/csguidance.htm](http://dec.alaska.gov/spar/csp/guidance_forms/csguidance.htm).

- Alaska Department of Environmental Conservation (DEC), 2017a, Guidance on Developing Conceptual Site Models. DEC Division of Spill Prevention and Response, Contaminated Sites Program, July, available:  
[http://dec.alaska.gov/spar/csp/guidance\\_forms/csguidance.htm](http://dec.alaska.gov/spar/csp/guidance_forms/csguidance.htm).
- Alaska Department of Environmental Conservation (DEC), 2017b, Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites: Juneau, Alaska, DEC Division of Spill Prevention and Response, Contaminated Sites Program, March, available:  
[http://dec.alaska.gov/spar/csp/guidance\\_forms/csguidance.htm](http://dec.alaska.gov/spar/csp/guidance_forms/csguidance.htm).Alaska
- Alaska Department of Environmental Conservation (DEC), 2013, Monitoring Well Guidance: Juneau, Alaska, DEC Division of Spill Prevention and Response, Contaminated Sites Program, March, available:  
[http://dec.alaska.gov/spar/csp/guidance\\_forms/csguidance.htm](http://dec.alaska.gov/spar/csp/guidance_forms/csguidance.htm). Author, year of publication, title, and publishing data—all the information necessary for unique identification and library search
- L.P. Gough, R.C. Severson, and H.T. Shacklette, (1988), U.S. Geological Survey *Element Concentrations in Soils and Other Surficial Materials of Alaska*, United States Government Printing Office
- Shannon & Wilson, Inc., 2020 Cordova Airport Combined Maintenance Facility Draft 2020 Hazardous Materials Assessment Report: Report prepared by Shannon & Wilson, Inc., Fairbanks, 103311-001, for PDC Engineers, Inc., Fairbanks, Alaska. October 2020.
- Shannon & Wilson, Inc. 2020 Cordova Airport SREB/ARFF 2021 Geotechnical Data Report: Report prepared by Shannon & Wilson, Inc. Anchorage, 103311-002, for PDC Engineers, Inc., Fairbanks, Alaska. May 2021.
- Shannon & Wilson, Inc. 2020 Cordova Airport SREB/ARFF Well Evaluation Report: Report prepared by Shannon & Wilson, Inc. Anchorage, 103311-003, for PDC Engineers, Inc., Fairbanks, Alaska. May 2021.
- U.S. Environmental Protection Agency (EPA), 2016, Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA), Document Number 822-R-16-005: Washington, DC, U.S. EPA Office of Water, Health and Ecological Criteria Division, May, available: [https://www.epa.gov/sites/production/files/2016-05/documents/pfoa\\_health\\_advisory\\_final\\_508.pdf](https://www.epa.gov/sites/production/files/2016-05/documents/pfoa_health_advisory_final_508.pdf)

U.S. Environmental Protection Agency (EPA), 2018, 2018 Edition of the Drinking Water Standards and Health Advisories Tables, Document Number 822-F-18-001: Washington, DC, U.S. EPA Office of Water, Health and Ecological Criteria Division, March, available: <https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf>

**Table 1 - 2021 Water Supply Well Analytical Results for PFAS**

Analyte	EPA LHA	Units	Alaska Airlines	ARFF		Test Well 1R		Test Well 2
			PW-001	PW-002	PW-102	103311-W1R-GW1	103311-W1R-GW101	103311-W2-GW1
Perfluorohexanesulfonic acid (PFHxS)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluorohexanoic acid (PFHxA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluoroheptanoic acid (PFHpA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluorononanoic acid (PFNA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluorobutanesulfonic acid (PFBS)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluorodecanoic acid (PFDA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluoroundecanoic acid (PFUnA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluorododecanoic acid (PFDoA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluorotridecanoic acid (PFTrDA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluorotetradecanoic acid (PFTeA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Hexafluoropropylene oxide dimer acid (HFPO-DA)	--	ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
Perfluorooctanesulfonic acid (PFOS)	70†	ng/L	<1.8	2.3	2.1	<2.0	<2.0	<1.8
Perfluorooctanoic acid (PFOA)		ng/L	<1.8	<1.9	<1.9	<2.0	<2.0	<1.8
LHA Combined (PFOS + PFOA)	70†	ng/L	N/A	2.3 ‡	2.1 ‡	N/A	N/A	N/A

NOTES: Analytical results reported from Test America WO 320-71351-1.  
 Drinking-water Action level reported in ADEC's April 2019 Technical Memorandum. EPA's LHA was originally published in 2016.  
 PW-102 is a field duplicate for sample PW-002; 103311-W1R-GW101 is a field duplicate for sample 103311-W1R-GW1.

ng/L nanograms per liter  
 EPA Environmental Protection Agency  
 LHA Lifetime Health Advisory  
 † EPA LHA level is 70 ppt for PFOS and PFOA combined.  
 -- LHA not available.  
 < Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.  
 ‡ Minimum concentration, the LHA Combined concentration includes one or more result that is not detected greater than the MDL.  
 N/A Not applicable. The LHA Combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.

Table 2 - 2021 Soil Analytical Results (detections only)

Analytical Method	Analyte	Cleanup Level †	Units	B-9		B-10		B-11		B-12		B-13		B-14	
				SB9-1 (0.0-2.0 ft)	SB9-2 (5.0-7.0 ft)	SB10-1 (0.0-1.5 ft)	SB10-2 (7.0-8.5 ft)	SB11-1 (0.0-2.0 ft)	SB11-2 (7.0-8.0 ft)	SB12-1 (0.0-2.0 ft)	SB12-2 (6.5-8.0 ft)	SB13-1 (0.6-2.6 ft)	SB13-2 (7.0-8.6 ft)	SB14-1 (0.0-2.0 ft)	SB14-2 (6.5-8.0 ft)
AK102	Diesel Range Organics	230	mg/kg	<12.2B*	<8.09B*	<7.90B*	<7.04B*	<11.4B*	8.19J	38.9JH*	<10.5	78.6	<10.3	<10.9	<10.2
AK103	Residual Range Organics	9,700	mg/kg	52.6J	<53.5	<52.5	<53.0	<52.5	<54.0	387	<52.5	926	<51.5	<54.5	<50.5
SW8260D (VOC)	Benzene	0.022	mg/kg	<0.00705	<0.00550	<0.00620	<0.00535	<0.00670	<0.00635	<0.00915	<0.00550	<0.00795	<0.00520	<0.00795	<0.00500
	Chloroform	0.0071	mg/kg	<0.00225	<0.00177	<0.00198	<0.00171	<0.00214	<0.00202	<0.00294	<0.00176	<0.00255	<0.00167	<0.00253	<0.00160
	Ethylbenzene	0.13	mg/kg	<0.0141	<0.0111	<0.0124	<0.0107	<0.0134	<0.0127	<0.0184	<0.0110	<0.0159	<0.0104	<0.0159	<0.0100
	o-Xylene	1.5	mg/kg	<0.0141	<0.0111	<0.0124	<0.0107	<0.0134	<0.0127	<0.0184	<0.0110	0.0111J	<0.0104	<0.0159	<0.0100
	P & M -Xylene	1.5	mg/kg	<0.0281	<0.0221	<0.0249	<0.0215	<0.0267	<0.0254	<0.0367	<0.0220	0.0305J	<0.0208	<0.0317	<0.0200
	p-Isopropyltoluene	NA	mg/kg	<0.0560	<0.0442	<0.0497	<0.0428	<0.0535	<0.0505	<0.0735	<0.0439	<0.0635	<0.0416	<0.0635	<0.0399
	Toluene	6.7	mg/kg	<0.0141	<0.0111	0.0174J	<0.0107	<0.0134	<0.0127	<0.0184	<0.0110	<0.0159	<0.0104	0.0171J	<0.0100
	Total Xylenes	1.5	mg/kg	<0.0422	<0.0331	<0.0372	<0.0321	<0.0401	<0.0380	<0.0550	<0.0329	0.0417J	<0.0312	<0.0476	<0.0300
	Vinyl chloride	0.0008	mg/kg	<0.000449	<0.000353	<0.000398	<0.000343	<0.000427	<0.000405	<0.000585	<0.000351	<0.000510	<0.000333	<0.000505	<0.000320
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	<0.20	<0.21	0.12J	<0.19	0.042J	<0.20	0.042J	<0.21	0.044J	<0.21	0.037J	0.059J
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	<0.20	<0.21	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	<0.20	<0.21	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23
	Perfluorononanoic acid (PFNA)	NA	µg/kg	<0.20	0.063J	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	<0.20	<0.21	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	<0.20	<0.21	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	<0.20	<0.21	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.20	<0.21	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.20	<0.21	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.20	<0.21	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.26	<0.26	<0.25	<0.24	<0.25	<0.25	<0.29	<0.26	<0.28	<0.26	<0.26	<0.29
	Perfluorooctanesulfonic acid (PFOS)	3	µg/kg	<0.33J*	<0.53	4.3	<0.48	1.1	0.24J	1.3	0.23J	0.75	<0.52	0.55	0.46J
Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.20	<0.21	<0.20	<0.19	<0.20	<0.20	<0.23	<0.21	<0.22	<0.21	<0.21	<0.23	



Table 2 - 2021 Soil Analytical Results (detections only)

Analytical Method	Analyte	Cleanup Level †	Units	B-15		B-16		B-17		B-18		B-MW-1	
				SB15-1 (0.0-1.5 ft)	SB15-2 (6.5-8.5 ft)	SB16-1 (0.0-2.0 ft)	SB16-2 (6.5-7.5 ft)	SB17-1 (0.0-2.0 ft)	SB17-2 (6.6-8.3 ft)	SB18-1 (0.0-1.5 ft)	SB18-2 (7.0-8.2 ft)	SBMW1-1 (0.0-1.5 ft)	SBMW1-2 (2.0-3.9 ft)
AK102	Diesel Range Organics	230	mg/kg	55.0	<10.4	13.0J	<11.9	<10.9	<10.4	17.0J	<10.4	219	<11.7
AK103	Residual Range Organics	9,700	mg/kg	724	<52.0	124	<59.5	<54.5	<52.0	148	<51.5	2,330	<58.5
SW8260D (VOC)	Benzene	0.022	mg/kg	<0.00515	<0.00456	<0.00650	<0.00620	<0.00580	<0.00466	0.00515J	<0.00605	<0.00660	<0.00795
	Chloroform	0.0071	mg/kg	<0.00165	<0.00146	<0.00209	<0.00198	<0.00186	<0.00149	<0.00197	<0.00194	0.00211J	<0.00255
	Ethylbenzene	0.13	mg/kg	<0.0103	<0.00910	<0.0130	<0.0124	<0.0116	<0.00930	0.00957J	<0.0121	<0.0132	<0.0159
	o-Xylene	1.5	mg/kg	<0.0103	<0.00910	<0.0130	<0.0124	<0.0116	<0.00930	0.0118J	<0.0121	<0.0132	<0.0159
	P & M -Xylene	1.5	mg/kg	<0.0207	<0.0182	<0.0261	<0.0249	<0.0232	<0.0186	0.0373J	<0.0242	<0.0265	<0.0318
	p-Isopropyltoluene	NA	mg/kg	<0.0413	<0.0365	<0.0520	<0.0497	<0.0463	<0.0372	<0.0491	<0.0484	<0.0530	<0.0635
	Toluene	6.7	mg/kg	<0.0103	<0.00910	<0.0130	<0.0124	<0.0116	<0.00930	0.0444	<0.0121	0.00978J	<0.0159
	Total Xylenes	1.5	mg/kg	<0.0309	<0.0273	<0.0391	<0.0372	<0.0348	<0.0279	0.0491J	<0.0363	<0.0396	<0.0477
	Vinyl chloride	0.0008	mg/kg	<0.000330	<0.000292	<0.000417	<0.000398	<0.000371	<0.000298	<0.000393	<0.000387	0.00291	<0.000510
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	0.25	<0.21J*	0.20J	0.22	0.13J	0.22	<0.20	<0.20	<0.20	<0.23
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	0.055J	<0.050J*	<0.21	<0.050J*	<0.054J*	<0.19	<0.20	<0.20	<0.20	<0.23
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	<0.21	<0.21J*	<0.21	<0.21	<0.20	<0.19	<0.20	<0.20	<0.20	<0.23
	Perfluorononanoic acid (PFNA)	NA	µg/kg	0.36	<0.21J*	<0.21	<0.21	0.053J	0.074J	<0.20	<0.20	<0.20	<0.23
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	<0.21	<0.21J*	<0.21	<0.21	<0.20	<0.19	<0.20	<0.20	<0.20	<0.23
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	0.16J	<0.21J*	0.082J	0.056J	0.14J	0.082J	<0.20	<0.20	<0.20	<0.23
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	0.056J	0.66J*	0.083J	<0.21	0.67	0.038J	<0.20	<0.20	<0.20	<0.23
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.21	0.26J*	0.071J	<0.21	<0.20	<0.19	<0.20	<0.20	<0.20	<0.23
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.21	0.12J	0.057J	<0.21	0.13J	<0.19	<0.20	<0.20	<0.20	<0.23
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.21	<0.059J*	<0.21	<0.21	<0.20	<0.19	<0.20	<0.20	<0.20	<0.23
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.26	<0.26J*	<0.26	<0.26	<0.26	<0.24	0.18J	<0.25	<0.25	<0.29
	Perfluorooctanesulfonic acid (PFOS)	3	µg/kg	24	150J*	3.1	2.5	4.4	8.7	<0.51	<0.50	0.32J	<0.58
Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.21	<0.21J*	<0.21	<0.21	<0.20	<0.19	<0.20	<0.20	<0.20	<0.23	

Table 2 - 2021 Soil Analytical Results (detections only)

Analytical Method	Analyte	Cleanup Level †	Units	B-MW-2		B-MW-3			B-MW-4			B-TWP-5		
				SBMW2-1 (0.0-1.5 ft)	SBMW2-2 (7.0-7.8 ft)	SBMW3-1 (0.0-2.0 ft)	SBMW3-101 (0.0-2.0 ft)	SBMW3-2 (5.0-5.7 ft)	SBMW4-1 (0.0-2.0 ft)	SBMW4-101 (0.0-2.0 ft)	SBMW4-2 (7.0-8.3 ft)	SBTWP5-1 (0.0-2.0 ft)	SBTWP5-2 (6.2-8.4 ft)	SBTWP5-102 (6.2-8.4 ft)
AK102	Diesel Range Organics	230	mg/kg	178	<10.9	59.9	49.1	<10.4	29.9	<27.8B*	<10.5	34.1	<10.7	<7.74B*
AK103	Residual Range Organics	9,700	mg/kg	2,030	<54.5	673	535	<52.0	248	254	<52.5	348	<53.0	<54.5
SW8260D (VOC)	Benzene	0.022	mg/kg	<0.00695	0.00534J	<0.00840	<0.00995	<0.00695	<0.00755	<0.00790	<0.00620	<0.00620	<0.00600	<0.00675
	Chloroform	0.0071	mg/kg	<0.00222	<0.00194	<0.00269	<0.00317	<0.00223	<0.00242	<0.00252	<0.00198	<0.00198	<0.00192	<0.00216
	Ethylbenzene	0.13	mg/kg	<0.0138	<0.0121	<0.0168	<0.0199	<0.0140	<0.0152	<0.0158	<0.0124	<0.0124	<0.0120	<0.0135
	o-Xylene	1.5	mg/kg	<0.0138	0.0148J	<0.0168	<0.0199	<0.0140	<0.0152	<0.0158	<0.0124	<0.0124	<0.0120	<0.0135
	P & M -Xylene	1.5	mg/kg	<0.0278	0.0292J	<0.0336	<0.0397	<0.0279	<0.0302	<0.0315	<0.0248	<0.0249	<0.0240	<0.0270
	p-Isopropyltoluene	NA	mg/kg	<0.0555	<0.0486	<0.0675	<0.0795	<0.0555	<0.0605	0.0429J	<0.0495	<0.0497	<0.0481	<0.0540
	Toluene	6.7	mg/kg	<0.0138	0.0292	<0.0168	<0.0199	<0.0140	<0.0152	<0.0158	<0.0124	<0.0124	<0.0120	<0.0135
	Total Xylenes	1.5	mg/kg	<0.0416	0.0440J	<0.0505	<0.0595	<0.0418	<0.0454	<0.0473	<0.0371	<0.0372	<0.0360	<0.0405
	Vinyl chloride	0.0008	mg/kg	<0.000443	<0.000389	<0.000540	<0.000635	<0.000446	<0.000485	<0.000505	<0.000396	<0.000398	<0.000385	<0.000432
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	0.039J	<0.20	0.067J	0.053J	<0.19	<0.23	<0.22	<0.19	0.70JH*	0.38	0.39
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	<0.22	<0.20	<0.25	<0.21	0.042J	<0.23	<0.22	<0.19	0.13J	0.13J	<0.092J*
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	<0.22	<0.20	<0.25	<0.21	<0.19	<0.23	<0.22	<0.19	0.035J	0.065J	0.053J
	Perfluorononanoic acid (PFNA)	NA	µg/kg	<0.22	<0.20	0.051J	0.065J	<0.19	0.065J	<0.22	<0.19	0.042J	0.14J	0.088J
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	<0.22	<0.20	<0.25	<0.21	<0.19	<0.23	<0.22	<0.19	0.081J	<0.21	<0.22
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	0.078J	<0.20	0.26	0.41	<0.19	<0.23	<0.22	<0.19	0.059J	<0.21	<0.22
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	0.13J	<0.20	<0.25	<0.21	<0.19	<0.23	<0.22	<0.19	<0.20	<0.21	<0.22
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.22	<0.20	<0.25	<0.21	<0.19	<0.23	<0.22	<0.19	<0.20	<0.21	<0.22
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.22	<0.20	<0.25	<0.21	<0.19	<0.23	<0.22	<0.19	<0.20	<0.21	<0.22
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.22	<0.20	<0.25	<0.21	<0.19	<0.23	<0.22	<0.19	<0.20	<0.21	<0.22
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.28	<0.25	<0.31	<0.27	<0.24	<0.28	<0.27	<0.24	<0.25	<0.26	<0.27
	Perfluorooctanesulfonic acid (PFOS)	3	µg/kg	1.2	<0.51	2.0	2.3	0.38J	<0.48J*	<0.32J*	<0.48	15	17J*	51
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.22	<0.20	<0.25	<0.21	0.17J	<0.23	<0.22	<0.19	0.12J	0.44	0.33

**Table 2 - 2021 Soil Analytical Results (detections only)**

Analytical Method	Analyte	Cleanup Level †	Units	B-TWP-6			B-TWP-7	
				SBTWP6-1 (0.0-1.5ft)	SBTWP6-101 (0.0-2.0 ft)	SBTWP6-2 (7.0-8.3 ft)	SBTWP7-1 (0.0-1.5 ft)	SBTWP7-2 (7.0-8.5 ft)
AK102	Diesel Range Organics	230	mg/kg	203	163	<6.69B*	<8.53B*	<7.99B*
AK103	Residual Range Organics	9,700	mg/kg	2,240	1,780	<51.5	<53.0	<53.0
SW8260D (VOC)	Benzene	0.022	mg/kg	<0.00710	<0.00695	<0.00479	<0.00645	<0.00515
	Chloroform	0.0071	mg/kg	<0.00227	<0.00222	<0.00153	<0.00207	<0.00165
	Ethylbenzene	0.13	mg/kg	<0.0142	<0.0138	<0.00960	<0.0129	<0.0103
	o-Xylene	1.5	mg/kg	<0.0142	<0.0138	<0.00960	<0.0129	<0.0103
	P & M -Xylene	1.5	mg/kg	<0.0284	<0.0277	<0.0192	<0.0259	<0.0206
	p-Isopropyltoluene	NA	mg/kg	<0.0570	<0.0555	<0.0384	<0.0515	<0.0412
	Toluene	6.7	mg/kg	<0.0142	<0.0138	<0.00960	<0.0129	<0.0103
	Total Xylenes	1.5	mg/kg	<0.0426	<0.0415	<0.0288	<0.0388	<0.0309
	Vinyl chloride	0.0008	mg/kg	<0.000454	<0.000443	<0.000307	<0.000414	<0.000329
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	0.43	0.53	2.6	<0.21	<0.20
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	0.12J	0.12J	0.058J	<0.21	<0.20
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	<0.21	<0.21	0.046J	<0.21	<0.20
	Perfluorononanoic acid (PFNA)	NA	µg/kg	<0.045J*	<0.075J*	<0.20	<0.21	<0.20
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	<0.21	0.032J	<0.20	<0.21	<0.20
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	0.049J	<0.21	<0.20	<0.21	<0.20
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	0.16J	0.19J	<0.20	<0.21	<0.20
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.21	<0.21	<0.20	<0.21	<0.20
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.21	<0.21	<0.20	<0.21	<0.20
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.21	<0.21	<0.20	<0.21	<0.20
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.26	<0.26	<0.26	<0.27	<0.25
	Perfluorooctanesulfonic acid (PFOS)	3	µg/kg	<b>7.8</b>	<b>8.9</b>	<b>9.7</b>	<0.53	<0.51
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.21	<0.21	0.46	<0.21	<0.20

## Table 2 - 2021 Soil Analytical Results (detections only)

- NOTES: Results reported from SGS work order 1211172 and Eurofins TestAmerica work order 320-71360-1.  
 Sample *SBMW3-101* is a field duplicate of sample *SBMW3-1*, sample *SBMW4-101* is a field duplicate of sample *SBMW4-1*, sample *SBTWP5-102* is a field duplicate of sample *SBTWP5-2*, and sample *SBTWP6-101* is a field duplicate of sample *SBTWP6-1*
- † ADEC Cleanup Levels from 18 AAC 75.341 Tables B2. Method Two - Petroleum Hydrocarbon Soil Cleanup Levels – Over 40-Inch Zone - Migration to Groundwater or Table B1. Method Two - Soil Cleanup Levels Table - Migration to Groundwater.
- ADEC Alaska Department of Environmental Conservation  
 PFAS per- and poly-fluoroalkyl substances  
 VOCs volatile organic compounds  
 mg/kg milligrams per kilogram  
 µg/kg micrograms per kilogram  
 NA No applicable ADEC cleanup level exists for the associated analyte.  
 — Analyte/analysis not requested for this sample.  
 < Analyte was not detected; reported as <LOD.  
 <Bold The laboratory's limit of detection (LOD) is greater than the regulatory limit.  
 Bold The detected concentration exceeds the ADEC cleanup level for the associated analyte.  
 J Estimated concentration, detected less than the limit of quantitation (LOQ). Flag applied by the laboratory.  
 B\* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (\*)  
 J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)  
 JH\* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)

**Table 3 - 2021 Groundwater Analytical Results (detections only)**

Analytical Method	Analyte	Cleanup Level †	LHA	Units	MW-1	MW-2		MW-3	MW-4	TWP-5		TWP-6	TWP-7
					MW-1	MW-2	MW-102	MW-3	MW-4	TWP-5	TWP-105	TWP-6	TWP-7
SW8260D (VOC)	1,2,3-Trichloropropane	0.0075		µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	Chloromethane	190	NA	µg/L	<0.500	<0.500	<0.500	0.730JH*	0.650JH*	<0.500	<0.500	<0.500	<0.500
	Trichlorofluoromethane	5,200		µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	0.350J	0.350J	<0.500	<0.500
EPA 537(mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)			ng/L	1.1J	1.3J	1.5J	2.8	0.85J	2.8	2.2	11	2.9
	Perfluorohexanoic acid (PFHxA)	NA	NA	ng/L	0.61J	6.5	6.3	2.0	0.77J	0.86J	1.0J	1.9	3.1
	Perfluoroheptanoic acid (PFHpA)			ng/L	<1.7	3.2	3.1	0.72J	0.3J	0.48J	<1.8	0.53J	1.6J
	Perfluorononanoic acid (PFNA)			ng/L	<1.7	2.0	1.8	<1.7	<1.7	<1.8	<1.8	<1.8	0.76J
	Perfluorobutanesulfonic acid (PFBS)	2000	NA	ng/L	<1.7	<1.7	<1.7	0.18J	<1.7	0.2J	<1.8	0.52J	0.3J
	Perfluorotridecanoic acid (PFTrDA)	NA	NA	ng/L	<1.7	<1.7	<1.7	<1.7	<1.7	<1.8	<1.8	1.8JH*	<1.8
	Perfluorooctanesulfonic acid (PFOS)	400	70	ng/L	<2.6	<7.7	<7.1	<6.1	<1.7	<b>82</b>	<b>90</b>	48	<5.3
	Perfluorooctanoic acid (PFOA)		70	ng/L	<1.7	3.1	2.9	0.79J	<1.7	1.3J	1.1J	3.3	1.4J
LHA Combined (PFOS + PFOA)	NA	70	ng/L	N/A <sup>o</sup>	3.1‡	2.9	0.79‡	N/A <sup>o</sup>	<b>83.3</b>	<b>91.1</b>	51.3	1.4‡	

- NOTES: Results reported from SGS work order 1211172 and Eurofins TestAmerica work order 320-71360-1.  
 Sample MW-102 is a field duplicate of sample MW-2 and sample TWP5-105 is a field duplicate of sample TWP-5
- † ADEC Cleanup Levels from 18 AAC 75.341 Tables B2. Method Two - Petroleum Hydrocarbon Soil Cleanup Levels – Over 40-Inch Zone - Migration to Groundwater or Table B1. Method Two - Soil Cleanup Levels Table - Migration to Groundwater.
  - ADEC Alaska Department of Environmental Conservation
  - EPA Environmental Protection Agency
  - LHA Lifetime Health Advisory
  - PFAS per- and poly-fluoroalkyl substances
  - VOCs volatile organic compounds
  - ng/L nanograms per liter
  - µg/L micrograms per liter
  - NA No applicable ADEC cleanup level or LHA exists for the associated analyte.
  - N/A<sup>o</sup> Not applicable. The LHA Combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.
  - ‡ Minimum concentration, the LHA Combined concentration includes one or more result that is not detected greater than the MDL.
  - < Analyte was not detected; reported as <LOD.
  - Bold** Concentration exceeds LHA level.
  - <**Bold** The laboratory's limit of detection (LOD) is greater than the regulatory limit.
  - J Estimated concentration, detected less than the limit of quantitation (LOQ). Flag applied by the laboratory.
  - JH\* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)

**Table 4 - Analytical Results for Injection Well Samples (detections only)**

Analytical Method	Analyte	Cleanup Level †	Units	B-IW-19		B-IW-20		
				SBIW19-1 (6.0-7.5 ft)	SBIW19-2 (7.5-8.5 ft)	SBIW20-1 (6.0-7.5 ft)	SBIW20-101 (6.0-7.5 ft)	SBIW20-2 (7.5-8.7 ft)
AK102	Diesel Range Organics	230	mg/kg	<b>1,030</b>	28.1	<b>5,540J*</b>	<b>2,980J*</b>	59.0
AK103	Residual Range Organics	9,700	mg/kg	5,180	<51.5	<b>20,600J*</b>	<b>11,100J*</b>	139
SW8260D (VOC)	Ethylbenzene	0.13	mg/kg	<0.0715	<0.0137	0.0133J	0.0149J	<0.0170
	Naphthalene	0.038	mg/kg	<b>0.0887J</b>	<0.0137	<0.0170	<0.0177	<0.0170
	o-Xylene	1.5	mg/kg	<0.0715	<0.0137	0.0163J	0.0124J	<0.0170
	P & M -Xylene	1.5	mg/kg	<0.143	<0.0273	0.0387J	<0.0355	<0.0341
	Styrene	10	mg/kg	<0.0715	<0.0137	0.0870J*	0.523J*	<0.0170
	Toluene	6.7	mg/kg	<0.0715	<0.0137	0.0483J*	<0.0177J*	<0.0170
	Total Xylenes	1.5	mg/kg	<0.215	<0.0410	0.0550J	<0.0530	<0.0510
SW8270D SIM	Pyrene	87	mg/kg	—	—	0.138J*	0.0690J*	—
SW8270D	Bis (2-ethylhexyl) phthalate	88	mg/kg	4.81J	<0.129	13.3J*	6.16J*	<0.132
SW8015B	Ethylene Glycol	110	mg/kg	R*	R*	<10.0	—	R*
4500-NH3 G	Ammonia as N	NA	mg/kg	25.3	3.49JH*	1,340	—	550
SW6020B (RCRA Metals)	Arsenic	0.2	mg/kg	<b>3.46J</b>	<b>4.37</b>	<b>3.45</b>	<b>2.34</b>	<b>4.59</b>
	Barium	2,100	mg/kg	84.3	81.8	85.9	91.0	62.6
	Cadmium	9.1	mg/kg	0.389J	0.0702J	1.11	1.17	0.0646J
	Chromium	100,000	mg/kg	28.7	31.3	33.5	30.7	30.2
	Lead	400	mg/kg	21.2	6.28	53.4	59.6	5.76
	Mercury	0.36	mg/kg	<0.565	<0.145	0.217J	0.147J	<0.150
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	3,100J*	7.2	7.9J*	14J*	1.3
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	730J*	1.8	2.2	3.2	0.72
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	170J*	0.34	0.37J*	0.68J*	0.076J
	Perfluorononanoic acid (PFNA)	NA	µg/kg	43J*	0.067J	0.64J*	2.0J*	0.042J
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	180J*	0.44	0.74	0.99	0.27
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	120J*	0.13J	8.2J*	30J*	0.14J

**Table 4 - Analytical Results for Injection Well Samples (detections only)**

Analytical Method	Analyte	Cleanup Level †	Units	B-IW-19			B-IW-20	
				SBIW19-1 (6.0-7.5 ft)	SBIW19-2 (7.5-8.5 ft)	SBIW20-1 (6.0-7.5 ft)	SBIW20-101 (6.0-7.5 ft)	SBIW20-2 (7.5-8.7 ft)
EPA 537(Mod) (PFAS)	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	17J*	0.041J	19J*	51J*	0.10J
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	32J*	0.32	9.3J*	31J*	<0.21
	Perfluorotridecanoic acid (PFTrDA)	NA	µg/kg	5.9	0.23	<0.23	16	<0.21
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	24J*	0.67J*	4.0J*	14J*	0.057J
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NA	µg/kg	9.0	<2.0	6.6J*	17J*	<2.1
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NA	µg/kg	12J*	<2.0	6.4J*	15J*	<2.1
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NA	µg/kg	0.21J*	<0.20	<0.23	<0.23	<0.21
	Perfluorooctanesulfonic acid (PFOS)	3	µg/kg	<b>11,000J*</b>	<b>170</b>	<b>2,600J*</b>	<b>5,000J*</b>	<b>120</b>
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<b>1,500J*</b>	1.5	<b>4.3J*</b>	<b>7.3J*</b>	0.55

- NOTES: Results reported from SGS North America, Inc. work order 1211171 and Eurofins TestAmerica work order 320-71360-1.  
Sample *SBIW20-101* is a field-duplicate of sample *SBIW20-01* .
- † ADEC Cleanup Levels from 18 AAC 75.341 Tables B2. Method Two - Petroleum Hydrocarbon Soil Cleanup Levels – Over 40-Inch Zone - Migration to Groundwater or Table B1. Method Two - Soil Cleanup Levels Table - Migration to Groundwater.
- ADEC Alaska Department of Environmental Conservation  
 PFAS per- and poly-fluoroalkyl substances  
 PAHs polynuclear aromatic hydrocarbons  
 VOC volatile organic compounds  
 mg/kg milligrams per kilogram  
 µg/kg micrograms per kilogram  
 NA No applicable ADEC cleanup level exists for the associated analyte.  
 — Analyte/analysis not requested for this sample.  
 < Analyte was not detected; reported as <LOD.  
 <Bold The laboratory's limit of detection (LOD) is greater than the regulatory limit.  
 Bold The detected concentration exceeds the ADEC cleanup level for the associated analyte.  
 J Estimated concentration, detected less than the limit of quantitation (LOQ). Flag applied by the laboratory.  
 B\* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (\*)  
 J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)  
 JH\* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)  
 R\* Result is rejected due to serious compounding QC failures. Flag applied by Shannon & Wilson, Inc. (\*)

**Table 5 - Test Well Soil Analytical Results (Detections Only)**

Analytical Method	Analyte	Cleanup Level <sup>†</sup>	Units	103311-W1RS1	
				103311-W1RS1	103311-W1RS101
AK101	Gasoline Range Organics	260	mg/kg	<2.01B*	<2.03B*
AK102	Diesel Range Organics	230	mg/kg	11.8J	<10.1
AK103	Residual Range Organics	9,700	mg/kg	48.3J	58.3J
SW8260D	1,2,3-Trichloropropane	0.000031	mg/kg	<0.000805	<0.000810
(VOCs)	1,2-Dibromoethane	0.00024	mg/kg	<0.000402	<0.000406

**NOTES:**

Results reported from SGS work order 1211478.

Samples were submitted for analysis of GRO, DRO, RRO, VOCs, and PAHs. Only detected results are presented in Table 6.

 Sample *103311-W1RS101* is a field duplicate of sample *103311-W1RS1*
<sup>†</sup> ADEC Cleanup Levels from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

ADEC Alaska Department of Environmental Conservation

VOCs volatile organic compounds

mg/kg milligrams per kilogram

&lt; Analyte was not detected; reported as &lt;LOD.

**<Bold** The laboratory's limit of detection (LOD) is greater than the regulatory limit.

J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.

B\* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon &amp; Wilson, Inc. (\*)



**Table 6 - Test Well Groundwater Analytical Results Summary**

Analytical Method	Analyte	MCL <sup>†</sup>	Units	Test Well 1R		Test Well 2
				W1R-GW1	W1R-GW101	W2-GW1
EP200.8 (Inorganics)	Aluminum	200 <sup>a</sup>	µg/L	<10.0	—	437
	Antimony	6	µg/L	<0.500	—	<0.500
	Arsenic	10	µg/L	<2.50	—	<2.50
	Barium	2,000	µg/L	8.50	—	14.0
	Beryllium	NA	µg/L	<0.200	—	<0.200
	Cadmium	5	µg/L	<0.250	—	<0.250
	Calcium	NA	µg/L	20,500	—	20,600
	Chromium	100	µg/L	<1.00	—	<1.00
	Copper	1,000 <sup>a</sup>	µg/L	1.67	—	1.79
	Iron	300 <sup>a</sup>	µg/L	3,830	—	1,860
	Magnesium	NA	µg/L	3,960	—	5,710
	Manganese	50 <sup>a</sup>	µg/L	140	—	87.4
	Nickel	700 <sup>b</sup>	µg/L	<1.00	—	<1.00
	Selenium	50	µg/L	<2.50	—	<2.50
	Silver	100 <sup>a</sup>	µg/L	<0.500	—	<0.500
	Sodium	20,000 <sup>b</sup>	µg/L	6,230	—	8,080
	Thallium	2	µg/L	<0.500	—	<0.500
Zinc	5000 <sup>a</sup>	µg/L	<5.00	—	<5.00	
EPA 300.0	Chloride	250 <sup>a</sup>	mg/L	2.81	—	6.19
	Fluoride	2 <sup>a</sup>	mg/L	0.101J	—	0.112J
	Sulfate	250 <sup>a</sup>	mg/L	<0.100J*	—	<0.100
EP200.8 M	Mercury	2	µg/L	0.248J	—	0.207J
EPA 524.2 (VOCs)	VOCs	various	µg/L	R*	—	R*
SM21 2320B	Alkalinity	NA	mg/L	85.5	—	90.6
	CO <sub>3</sub> Alkalinity	NA	mg/L	<5.00	—	<5.00
	HCO <sub>3</sub> Alkalinity	NA	mg/L	85.5	—	90.6
	OH Alkalinity	NA	mg/L	<5.00	—	<5.00
SM21 2340B	Hardness as CaCO <sub>3</sub>	NA	mg/L	51.3	—	51.4
SM21 2540C	Total Dissolved Solids	500 <sup>a</sup>	mg/L	89.0	—	112
SM21 4500-CN C,E	Cyanide	200	µg/L	<2.5	—	<2.5
SM21 4500-H B	pH	6.5 - 8.5 <sup>a</sup>	pH units	7.3	—	7.7
SM21 4500NO3-F	Total Nitrate/Nitrite-N	10	mg/L	<0.100J*	—	<0.100J*
SM23 2120B	Color, True	15 <sup>a</sup>	PCU	75.0J*	—	40.0J*
SM2330B	Langlier Index at 50°F	NA	NA	-0.95	—	-0.53
8270D SIM LV	PAHs	various	µg/L	ND	ND	ND
AK101	Gasoline Range Organics	2.2	mg/L	<0.0500	—	<0.0500
AK102	Diesel Range Organics	1.5	mg/L	<0.326	<0.341	<0.334
AK103	Residual Range Organics	1.1	mg/L	<0.272	<0.284	<0.278

**Table 6 - Test Well Groundwater Analytical Results Summary**

Analytical Method	Analyte	MCL <sup>†</sup>	Units	Test Well 1R		Test Well 2
				W1R-GW1	W1R-GW101	W2-GW1

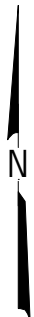
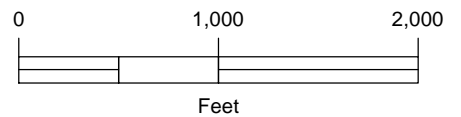
- NOTES:
- Results reported from SGS work order 1211479.
  - Sample 103311-W1R-GW101 is a field duplicate of sample 103311-W1R-GW1
  - Sample ID number is preceded by "103311-" on the chain of custody.
  - † MCLs are listed in the EPA's 2018 Edition of the Drinking Water Standards and Health Advisory Tables.
  - <sup>a</sup> Results compared to EPA's National Secondary Drinking Water Regulations Standards
  - <sup>b</sup> Results compared to EPA's 2018 Drinking Water Advisory (non-regulatory)
  - < Analyte was not detected; reported as <LOD.
  - analysis not requested
  - J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ).
  - J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)
  - R\* Result is rejected due to serious or compounding quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc. (\*)
  - EPA US Environmental Protection Agency
  - MCL EPA Maximum Contaminant Level
  - mg/L milligrams per liter
  - NA No applicable regulatory level exists for the associated analyte.
  - PAHs polynuclear aromatic hydrocarbons
  - VOCs volatile organic compounds
  - µg/L micrograms per liter



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**LEGEND**

- Project Location
- Project Area



Cordova Airport Combined Maintenance Facility  
2021 Site Characterization Report  
Cordova, Alaska

**CORDOVA AIRPORT  
VICINITY MAP**

May 2021

103311-009

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GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

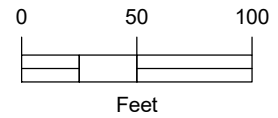
**Figure 1**



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**LEGEND**

- |                   |                       |   |
|-------------------|-----------------------|---|
| ⊕                 | Environmental Boring  | <b>Existing Features</b>                          |
| ⊗                 | Monitoring Well       | Aircraft Rescue and Fire Fighting (ARFF) building |
| ⊕                 | Temporary Well Point  | Existing ARFF Water Supply Well                   |
| ●                 | Injection Well Boring | Underground Heating Oil Tank                      |
| Water Supply Well |                       | Aboveground Storage Tank                          |
| Test Well         |                       |   |
| ⊕                 | Geotechnical Boring   |   |



- Proposed Construction**
- Future Structures
  - Utility Excavation
  - Proposed Driveway/Apron

Cordova Airport Combined Maintenance Facility  
2021 Site Characterization Report  
Cordova, Alaska

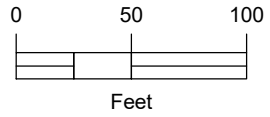
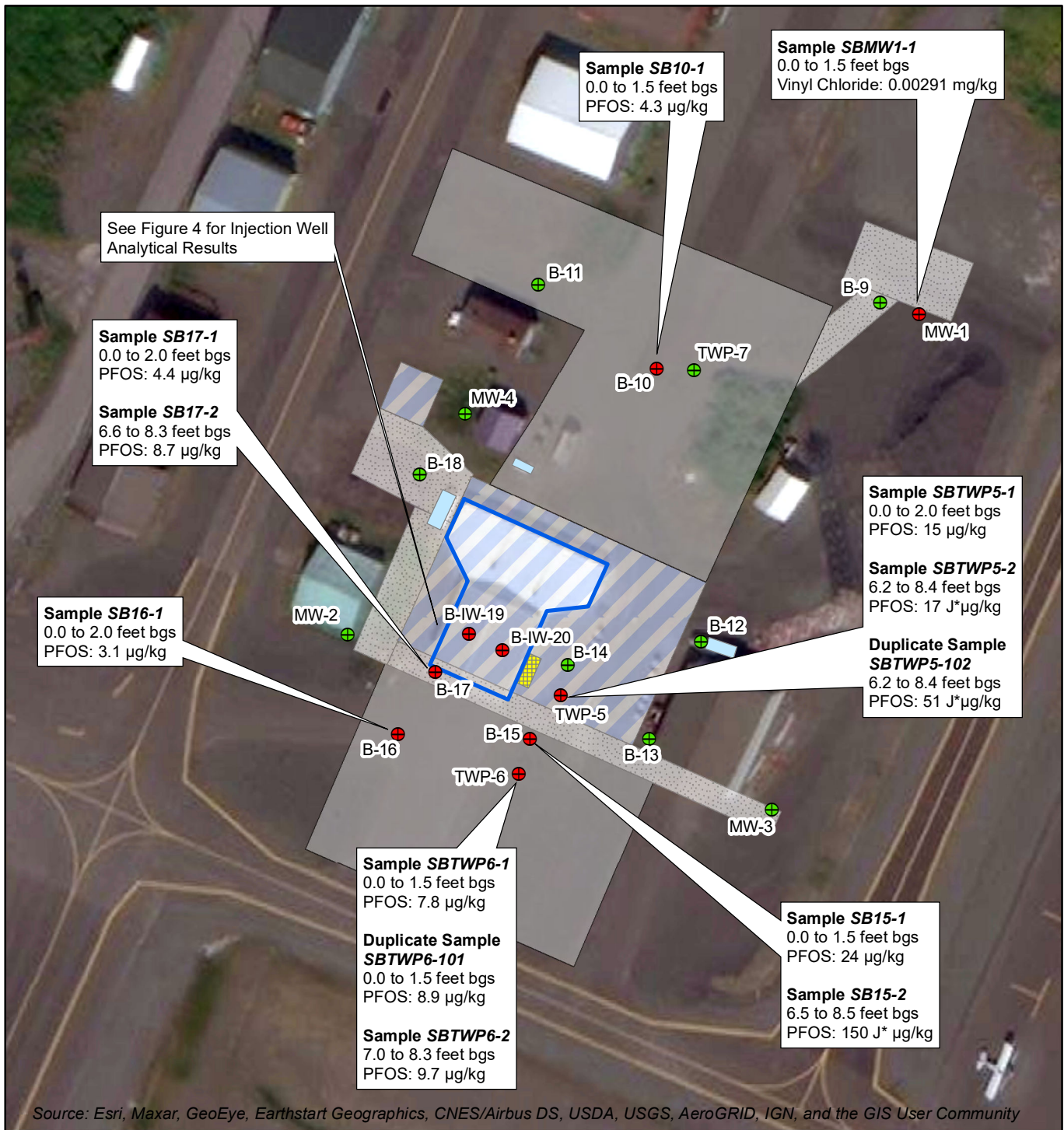
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**SITE MAP WITH  
SAMPLE LOCATIONS**

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May 2021 103311-009

**SHANNON & WILSON, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS **Figure 2**



**LEGEND**

- 2021 soil boring results below CUL
- 2021 soil boring results exceeding CUL
- Proposed Construction**
- Future Structures
- Utility Excavation
- Proposed Driveway/Apron
- Existing Features**
- Aircraft Rescue and Fire Fighting (ARFF) building
- Underground Heating Oil Tank
- Aboveground Storage Tank

Cordova Airport Combined Maintenance Facility  
2021 Site Characterization Report  
Cordova, Alaska

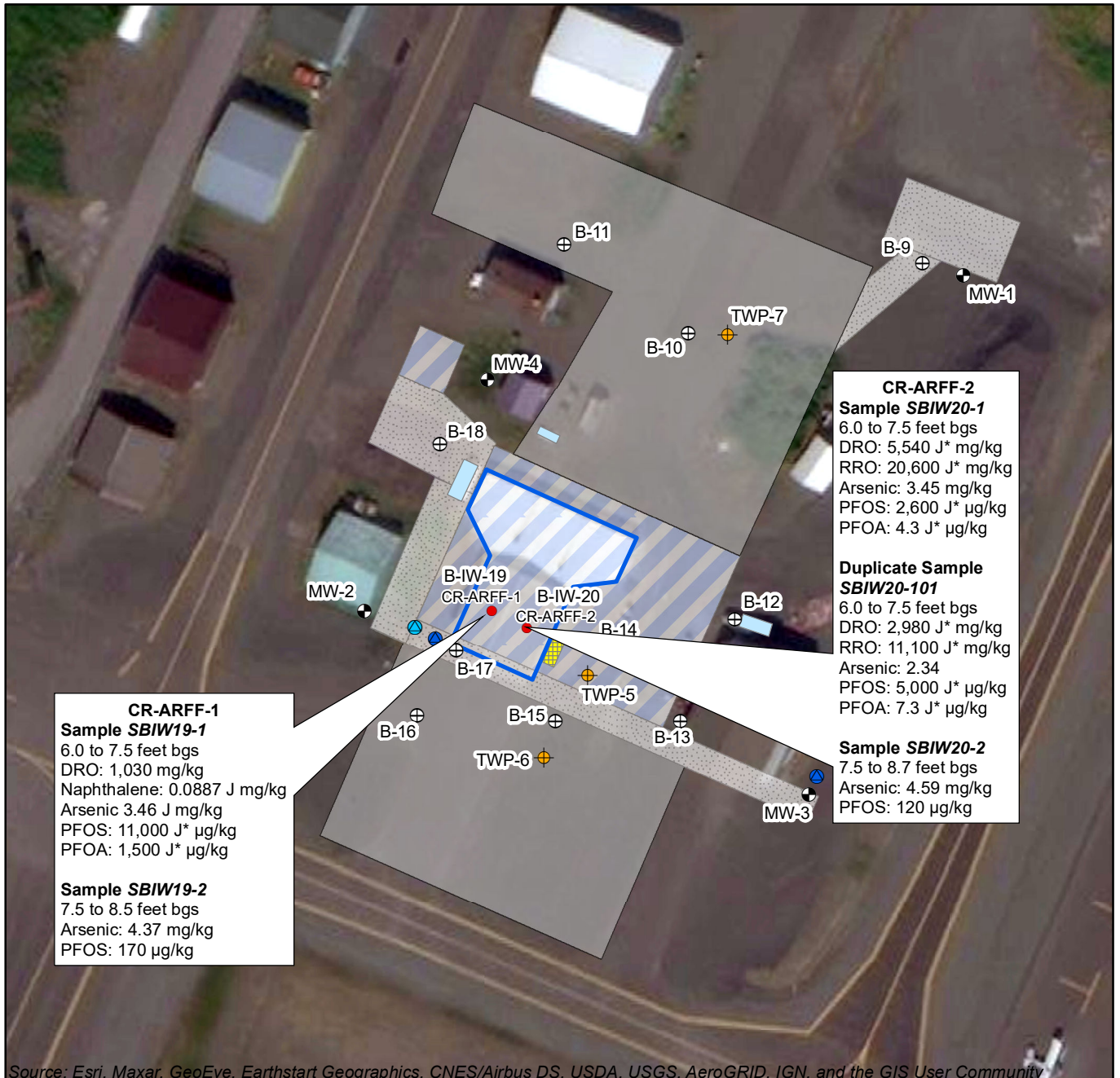
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**2021 SOIL BORING  
ANALYTICAL RESULTS**

May 2021 103311-009

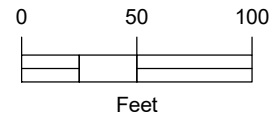
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**Figure 3**



**LEGEND**

- |                              |                         |   |
|------------------------------|-------------------------|---|
| ⊕                            | Environmental Boring    | <b>Existing Features</b>                          |
| ⊗                            | Monitoring Well         | Aircraft Rescue and Fire Fighting (ARFF) building |
| ⊕                            | Temporary Well Point    | Existing ARFF Water Supply Well                   |
| ●                            | Injection Well Boring   | Underground Heating Oil Tank                      |
|                              | Water Supply Well       | Aboveground Storage Tank                          |
|                              | Test Well               |   |
| <b>Proposed Construction</b> |                         |   |
|                              | Future Structures       |   |
|                              | Utility Excavation      |   |
|                              | Proposed Driveway/Apron |   |



Cordova Airport Combined Maintenance Facility  
 2021 Site Characterization Report  
 Cordova, Alaska

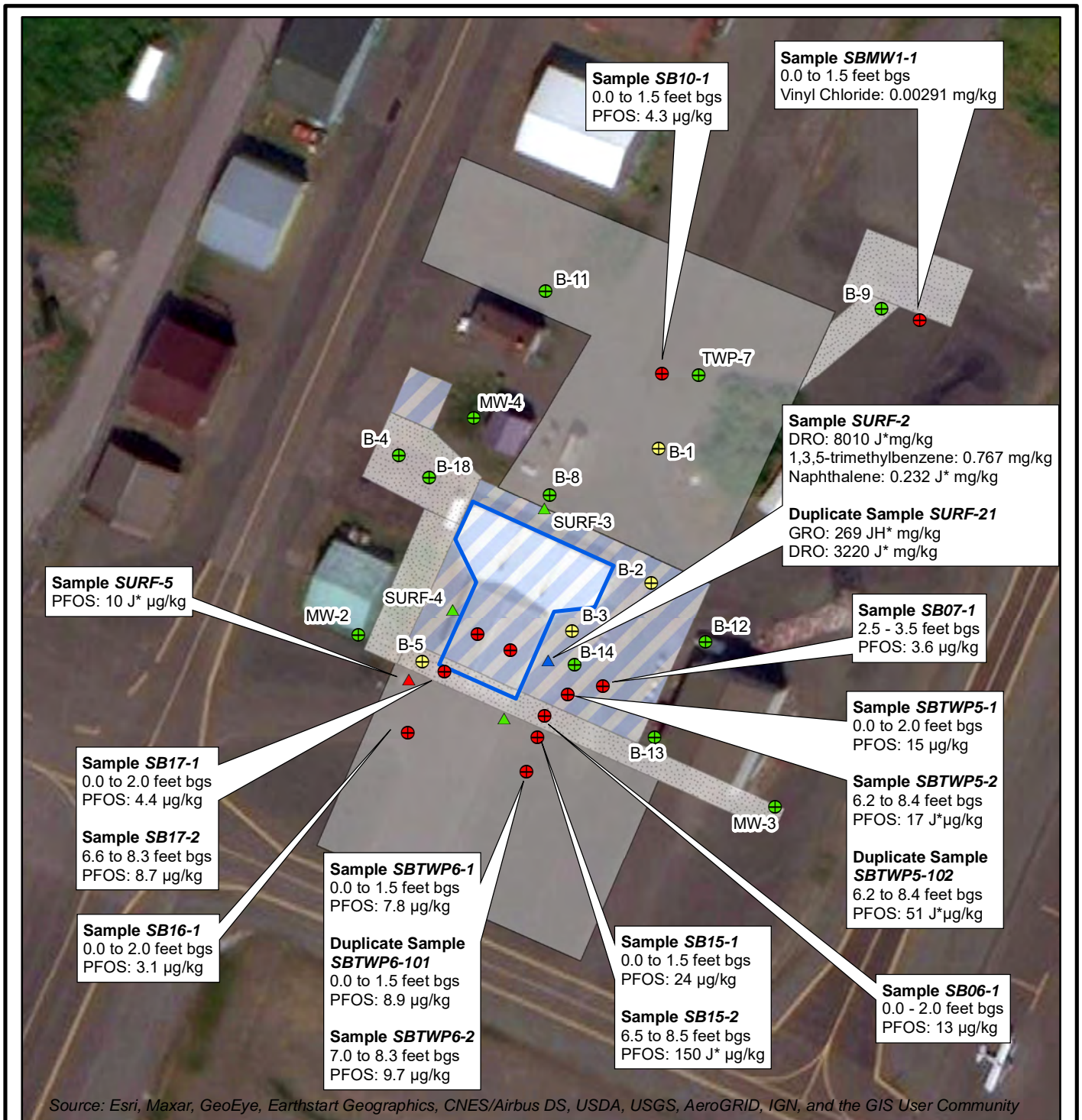
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**INJECTION WELL  
 ANALYTICAL RESULTS**

May 2021 103311-009

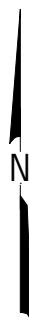
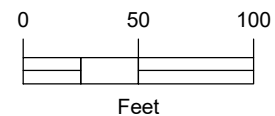
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**Figure 4**



**LEGEND**

- |            |  |  |   |
|------------|--|--|---|
| ● (Red)    | Soil boring results exceeding CUL                |  | <b>Proposed Construction</b><br>Future Structures                             |
| ● (Green)  | Soil boring results below CUL                    |  | Utility Excavation  |
| ● (Yellow) | Soil boring results below CUL; PFAS unknown      |  | Proposed Driveway/Apron   |
| ▲ (Green)  | Surface soil results below CUL                   |  | <b>Existing Features</b><br>Aircraft Rescue and Fire Fighting (ARFF) building |
| ▲ (Red)    | Surface soil results exceeding CUL               |  |   |
| ▲ (Blue)   | Surface soil results exceeding CUL; PFAS unknown |  |   |



Cordova Airport Combined Maintenance Facility  
2021 Site Characterization Report  
Cordova, Alaska

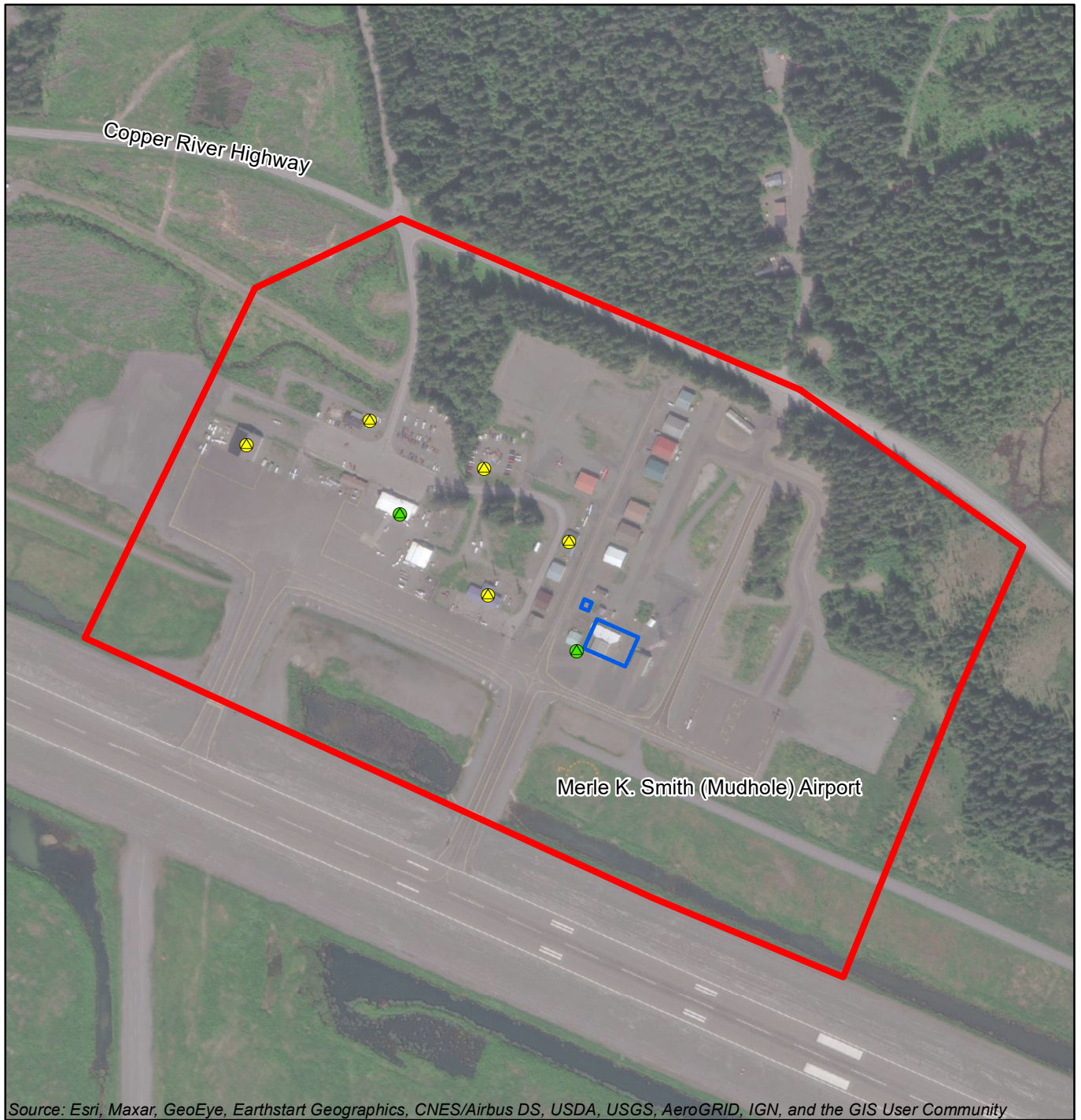
**2020 AND 2021 SOIL ANALYTICAL RESULTS**

May 2021

103311-009

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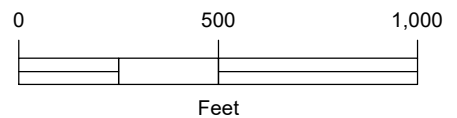
**Figure 5**



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**LEGEND**

- Well Search Area 1
- ▲ Known water supply well; well sampled March 2021
- ▲ Known water supply well; well not sampled
- Proposed Combined Maintenance Facility



Cordova Airport Combined Maintenance Facility  
2021 Site Characterization Report  
Cordova, Alaska

**WELL SEARCH AREA 1  
KNOWN WATER SUPPLY WELLS**

May 2021

103311-009

**SHANNON & WILSON, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

**Figure 6**



## Appendix A

# Field Forms

## CONTENTS

- Well Survey Inventory Form with Private Well Third-Party Boring Logs
- Sampling and Development Logs
  - Monitoring Well Sample Logs
  - Monitoring Well Construction Details
  - Well Development Log
  - Soil Sample Collection Logs
- Injection Well Notes
- Daily Field Activity Reports

## WELL SURVEY INVENTORY FORMS WITH THIRD-PARTY BORING LOGS

### APPENDIX A: FIELD FORMS

**Private Well Inventory Survey Form**

Date: 3/10/21 Parcel ID#: PW-001

Physical Address: 13 Mile Copper River Highway

Name (Owner): Alaska Airlines

Name (Occupant): Alaska Airlines / Manager: Kasey Kinsman

Mailing Address (Owner): n/a email preferred

Mailing Address (Occupant): n/a email preferred

Owner Email: kasey.kinsman@alaskaair.com Occupant Email: kasey.kinsman@alaskaair.com

Owner Phone: 907-424-3278 Occupant Phone: Kasey: 435-237-7279

Preferred method of contact (circle): Email  **Phone**

Number of people residing at this location: Adults (18 and over) mult. employees  
 Teenagers (13 to 17) -  
 Children (12 and under) -

Years at this residence: unknown Full-Time  Seasonal

- 1) From where do you obtain your drinking water?  
 a) Residential (private) well  b) Community well   
 c) Bottled water  d) Other  most drink bottled water

- 2) If you have a private well, please answer the following questions:  
 a) Where is the well located on the property? In GSC building  
 b) Is the well in use? Yes  No

- 3) If no, is the well usable, unusable, or properly abandoned?  
 Usable  Unusable  Abandoned  Method \_\_\_\_\_

If yes, please check all that apply regarding the usage of your well water:  
 Drinking  Vegetable/grain Gardening  
 Cooking food preparation -Size of Garden \_\_\_\_\_ sq. feet/acres  
 Other Alaska Air operations/maintenance Average watering frequency using well water? (daily, weekly, etc.) \_\_\_\_\_

- a) When was the well installed? 2004  
 b) What is the well depth? 426 ft, casing depth 128 ft, perforated 120 ft - 426 ft  
 c) What is the well diameter? unknown  
 d) What is the well type?  Dug Well  Driven  Drilled  Unknown Alpine Drilling  
 e) Do you have any treatment on your well (e.g. water softener)? Please describe. Multiple tanks, sediment and taste filter

- 4) Sample Permission  
 Does the Shannon & Wilson, Inc. have permission to sample your private well?  Yes  No

Verbally agreed w/ RLW 3/10/21  
 Signature Date

\* WELTS database lists 2 Alaska Airlines wells (2000 + 2004).  
 According to AKAir, the well in 2000 was abandoned + replaced w/ well in 2004.  
 2000 well = 88 ft deep 2004 well = 426 ft deep *YWR*

STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING & WATER MGMT  
WATER WELL RECORD

LOCATION OF WELL

BOROUGH	SUBDIVISION	LOT	BLOCK	SECTION QTRS	SECTION	TOWNSHIP <input type="checkbox"/> N <input type="checkbox"/> S	RANGE <input type="checkbox"/> E <input type="checkbox"/> W	MERIDIAN
LOCATION/SKETCH <i>PK Airlines Cordova Well Improvement</i>						WELL OWNER: <i>Alaska Airlines</i>		
<i>Cordova Airport Building lot</i>								
DEPTHS MEASURED FROM: <input checked="" type="checkbox"/> casing top <input type="checkbox"/> ground surface						WELL DEPTH: _____ ft		
BOREHOLE DATA: Material Type and Color						DATE OF COMPLETION <i>3/27/04</i>		
Depth From To						DEPTH TO STATIC WATER LEVEL: _____ ft below <input checked="" type="checkbox"/> top of casing <input type="checkbox"/> ground surface		
<i>Stick-up</i> 0 2						Date: <i>4/27/04</i>		
<i>Silty Sandy gravel fill</i> 2 7						METHOD OF DRILLING: <input checked="" type="checkbox"/> air rotary <input type="checkbox"/> cable tool <input type="checkbox"/> other _____		
<i>silty gravel &amp; organics</i> 7 14						USE OF WELL: <input type="checkbox"/> domestic <input type="checkbox"/> irrigation <input type="checkbox"/> monitor <input checked="" type="checkbox"/> public supply <input type="checkbox"/> other _____		
<i>gravelly silt grey wet</i> 14 64						CASING STICK-UP: <i>2</i> ft. Diam. <i>6</i> in. to <i>128</i> ft Casing type: <i>steel</i> _____ in. to _____ ft		
<i>organics &amp; silt Ren.</i> 64 75						WELL INTAKE OPENING TYPE: <input type="checkbox"/> open end <input type="checkbox"/> screened <input checked="" type="checkbox"/> perforated <input type="checkbox"/> open hole		
<i>Sandy silt wet</i> 75 126						Depths of openings: <i>120</i> to <i>126</i> ft		
<i>Reddish Sandstone</i> 126 128						SCREEN TYPE: _____ Diam: _____ in. Slot/Mesh Size: _____ Length: _____ ft		
						GRAVEL PACK TYPE Volume used: _____ Depth to top: _____		
						GROUT TYPE: <i>Bentonite</i> Volume: <i>9 Bp</i> Depth: from <i>7</i> ft to <i>22</i> ft		
						DEVELOPMENT METHOD: <i>air lift &amp; pumping</i> Duration: <i>1 1/2 hrs</i>		
						PUMPING LEVEL AND YIELD: <i>See pump test</i> ft after _____ hrs pumping _____ gpm		
						PUMP INTAKE DEPTH: _____ ft Horsepower: _____		
						WELL DISINFECTED UPON COMPLETION? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		

CONTRACTOR INFORMATION:

*Alpine Drilling & Enterprises*  
Registered Business Name  
*Robert L. Hargis*  
Signature of Authorized Representative Date

REMARKS: *Well was hydrofractured & mined from 29pm to 129pm*


PLEASE MAIL WHITE COPY OF LOG TO:  
DNR/DIVISION OF MINING & WATER MGMT  
3801 C St, Suite 800  
ANCHORAGE AK 99503-5935

Phone (907)269-8639, Fax (907)562-1384

**Private Well Inventory Survey Form**

Date: 3/10/21 Parcel ID#: PW-002  
 Physical Address: ARFF Cordova Airport  
 Name (Owner): DOT+PF  
 Name (Occupant): DOT+PF Robert Mattson  
 Mailing Address (Owner): PO Box 598 Cordova, AK 99574  
 Mailing Address (Occupant): see owner  
 Owner Email: robert.mattson@alaska.gov Occupant Email: see owner  
 Owner Phone: 907-424-3202 Occupant Phone: see owner  
 Preferred method of contact (circle): Email  **Phone**   
 Number of people residing at this location: Adults (18 and over) 2-3  
No permanent residents; 2-3 employees Teenagers (13 to 17) -  
 Children (12 and under) -  
 Years at this residence: unk. Full-Time  Seasonal

- 1) From where do you obtain your drinking water?  
 a) Residential (private) well  b) Community well   
 c) Bottled water  d) Other  poor taste
- 2) If you have a private well, please answer the following questions:  
 a) Where is the well located on the property? South west of ARFF  
 b) Is the well in use? Yes  No
- 3) If no, is the well usable, unusable, or properly abandoned?  
 Usable  Unusable  Abandoned  Method \_\_\_\_\_  
 If yes, please check all that apply regarding the usage of your well water:  
 Drinking  Vegetable/grain Gardening  
 Cooking food preparation -Size of Garden \_\_\_\_\_ sq.feet/acres  
 Other Airport Response/Fire Fighting -Average watering frequency using well water? (daily, weekly, etc.) \_\_\_\_\_
- a) When was the well installed? 2001  
 b) What is the well depth? 63 feet  
 c) What is the well diameter? 6"  
 d) What is the well type?  Dug Well  Driven  Drilled  Unknown  
 e) Do you have any treatment on your well (e.g. water softener)? Please describe. Softener, out of use,

4) Sample Permission  
 Does the Shannon & Wilson, Inc. have permission to sample your private well?  Yes  No  
Verbally agreed  3/10/21  
 Signature Date

*SW*



Rick Mystrom  
Mayor

# Municipality of Anchorage

Department of Health and Human Services

825 L Street

P.O. Box 196650 Anchorage, Alaska 99519-6650

<http://www.ci.anchorage.ak.us>



25837

Permit Number: #SW \_\_\_\_\_ Date of Issue: \_\_\_\_\_ Parcel Identification Number: \_\_\_\_\_  
 Date Started: 5-3-01 Date Completed: 5-4-01 Is well located at approved permit location?  Yes  No  
 Legal Description: Cordova SREB ADOT  
 Property Owner Name & Address: D.O.T. project AIP 3-02-0067-07-60237

Borehole Data: Soil Type, Thickness & Water Strata	Depth (ft)		Method of Drilling <input checked="" type="checkbox"/> air rotary <input type="checkbox"/> cable tool	
	From	To		
<i>stick-up</i>	0	3	Casing type: <u>steel</u>	
<i>sandy silty gravel</i>	3	21	Wall Thickness: <u>.025</u> inches	
<i>silt wet</i>	21	31	Diameter: <u>6</u> inches Depth: <u>57</u> feet	
<i>silty gravelly sand wet</i>	31	56	Liner Type: _____	
<i>silty sandy gravel wet</i>	56	61	Diameter: _____ inches Depth: _____ feet	
<i>gravelly sandy silt</i>	61	63	Casing stickup above ground: <u>3</u> feet	
			Static water level (from ground level): <u>10-6</u> feet	
			Pumping level: <u>55</u> feet after	
			<u>4</u> hours pumping <u>100+</u> gpm	
			Recovery Rate: <u>100+</u> gpm	
			Method of Testing: <u>air lift</u>	
Well Intake Opening Type:				
<input checked="" type="checkbox"/> Open End <input type="checkbox"/> Open Hole				
<input checked="" type="checkbox"/> Screened Start <u>56</u> feet Stopped <u>61</u> feet				
<input type="checkbox"/> Perforations Start _____ feet Stopped _____ feet				
Grout Type: <u>Bentonite # 8</u> Volume: <u>2</u> bg				
Depth: _____ Start <u>0</u> feet Stopped <u>±</u> feet				
Pump: Intake Depth <u>24</u> feet				
Pump size <u>2</u> hp Brand Name <u>Fairbanks Morse</u>				
Well Disinfected Upon Completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Method of Disinfection: <u>Chlorine Tablets</u>				
Comments: <i>Pump tested for 15 hrs with total drawdown to 13 feet for a total of 2.5 feet of drawdown at 50 gpm. Pump set at 29 feet.</i>				
Well Driller: <u>Alpine Drilling &amp; Enterprises</u> P O Box 110496 Anchorage AK 99511				

**Attention:** The well driller shall provide a well log to the property owner within 30 days of completion and the property owner or the well driller shall provide a well log to the Dept. of Health & Human Services within 60 days of completion

**Private Well Inventory Survey Form**

Date: 3/10/21 Parcel ID#: PW-003  
 Physical Address: Lot 1 Block 88, 13 Mile Copper River Highway  
 Name (Owner): Chinook Auto Rentals / Becky Chapeck  
 Name (Occupant): Chinook Auto Rentals / Becky Chapeck  
 Mailing Address (Owner): PO Box 1564 Cordova, AK 99574  
 Mailing Address (Occupant): " " " "  
 Owner Email: chinookautorentals@gmail.com Occupant Email: (same as owner)  
 Owner Phone: 907-424-5356 Occupant Phone: (same as owner)  
 Preferred method of contact (circle): Email  **Phone**   
 Number of people residing at this location: No permanent occupants  
1-2 employees Adults (18 and over) /  
 Teenagers (13 to 17) /  
 Children (12 and under) /  
 Years at this residence: 40 Full-Time  Seasonal

- 1) From where do you obtain your drinking water?  
 a) Residential (private) well  b) Community well   
 c) Bottled water  d) Other  well is DEC certified commercial well according to owner
- 2) If you have a private well, please answer the following questions:  
 a) Where is the well located on the property? ~20 ft E of main building  
 b) Is the well in use? Yes  No
- 3) If no, is the well usable, unusable, or properly abandoned?  
 Usable  Unusable  Abandoned  Method \_\_\_\_\_  
 If yes, please check all that apply regarding the usage of your well water:  
 Drinking  Vegetable/grain Gardening  
 Cooking food preparation -Size of Garden \_\_\_\_\_ sq.feet/acres  
 Other \_\_\_\_\_ -Average watering frequency using well water? (daily, weekly, etc.) \_\_\_\_\_
- a) When was the well installed? ~1988-1990  
 b) What is the well depth? 360-380 ft  
 c) What is the well diameter? 8" casing  
 d) What is the well type?  Dug Well  Driven  
 Drilled  Unknown  
 e) Do you have any treatment on your well (e.g. water softener)? Please describe. None

4) Sample Permission RLW did not ask for sample permission  
 Does the Shannon & Wilson, Inc. have permission to sample your private well?  Yes  No  
N/A

Signature \_\_\_\_\_ Date \_\_\_\_\_

Info provided via phone

*Am*

**Private Well Inventory Survey Form**

Date: 3/10/21 Parcel ID#: PW-004

Physical Address: Chinook Auto Rentals; Blue building on secondary lot

Name (Owner): Chinook Auto Rentals / Becky Chapeck

Name (Occupant): Same as owner

Mailing Address (Owner): PO Box 1564 Cordova, AK 99574

Mailing Address (Occupant): Same as owner

Owner Email: chinookautorentals@gmail.com Occupant Email: Same as owner

Owner Phone: 907-424-5356 Occupant Phone: same as owner

Preferred method of contact (circle): Email  Phone

Number of people residing at this location: Adults (18 and over) \_\_\_\_\_

Employees work out of building PW-003 Teenagers (13 to 17) \_\_\_\_\_

Children (12 and under) \_\_\_\_\_

Years at this residence: 40 Full-Time  Seasonal

- 1) From where do you obtain your drinking water?
- a) Residential (private) well
  - b) Community well
  - c) Bottled water
  - d) Other  \_\_\_\_\_

- 2) If you have a private well, please answer the following questions:
- a) Where is the well located on the property? Near structure (blue)
  - b) Is the well in use? Yes  No

- 3) If no, is the well usable, unusable, or properly abandoned?
- Usable  Unusable  Abandoned  Method Pump installed. well not used > 5 yrs.

- If yes, please check all that apply regarding the usage of your well water:
- Drinking
  - Vegetable/grain Gardening
  - Cooking food preparation
  - Size of Garden \_\_\_\_\_ sq. feet/acres
  - Other car washing
  - Average watering frequency using well water? (daily, weekly, etc.) \_\_\_\_\_

- a) When was the well installed? unknown
- b) What is the well depth? unknown - shallow
- c) What is the well diameter? unknown
- d) What is the well type?  Dug Well  Driven Hand driven  
 Drilled  Unknown
- e) Do you have any treatment on your well (e.g. water softener)? Please describe. None

- 4) Sample Permission RLW didn't request sample permission
- Does the Shannon & Wilson, Inc. have permission to sample your private well?  Yes  No n/a

Signature \_\_\_\_\_

Date \_\_\_\_\_

Info provided via phone

dm



**Private Well Inventory Survey Form**

Date: 3/11/21 Parcel ID#: PW-006

Physical Address: Copper River Highway, Mile 13

Name (Owner): Orca Adventure Lodge; Steve Ranney

Name (Occupant): same as owner

Mailing Address (Owner): PO Box 2105 Cordova, AK 99574

Mailing Address (Occupant): same as owner

Owner Email: Windrain@yahoo.com Occupant Email: same as owner

Owner Phone: Lodge: 907-424-7249 Occupant Phone: Steve: 907-424-7106

Preferred method of contact (circle): Email  Phone

Number of people residing at this location:  
no permanent

Adults (18 and over) \_\_\_\_\_

Teenagers (13 to 17) \_\_\_\_\_

Children (12 and under) \_\_\_\_\_

Years at this residence: ~20 yrs Full-Time

Seasonal

- 1) From where do you obtain your drinking water?
- a) Residential (private) well  b) Community well
- c) Bottled water  d) Other

- 2) If you have a private well, please answer the following questions:
- a) Where is the well located on the property? Inside building
- b) Is the well in use? Yes  No

- 3) If no, is the well usable, unusable, or properly abandoned?
- Usable  Unusable  Abandoned  Method \_\_\_\_\_

If yes, please check all that apply regarding the usage of your well water:

- Drinking  Vegetable/grain Gardening
- Cooking food preparation -Size of Garden \_\_\_\_\_ sq.feet/acres
- Other Rinsing Airplane -Average watering frequency using well water? (daily, weekly, etc.) \_\_\_\_\_

- a) When was the well installed? over 20 yrs
- b) What is the well depth? ~ 20 Ft
- c) What is the well diameter? 2"
- d) What is the well type?  Dug Well  Driven Hand
- Drilled  Unknown
- e) Do you have any treatment on your well (e.g. water softener)? Please describe. none

- 4) Sample Permission RLW did not ask for sample permission. only well info
- Does the Shannon & Wilson, Inc. have permission to sample your private well?  Yes  No n/a

Signature \_\_\_\_\_

Date \_\_\_\_\_

Info provided via phone

*Jan*

**Private Well Inventory Survey Form**

Date: 3/17/21 Parcel ID#: PW-007  
 Physical Address: Cordova Airport - Alaskan Wilderness Hanger  
 Name (Owner): Alaskan Wilderness Outfitting Company  
 Name (Occupant): " " " " Thomas Prijatel  
 Mailing Address (Owner): PO Box 1516 Cordova, AK 99574  
 Mailing Address (Occupant): " " " "  
 Owner Email: unknown Occupant Email: unknown  
 Owner Phone: unknown Occupant Phone: unknown/907-424-5552  
 Preferred method of contact (circle): Email  Phone  unknown  
 Number of people residing at this location: Adults (18 and over) unknown  
 Teenagers (13 to 17) ↓  
 Children (12 and under) ↓  
 Years at this residence: unknown Full-Time  Seasonal  unknown

- 1) From where do you obtain your drinking water?  
 a) Residential (private) well  b) Community well   
 c) Bottled water  d) Other  \_\_\_\_\_
- 2) If you have a private well, please answer the following questions:  
 a) Where is the well located on the property? \_\_\_\_\_  
 b) Is the well in use? Yes  No
- 3) If no, is the well usable, unusable, or properly abandoned?  
 Usable  Unusable  Abandoned  Method \_\_\_\_\_  
 If yes, please check all that apply regarding the usage of your well water:  
 Drinking  Vegetable/grain Gardening  
 Cooking food preparation -Size of Garden \_\_\_\_\_ sq.feet/acres  
 Other \_\_\_\_\_ -Average watering frequency using well water? (daily, weekly, etc.) \_\_\_\_\_
- a) When was the well installed? 2007  
 b) What is the well depth? 60 feet  
 c) What is the well diameter? 6"  
 d) What is the well type?  Dug Well  Driven  
 Drilled  Unknown  
 e) Do you have any treatment on your well (e.g. water softener)? Please describe. unknown

unknown

> Info from Alpine Drilling Well log

4) Sample Permission  
 Does the Shannon & Wilson, Inc. have permission to sample your private well?  Yes  No n/a

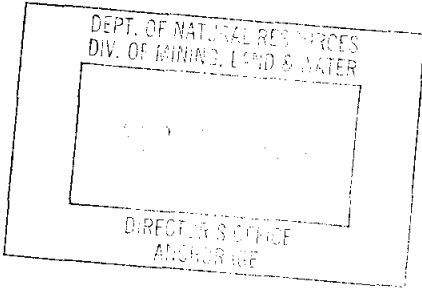
Signature \_\_\_\_\_ Date \_\_\_\_\_

well not sampled. S+W did not make contact w/ owner.  
 Info provided via Alpine Drilling Well log

AM

# ALPINE DRILLING & ENTERPRISES

**Permit Number:** #SW \_\_\_\_\_ **Date of Issue:** \_\_\_\_\_ **Parcel Identification Number:** \_\_\_\_\_  
**Date Started:** 2-9-07 **Date Completed:** 2-9-07 Is well located at approved permit location?  Yes  No  
**Legal Description:** Cordova Airport - Alaskan Wilderness Hanger  
**Property Owner Name & Address:** Alaskan Wilderness Outfitting Company  
PO Box 1516  
Cordova, Alaska 99574

<b>Borehole Data:</b>	<b>Depth (ft)</b>			
Soil Type, Thickness & Water Strata	From	To		
<i>stick-up</i>	0	2		
<i>gravelly silt</i>	2	21		
<i>silty sandy gravel wet</i>	21	30		
<i>gravelly sandy silt</i>	30	60		
			<b>Method of Drilling</b> <input checked="" type="checkbox"/> air rotary <input type="checkbox"/> cable tool	
			<b>Casing type:</b> <u>steel</u> Wall Thickness: <u>.250</u> inches Diameter: <u>6</u> inches Depth: <u>60</u> feet <b>Liner Type:</b> _____ Diameter: _____ inches Depth: _____ feet <b>Casing stickup above ground:</b> <u>2</u> feet	
			<b>Static water level</b> (from ground level): <u>12</u> feet <b>Pumping level:</b> <u>27</u> feet after <u>2</u> hours pumping <u>10+</u> gpm <b>Recovery Rate:</b> <u>10+</u> gpm <b>Method of Testing:</b> <u>air lift</u>	
			<b>Well Intake Opening Type:</b> <input type="checkbox"/> Open End <input type="checkbox"/> Open Hole <input type="checkbox"/> Screened Start _____ feet Stopped _____ feet <input checked="" type="checkbox"/> Perforations Start <u>27</u> feet Stopped <u>30</u> feet	
			<b>Grout Type:</b> <u>bentonite granules</u> <b>Volume:</b> <u>1</u> Depth: _____ Start <u>0</u> feet Stopped <u>?</u> feet	
			<b>Pump: Intake Depth</b> _____ feet Pump size _____ hp Brand Name _____	
			<b>Well Disinfected Upon Completion?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <b>Method of Disinfection:</b> <u>chlorine tablets</u>	
			<b>Comments:</b> <b>Well Driller:</b> <u>Alpine Drilling &amp; Enterprises</u> <u>PO Box 110496</u> <u>Anchorage Alaska 99511</u>	

**Attention:** The well driller shall provide a well log to the property owner within 30 days of completion and the property owner or the well driller shall provide a well log to the Development Services Department within 60 days of completion.

**Private Well Inventory Survey Form**

Date: 3/17/21 Parcel ID#: PW-020  
Physical Address: 13 Mile Copper River Highway  
Name (Owner): FAA Building  
Name (Occupant): Contact Robert Mattson  
Mailing Address (Owner): POBOX 598 Cordova, AK 99574  
Mailing Address (Occupant): see owner  
Owner Email: robert.mattson@alaska.gov Occupant Email: see owner  
Owner Phone: 907-424-3202 Occupant Phone: see owner  
Preferred method of contact (circle): Email  **Phone**   
Number of people residing at this location: Adults (18 and over) unknown  
Teenagers (13 to 17) 0  
Children (12 and under) 0  
Years at this residence: unknown Full-Time  Seasonal

Confirmed well presence. unknown use/occupancy. Likely for building water supply use

- From where do you obtain your drinking water?  
a) Residential (private) well  b) Community well   
c) Bottled water  d) Other  unknown
- If you have a private well, please answer the following questions:  
a) Where is the well located on the property? unknown  
b) Is the well in use? Yes  No   
3) If no, is the well usable, unusable, or properly abandoned?  
Usable  Unusable  Abandoned  Method \_\_\_\_\_  
If yes, please check all that apply regarding the usage of your well water:  
 Drinking (suspected)  Vegetable/grain Gardening  
 Cooking food preparation (suspected) -Size of Garden \_\_\_\_\_ sq.feet/acres  
 Other \_\_\_\_\_ -Average watering frequency using well water? (daily, weekly, etc.) \_\_\_\_\_
- a) When was the well installed? 2000  
b) What is the well depth? 136 feet  
c) What is the well diameter? 6"  
d) What is the well type?  Dug Well  Driven  Drilled  Unknown  
e) Do you have any treatment on your well (e.g. water softener)? Please describe. unknown

Info from well log

4) Sample Permission  
Does the Shannon & Wilson, Inc. have permission to sample your private well?  Yes  No n/a

Signature \_\_\_\_\_ Date \_\_\_\_\_

Info from Robbie. Provided verbally

JW



Rick Mystrom  
Mayor

# Municipality of Anchorage

Department of Health and Human Services

825 "L" Street

P. O. Box 196650 Anchorage Alaska 99519-6650

http://www.ci.anchorage.ak.us



Permit Number: #SW \_\_\_\_\_ Date of Issue: \_\_\_\_\_

Date Started: 8-2-00 Date Completed: 8-4-00

Legal Description: Cordova Airport

Property Owner Name & Address: FAA Cordova, Ak

Parcel Identification Number: \_\_\_\_\_

Is well located at approved permit location?  Yes  No

Borehole Data: Soil Type, Thickness & Water Strata	Depth (ft)		Method of Drilling <input checked="" type="checkbox"/> air rotary <input type="checkbox"/> cable tool	
	From	To		
<i>stick-up</i>	0	2	Casing type: <u>steel</u>	
<i>silty gravel</i>	2	9	Wall Thickness: <u>.025</u> inches	
<i>silty water sand &amp; gravel</i>	9	47	Diameter: <u>6</u> inches Depth: <u>136</u> feet	
<i>silt, organics &amp; wood pieces</i>	47	52	Liner Type: _____	
<i>silty water sand &amp; gravel</i>	52	65	Diameter: _____ inches Depth: _____ feet	
<i>silty sand &amp; water</i>	65	80	Casing stickup above ground: <u>2</u> feet	
<i>sandy silt and water</i>	80	95	Static water level (from ground level): <u>8</u> feet	
<i>wet silt</i>	95	135	Pumping level: <u>350</u> feet after	
<i>bedrock- appears to be compressed</i>			<u>14</u> hours pumping <u>7 est</u> gpm	
<i>sandstone</i>	135	324	Recovery Rate: <u>7 est</u> gpm	
<i>shale &amp; water</i>	324	350	Method of Testing: <u>air lift--see attached pump test</u>	
			Well Intake Opening Type:	
			<input type="checkbox"/> Open End <input checked="" type="checkbox"/> Open Hole	
			<input type="checkbox"/> Screened Start _____ feet Stopped _____ feet	
			<input type="checkbox"/> Perforations Start _____ feet Stopped _____ feet	
			Grout Type: <u>Bentonite # 8</u> Volume: <u>1 bg</u>	
			Depth: _____ Start <u>0</u> feet Stopped <u>±</u> feet	
			Pump: Intake Depth _____ feet	
			Pump size _____ hp Brand Name _____	
			Well Disinfected Upon Completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
			Method of Disinfection: <u>Clorine Tablets</u>	
			Comments:	
			Well Driller: <u>Alpine Drilling &amp; Enterprises</u>	
			<u>P O Box 110496</u>	
			<u>Anchorage AK 99511</u>	

**Attention:** The well driller shall provide a well log to the property owner within 30 days of completion and the property owner or the well driller shall provide a well log to the Dept. of Health & Human Services within 60 days of completion.

## SAMPLING AND DEVELOPMENT LOGS

### APPENDIX A: FIELD FORMS

**RESIDENTIAL WELL SAMPLING LOG**

Address CORONA AIRPORT Project Number 103311-009  
 Owner/Occupant Alaska Airlines Project Name CORONA SREB  
 Mailing Address email Date 3/10/21  
 Telephone 435-237-7279 Time 0900  
 Sampling Personnel RLW

Purge Location Kitchen sink (GSC Building)

Sample Location Spigot on well, pre-treatment in shop/garage

Sample No. PW-001 Time 0934

Duplicate — Time —

Pumping Start Time 0913  
 Pumping End Time 0934 Total Depth of Well (ft.) 426  
 Gallons per minute 2 Laboratory Test America  
 Purge Volume (gal.) ~42 Analysis PFAS x 18

**FIELD PARAMETERS** [stabilization criteria]

Time	Temp. (°C) [± 0.5]	Conductivity (µS/cm) [± 3%]	pH (std. units) [± 0.1]	Water Clarity (visual)
0916	4.2	1180 x	9.18	clear
0919	3.8	1810 x	9.41	clear
0922	4.3	2001 x	9.42	clear
0925	4.2	<del>1996</del> 1203	9.42	clear
0928	4.2	1202	9.43	clear
0931	4.2	1203	9.43	clear
0934	SAMPLE			

Notes: well located in adjacent AKAIR building that stores equipment. Well feeds main AKAIR passenger building  
well located in garage, also TSA building

Mgr. Ran well from 830-900

Checked pH w/ strips, high pH

*Reading specific conductance, not conductivity*

well is 426 ft deep per boring log

SMH

**RESIDENTIAL WELL SAMPLING LOG**

Address CORDOVA AIRPORT Project Number 103311-009  
 Owner/Occupant DOT ARFF Well Project Name Cordova SREB  
 Mailing Address — Date 3/10/21  
 Telephone — Time 950  
 Sampling Personnel RLW

Purge Location Kitchen sink in ARFF Apt.

Sample Location From spigot in garage, pre-treatment

Sample No. PW-002 Time 1030

Duplicate PW-102 Time 1020

Pumping Start Time 0958  
 Pumping End Time 1030  
 Gallons per minute ~2  
 Purge Volume (gal.) ~62

Total Depth of Well (ft.) ~60'  
 Laboratory Test America  
 Analysis PFAS x 18

**FIELD PARAMETERS [stabilization criteria]**

Time	Temp. (°C) [± 0.5]	Conductivity (µS/cm) [± 3%]	pH (std. units) [± 0.1]	Water Clarity (visual)
1000	12.6	139.3	6.15	Clear
1003	12.2	136.5	6.47	"
1006	10.2	131.8	6.58	"
1009	8.2	124.4	6.63	"
1012	5.8	118.7	6.70	"
1015	5.5	118.1	6.71	"
1018	4.9	117.0	6.73	"
1021	4.7	115.9	6.73	"
1024	4.5	115.3	6.73	"
1027	4.4	114.7	6.72	"
1030	SAMPLE			

Notes: well is approx 60 ft deep

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smH



TEST  
**PRIVATE WELL SAMPLING LOG**

Address \_\_\_\_\_  
 Owner/Occupant CORONA DOT  
 Mailing address CORONA AIRPORT SREB/ARFF  
 Telephone \_\_\_\_\_

Project Number 103311-006  
 Project Name CORONA SREB/ARFF  
 Date 4/2/21  
 Time 5:00 pm  
 Sampling Personnel RYAN COLLINS (S/W)

Sample Location Well 1R  
APPROXIMATELY 22 FEET SW OF SW CORNER OF EXISTING ARFF; APPROXIMATELY 10.7'  
EAST OF EXISTING CORONA SREB WATER WELL.

Sample Number W1R-6W1  
 Duplicate W1R-6W101  
 Analysis PRIMARY/SECONDARY INORGANICS, CRU, DOO, RAO, VOC, PAH, TOTAL COLJ, PFAS X15

Time 5:00 pm  
 Time 5:10 pm

Lab SGS ALASKA, TEST AMERICA (PFAS)

Purge Volume 47,000 GALLONS GRUNDFOS 385S1FD-2 PUMP  
w/10HP MOTOR

**PARAMETERS [stabilization criteria]**

Time	Temp. (°C) [± 0.5]	Conductivity (µS/cm) [± 3%]	pH (std. units) [± 0.1]	Water Clarity (visual)
5:00	40.4	—	—	CLEAR w/ TAN HUE

Notes: NEW TEST WELL INSTALLED TO EVALUATE AQUIFER YIELD FOR THE PROJECT.  
WELL WAS REVEALED WITH THE DRILL RIG USING AIR LIFT & SPROWING FOR  
APPROXIMATELY 2.5 HOURS AFTER WELL SCREEN INSTALLATION ON 3/25-26/2021.  
ESTIMATED 12,000 GALLONS OF WATER REMOVED DURING DEVELOPMENT.  
WELL IS SCREENED FROM APPROXIMATELY 55 TO 60 FEET BGS.

TEST  
~~PRIVATE~~ WELL SAMPLING LOG

Address \_\_\_\_\_  
 Owner/Occupant CORONA DOT  
 Mailing address CORONA ALASKA SREB/ARFF  
 Telephone \_\_\_\_\_

Project Number 103311-006  
 Project Name CORONA SREB/ARFF  
 Date 4/2/21  
 Time 8:45 pm  
 Sampling Personnel RYAN COLLINS

Sample Location Well 2R  
APPROXIMATELY 15' E, 5' N OF SE CORNER OF EXISTING SREB

Sample Number W2R-6W1  
 Duplicate NONE

Time 8:45 pm  
 Time \_\_\_\_\_

Analysis PRIMARY/SECONDARY METALS, GND, DIO, PBO, VEC, PAH, TOTAL COLI, PFAS X18

Lab SGS ALASKA, TEST AMERICA (PFAS)

Purge Volume 11,300 gallons (Collins 365 S150-2 pump w/ 10HP motor)

**PARAMETERS [stabilization criteria]**

Time	Temp. (°C) [± 0.5]	Conductivity (µS/cm) [± 3%]	pH (std. units) [± 0.1]	Water Clarity (visual)
8:45	39.8	—	—	CLEAR

Notes: NEW TEST WELL INSTALLED TO EVALUATE AQUIFER YIELDS FOR THE PROJECT.  
WELL WAS DEVELOPED WITH THE ORNL RIG USING AIR LIFT & SURGING FOR APPROXIMATELY  
14.5 HOURS AFTER WELL SCREEN INSTALLATION BETWEEN 3/31 - 4/2/2021. EST  
40,000 GALLONS OF WATER REMOVED DURING DEVELOPMENT.  
WELL IS SCREENED FROM APPROXIMATELY 72 TO 82 FEET RGS.

# MONITORING WELL SAMPLING LOG

Owner/Client: PDC/DOJ+PF  
 Location: Cordova SREB  
 Sampling Personnel: RW  
 Weather Conditions: Sunny, breezy Air Temp. (°F) 20

Project No. 103311-009  
 Date: 3/13/21  
 Well: TWP-5  
 Time started: 1440  
 Time completed: 1515

Sample No. TWP-5 Time 1512  
 Duplicate TWP-105 Time 1502  
 Equipment Blank - Time -

Pump: Peristaltic pump  
 Purging Method: portable / dedicated pump  
 Pumping Start: 1449  
 Purge Rate (gal./min.): 0.2  
 Pumping End: 1512

Diameter and Type of Casing: 1" PVC  
 Approximate Total Depth of Well Below MP (ft.): -  
 Measured Total Depth of Well Below MP (ft.): 16.24  
 Depth to Water Below MP (ft.): 11.14  
 Depth to Ice (if frozen) Below MP (ft.): -

Pump Set Depth Below MP (ft.): 12  
 KuriTec Tubing (ft.): 8  
 TruPoly Tubing (ft.): 25  
 Stone: 0.5

Feet of Water in Well: 5.1  
 Gallons per foot: 0.041  
 Gallons in Well: 0.2  
 Purge Water Volume (gal.): 4.6

Purge Water Disposal: hold in buckets, awaiting results

Monument Condition: n/a

Casing Condition: New, Temporary well point.

Wiring Condition (dedicated pumps): n/a

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount  
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.): -  
 Monument to ground surface (ft.): 2.22

Datalogger type: n/a  
 Datalogger serial #: n/a  
 Measured cable length (ft.): n/a

- n/a Lock present and operational
- Well name legible on outside of well
- n/a Evidence of frost-jacking

Notes: 8.92 to GW below ground surface  
Temporary well point removed after sampling

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

Well No. TWP-5

*mit*

# MONITORING WELL SAMPLING LOG

Field Parameter Instrument YSI C

Circle one: Parameters stabilized or >3 well volumes purged

Sample Observations -

Notes Purged from 1449-1454 w/o YSI to remove fines

## FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1454	3.1	4.98	48.9	5.60	157.0	opaque
1457	3.2	5.17	48.3	5.65	161.6	opaque
1500	3.2	5.16	47.8	5.67	164.8	clear
1503	3.2	5.08	47.7	5.66	167.1	clear
1506	3.2	5.14	47.4	5.68	168.4	clear
1509	3.2	5.15	47.5	5.67	169.6	clear
1512	sample					

Laboratory SGS / Test America

Analysis	Sample Containers	Preservatives	Dup
GRD	3 x VOA	HCl	
DRO/RRO	2 x 250 mL	HCl	
VOCs	3 x VOA	HCl	
PAH	2 x 250 mL	-	
PFAS	2 x 250 mL HDPE	-	

Well No. TWP-5

# MONITORING WELL SAMPLING LOG

Owner/Client: PDC / DOT+PF  
 Location: CORDOVA SEEB  
 Sampling Personnel: RLW / DHF  
 Weather Conditions: Sunny Air Temp. (°F) 20's

Project No. 103311-009  
 Date: 3/13/21  
 Well: TWP-6  
 Time started: 1330  
 Time completed: 1430

Sample No. TWP-6 Time 1420  
 Duplicate: - Time -  
 Equipment Blank: - Time -

Pump: Perpump  
 Purging Method: portable / dedicated pump  
 Pumping Start: 1340  
 Purge Rate (gal./min.): 0.2  
 Pumping End: 1420  
 Pump Set Depth Below MP (ft.): ~~14.3~~ 11.5  
 KuriTec Tubing (ft.): -  
 TruPoly Tubing (ft.): 25  
Silicone 0.5  
 Diameter and Type of Casing: 1" PVC  
 Approximate Total Depth of Well Below MP (ft.): -  
 Measured Total Depth of Well Below MP (ft.): 16.48  
 Depth to Water Below MP (ft.): 10.76  
 Depth to Ice (if frozen) Below MP (ft.): -  
 Feet of Water in Well: 5.72  
 Gallons per foot: 0.041  
 Gallons in Well: 0.25  
 Purge Water Volume (gal.): 8  
 Purge Water Disposal: Bucket

Monument Condition: n/a  
 Casing Condition: new, TWP  
 Wiring Condition (dedicated pumps): n/a

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount  
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.): -  
 TOC Monument to ground surface (ft.): 2.4

Datalogger type: n/a  
 Datalogger serial #: n/a  
 Measured cable length (ft.): n/a

n/a Lock present and operational  
n/a Well name legible on outside of well  
n/a Evidence of frost-jacking

Notes: water 8.36 & bgs  
5 foot screen, ~3 inches at bottom not slotted  
Temporary well point removed after sampling

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	<u>0.08</u>	0.17	0.38	0.66	1.5	2.6

*smith*

Well No. TWP-6

# MONITORING WELL SAMPLING LOG

Field Parameter Instrument YSI C Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations \_\_\_\_\_  
 Notes Purged 1340-1346 w/0 YSI to clear fines

**FIELD PARAMETERS** [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1346	3.1	1.97	65.9	4.73	274.4	clear
1349	3.2	0.62	63.2	5.29	241.8	clear
1352	3.1	0.50	62.5	5.43	237.8	clear
1355	2.9	0.42	61.5	5.48	233.9	clear
1358	2.9	0.40	61.1	5.52	230.3	clear
1401	2.8	0.38	60.0	5.49	226.9	clear
1404	3.0	0.32	60.6	5.53	220.7	clear
1407	3.0	0.28	60.5	5.55	214.6	clear
1411	2.8	0.27	60.0	5.55	203.2	clear
1414	2.9	0.25	60.1	5.57	204.4	clear
1417	3.0	0.23	60.0	5.57	199.6	clear
1420	Sample ✓					

Laboratory SGS / Test America

	Analysis	Sample Containers	Preservatives	Dup
<input type="checkbox"/>	GRO	5x VOA	HCl	<input type="checkbox"/>
<input type="checkbox"/>	DRO/RRO	2x 250ml	HCl	<input type="checkbox"/>
<input type="checkbox"/>	VOCS	3x VOA	HCl	<input type="checkbox"/>
<input type="checkbox"/>	PFAS	2x 250ml HDPE	—	<input type="checkbox"/>
<input type="checkbox"/>	PAH	2x 250ml	—	<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

# MONITORING WELL SAMPLING LOG

Owner/Client: DOT & FF - 7 PDC  
 Location: SREB Cordova  
 Sampling Personnel: DHF and RLW  
 Weather Conditions: Sunny Air Temp. (°F) 20's

Project No. 103311-009  
 Date: 3/13/21  
 Well: TWP-7  
 Time started: 1550  
 Time completed: 1650

Sample No. TWP-7 Time 1643  
 Duplicate: — Time —  
 Equipment Blank: — Time —

Pump: peristaltic pump  
 Purging Method: portable → dedicated pump  
 Pumping Start: 1605  
 Purge Rate (gal./min.): 0.2  
 Pumping End: 1643  
 Diameter and Type of Casing: 1" PVC  
 Approximate Total Depth of Well Below MP (ft.): —  
 Measured Total Depth of Well Below MP (ft.): 16.68  
 Depth to Water Below MP (ft.): 11.11  
 Depth to Ice (if frozen) Below MP (ft.): —  
 Feet of Water in Well: 5.57  
 Gallons per foot: 0.041  
 Gallons in Well: 0.23  
 Pump Set Depth Below MP (ft.): 12  
 KuriTec Tubing (ft.): —  
 TruPoly Tubing (ft.): 25  
Silicone 0.5  
 Purge Water Volume (gal.): 7.6  
 Purge Water Disposal: contained in bucket

Monument Condition: —  
 Casing Condition: new, TWP  
 Wiring Condition: —  
 (dedicated pumps)

Measuring Point (MP): Top of Casing (TOC) Monument type: Stickup / Flushmount  
 Measurement method: Rod & level / Tape measure  
 Top-of-casing to monument (ft.): — Datalogger type: n/a  
 Monument to ground surface (ft.): 2.24 Datalogger serial #: n/a  
TOC Measured cable length (ft.): n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes: water 8.87 ft bgs  
Developed well for a few minutes to remove fines before connecting  
YSI in-line.  
Temporary Well point removed after sampling

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

*smh*

Well No. TWP-7

## MONITORING WELL SAMPLING LOG

Field Parameter Instrument YSI C      Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations -  
 Notes -

### FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1605	pump start					very turbid
1612	2.0	4.38	57.0	5.91	145.2	opaque
1615	1.7	3.95	57.4	5.97	108.4	opaque
1618	1.2	3.99	54.6	5.94	88.8	opaque
1621	1.2	4.40	55.6	6.09	65.5	turbid, agitated well
<del>1624</del>						
1627	1.6	4.21	53.6	5.89	73.7	opaque
1630	1.7	4.43	51.8	5.93	76.5	opaque
1633	1.4	4.59	52.0	5.91	78.5	clearer
1636	1.5	4.71	50.4	5.89	80.9	clear
1639	1.6	4.63	51.5	5.89	83.4	clear
1642	1.5	4.66	51.2	5.87	85.0	clear
1643	sample					

Laboratory SGS / TestAmerica

	Analysis	Sample Containers	Preservatives	Dup
<input checked="" type="checkbox"/>	GRO	3x VOA		<input type="checkbox"/>
<input checked="" type="checkbox"/>	VOL	3x VOA		<input type="checkbox"/>
<input checked="" type="checkbox"/>	DRD/RRO	2x 250mL		<input type="checkbox"/>
<input checked="" type="checkbox"/>	PFAS	2x 250mL HDPE		<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>



# MONITORING WELL SAMPLING LOG

Owner/Client: DOT+PF / PDC  
 Location: Cordova SRES (N of ARFF)  
 Sampling Personnel: RLW  
 Weather Conditions: cloudy Air Temp. (°F) 20s

Project No. 103311-009  
 Date: 3/14/21  
 Well: MW-1  
 Time started: 1315  
 Time completed: 1415

Sample No. mw-1 Time 1406  
 Duplicate - Time -  
 Equipment Blank - Time -

Pump: Hurricane XL  
 Purging Method: portable / dedicated pump  
 Pumping Start: 1330  
 Purge Rate (gal./min.): -0.4  
 Pumping End: 1406  
 Diameter and Type of Casing: 2" PVC  
 Approximate Total Depth of Well Below MP (ft.): 15  
 Measured Total Depth of Well Below MP (ft.): 13.65 + 1.27 = 14.92  
 Depth to Water Below MP (ft.): 6.30  
 Depth to Ice (if frozen) Below MP (ft.): -  
 Pump Set Depth Below MP (ft.): 7  
 KuriTec Tubing (ft.): 15  
 TruPoly Tubing (ft.): -  
 Feet of Water in Well: 8.62  
 Gallons per foot: 0.17  
 Gallons in Well: 1.46  
 Purge Water Volume (gal.): 55 gal drum + 6 gal bucket  
 Purge Water Disposal: Hold in drums

Monument Condition: New  
 Casing Condition: New, good  
 Wiring Condition (dedicated pumps): n/a

Measuring Point (MP): Top of Casing (TOC)  
 Monument type: Stickup / Flushmount  
 Measurement method: Rod & level / Tape measure  
 Top-of-casing to monument (ft.): 0.40  
 Monument to ground surface (ft.): -  
 Datalogger type: n/a  
 Datalogger serial #: n/a  
 Measured cable length (ft.): n/a

- Lock present and operational NO LOCKS
- Well name legible on outside of well
- Evidence of frost-jacking

Notes: Well developed 3/14/21

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

*SMH*

Well No. MW-1

### MONITORING WELL SAMPLING LOG

Field Parameter Instrument YSI C      Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations purged 1330-1340 w/ 451 to clear remaining silt  
 Notes from well development

#### FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1343	2.9	4.60	46.3	5.80	201.4	Slightly cloudy
1346	2.9	4.36	46.2	5.82	188.8	Slightly cloudy
1349	2.9	4.27	46.2	5.78	177.0	Slightly cloudy
1353	2.9	4.17	46.3	5.83	170.3	clear
1357	2.9	4.04	46.2	5.83	166.2	clear
1400	2.9	4.09	46.3	5.83	164.6	clear
<del>1403</del>						
1406	SAMPLE					

Laboratory SGS / Test America

Analysis	Sample Containers	Preservatives	Dup
<input checked="" type="checkbox"/> GRO	3x VOA	HCl	<input type="checkbox"/>
<input checked="" type="checkbox"/> DRO, RRO	2x 250 ml	HCl	<input type="checkbox"/>
<input checked="" type="checkbox"/> VOCs	3x VOA	HCl	<input type="checkbox"/>
<input checked="" type="checkbox"/> PFA's	2x 250 ml HDPE	<del>HCl</del>	<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>

Well No. mw-1

## MONITORING WELL SAMPLING LOG

Owner/Client: DOT + PF / PDC  
 Location: Cordeiro SREB  
 Sampling Personnel: RLW  
 Weather Conditions: Sunny Air Temp. (°F) 20.5

Project No. 103311-009  
 Date: 3/14/21  
 Well: MW-2  
 Time started: 1120  
 Time completed: 1245

Sample No. MW-2 Time 1207  
 Duplicate MW-102 Time 1757  
 Equipment Blank - Time -

Pump: Hurricane XL  
 Purging Method: portable / dedicated pump  
 Pumping Start: 1139  
 Purge Rate (gal./min.): 20.5  
 Pumping End: 1207  
 Pump Set Depth Below MP (ft.): 8.5  
 KuriTec Tubing (ft.): 15  
 TruPoly Tubing (ft.): -

Diameter and Type of Casing: 2" PVC  
 Approximate Total Depth of Well Below MP (ft.): 15  
 Measured Total Depth of Well Below MP (ft.): 13.27 + 1.27 = 14.54  
 Depth to Water Below MP (ft.): 7.45  
 Depth to Ice (if frozen) Below MP (ft.): -  
 Feet of Water in Well: 7.09  
 Gallons per foot: 0.17  
 Gallons in Well: 1.2  
 Purge Water Volume (gal.): one 55 gal drum  
 Purge Water Disposal: Hold in drums/buckets + 6 gal bucket

Monument Condition: Good, new

Casing Condition: Good, new

Wiring Condition (dedicated pumps): n/a

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount  
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.): 0.34  
 Monument to ground surface (ft.): 0

Datalogger type: n/a  
 Datalogger serial #: n/a  
 Measured cable length (ft.): n/a

- Lock present and operational No locks
- Well name legible on outside of well
- Evidence of frost-jacking \_\_\_\_\_

Notes: Well developed 3/14/21  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

SMH

Well No. MW-2

### MONITORING WELL SAMPLING LOG

Field Parameter Instrument YSI C Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations Purge w/ YSI from 1139 - 1149'  
 Notes water silty + grey at start, then clear

#### FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1149	3.0	6.36	48.5	5.91	209.8	clear
1152	3.0	6.54	48.4	5.97	205.1	clear
1155	3.0	6.61	48.4	5.92	204.3	clear
1158	3.0	6.61	48.4	5.92	204.2	clear
1201	3.0	6.53	48.3	5.92	204.4	clear
1204	3.0	6.50	48.3	5.92	204.5	clear
1207	Sample					

Laboratory SGS | TEST AMERICA

Analysis	Sample Containers	Preservatives	Dup
GRD	3 x VOA	HCl	<input checked="" type="checkbox"/>
DRO/RRO	2 x 250ml	HCl	<input checked="" type="checkbox"/>
VOCs	3 x VOA	HCl	<input checked="" type="checkbox"/>
PFAS	2 x 250ml HDPE	-	<input checked="" type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

# MONITORING WELL SAMPLING LOG

Owner/Client: DOT+PF  
 Location: Cordova SREB  
 Sampling Personnel: RLW  
 Weather Conditions: ☀ Sunny Air Temp. (°F) 20s

Project No. 163311-009  
 Date: 3/14/21  
 Well: MW-3  
 Time started: 930  
 Time completed: 1045

Sample No. MW-3 Time 1009  
 Duplicate: - Time -  
 Equipment Blank: - Time -

Pump: Hurricane XL  
 Purging Method: portable / dedicated pump  
 Pumping Start: 943  
 Purge Rate (gal./min.): 0.3 1 bot cup in 25s  
 Pumping End: 1009  
 Diameter and Type of Casing: 2" PVC  
 Approximate Total Depth of Well Below MP (ft.): 15  
 Measured Total Depth of Well Below MP (ft.): 13.36 + 1.27 = 14.63  
 Depth to Water Below MP (ft.): 7.66  
 Depth to Ice (if frozen) Below MP (ft.): -  
 Pump Set Depth Below MP (ft.): 8  
 KuriTec Tubing (ft.): 15  
 TruPoly Tubing (ft.): -  
 Feet of Water in Well: 6.97  
 Gallons per foot: 0.17  
 Gallons in Well: 1.2  
 Purge Water Volume (gal.): 55 gal drum + 6 gal bucket

Purge Water Disposal: Hold in drum

Monument Condition: OK. Gravel + bentonite flush w/ well casing top

Casing Condition: good

Wiring Condition (dedicated pumps): n/a

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount  
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.): 0.38  
 Monument to ground surface (ft.): 0

Datalogger type: n/a  
 Datalogger serial #: n/a  
 Measured cable length (ft.): n/a

- Lock present and operational No locks
- Well name legible on outside of well
- Evidence of frost-jacking -

Notes: Well developed on 3/13/21

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### WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

*smt*

Well No. MW-3

# MONITORING WELL SAMPLING LOG

Field Parameter Instrument YSI C      Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations Water clear  
 Notes \_\_\_\_\_

## FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
948	2.5	2.61	54.3	5.83	157.3	slightly cloudy
951	2.5	2.66	53.4	5.79	160.4	clear
954	2.5	2.66	53.4	5.76	168.3	clear
957	2.5	2.65	52.8	5.72	175.2	clear
1000	2.5	2.67	53.4	5.70	180.6	clear
1003	2.5	2.62	54.2	5.70	183.5	clear
1006	2.5	2.60	53.5	5.70	185.3	clear
1009	Sample					

Laboratory SGS / Test America

Analysis	Sample Containers	Preservatives	Dup
<input checked="" type="checkbox"/> GRO	3xVOA	HCl	<input type="checkbox"/>
<input checked="" type="checkbox"/> DRO / RRO	2x250ml	HCl	<input type="checkbox"/>
<input checked="" type="checkbox"/> VOCs	3xVOA	HCl	<input type="checkbox"/>
<input checked="" type="checkbox"/> PFAS	2x250ml HOPE	-	<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>

# MONITORING WELL SAMPLING LOG

Owner/Client ADOT + PF / PDC  
 Location Cordova SREB  
 Sampling Personnel RW, DHF  
 Weather Conditions overcast Air Temp. (°F) 20s

Project No. 103311-009  
 Date 3/14/21  
 Well MW-4  
 Time started 1600  
 Time completed 1700

Sample No. MW-4 Time 1643  
 Duplicate - Time -  
 Equipment Blank EB-4 Time 1653

Pump Hurricane XL  
 Purging Method portable / dedicated pump  
 Pumping Start 1615  
 Purge Rate (gal./min.) 0.5  
 Pumping End 1643  
 Pump Set Depth Below MP (ft.) 9  
 KuriTec Tubing (ft.) 20  
 TruPoly Tubing (ft.) -

Diameter and Type of Casing 2" PVC  
 Approximate Total Depth of Well Below MP (ft.) 15  
 Measured Total Depth of Well Below MP (ft.) 13.53 + 1.27 = 14.85  
 Depth to Water Below MP (ft.) 8.22  
 Depth to Ice (if frozen) Below MP (ft.) -  
 Feet of Water in Well 6.63  
 Gallons per foot 0.17  
 Gallons in Well 1.13  
 Purge Water Volume (gal.) 55 gal + 6 gal bucket  
 Purge Water Disposal Hold in drum + bucket

Monument Condition New, good  
 Casing Condition New, good  
 Wiring Condition n/a  
 (dedicated pumps)

Measuring Point (MP) Top of Casing (TOC)

Monument type: Stickup / Flushmount  
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.30  
 Monument to ground surface (ft.) 0

Datalogger type n/a  
 Datalogger serial # n/a  
 Measured cable length (ft.) n/a

- Lock present and operational
- Well name legible on outside of well
- Evidence of frost-jacking

Notes Developed 3/14/21

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

*smh*

Well No. MW-4

# MONITORING WELL SAMPLING LOG

Field Parameter Instrument YSI C Circle one: Parameters stabilized or >3 well volumes purged

Sample Observations Purged w/ 45l from 1615 - 1620

Notes to remove silty water

## FIELD PARAMETERS [stabilization criteria]

Time	Temp. (°C) [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
1628	3.3	6.46	51.6	5.97	137.7	slightly cloudy
1631	3.3	6.42	51.5	5.98	128.5	almost clear
1634	3.3	6.44	51.5	5.98	127.4	clear
1637	3.3	6.40	51.2	5.98	126.7	clear
1640	3.3	6.40	51.2	5.99	127.2	clear
1643	Sample					

Laboratory SGS / Test America

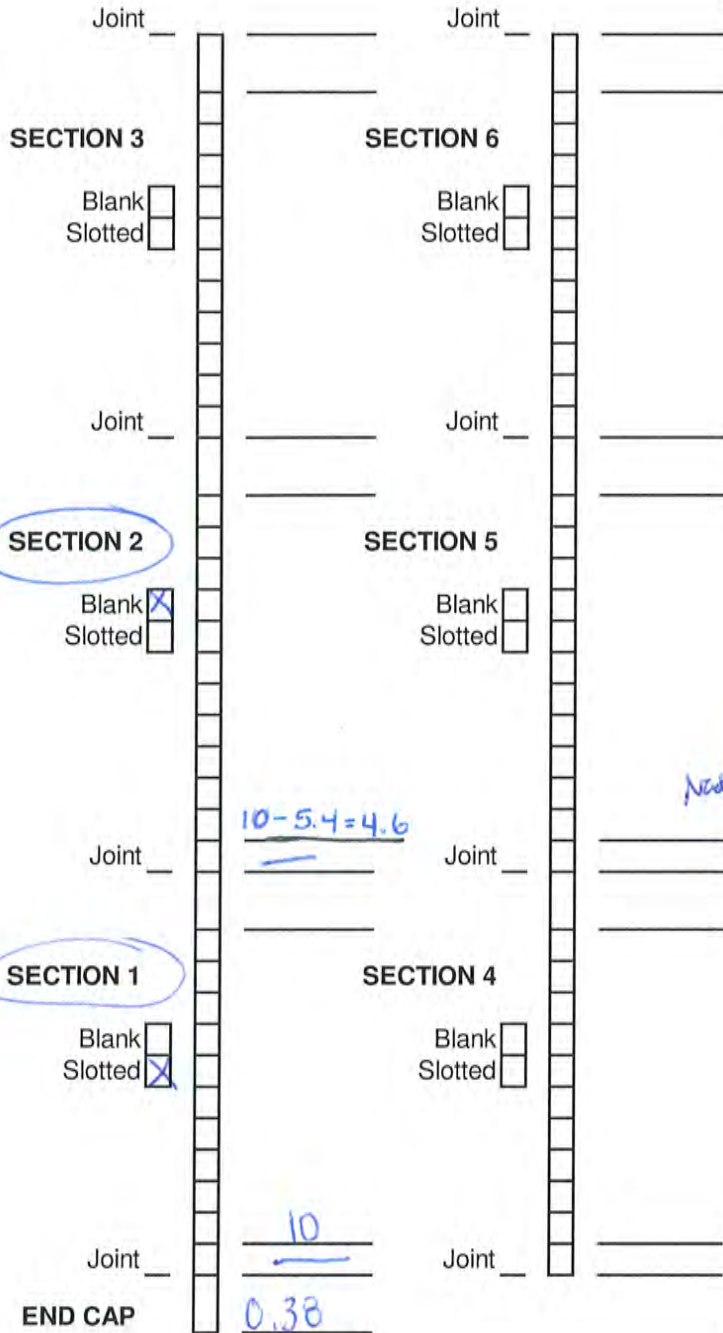
Analysis	Sample Containers	Preservatives	Dup
<input checked="" type="checkbox"/> GRO	3 x VOA	HCl	<input type="checkbox"/>
<input checked="" type="checkbox"/> DRO, RRO	2 x 250ml	HCl	<input type="checkbox"/>
<input checked="" type="checkbox"/> VOCs	3 x VOA	HCl	<input type="checkbox"/>
<input checked="" type="checkbox"/> PFAS	2 x 250ml HOPE	—	<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>



### MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. MW-1

Project Name Cardova SREB  
 Project Number 103311-009  
 Date Installed 3/11/21  
 Geologist/Engineer RLW, DHF



**WELL DATA**

Pipe Type PVC   
 Stainless Steel   
 Other \_\_\_\_\_

Diameter 2"   
 4"   
 Other \_\_\_\_\_

Slot Size 0.010   
 0.020   
 Other \_\_\_\_\_

**SEALS**

	Depth below ground surface	
	From	To
Bentonite	<u>3</u>	<u>1.5</u>
Pea Gravel <i>Natural fill</i>	<u>1.5</u>	<u>0.5</u>
Concrete	<u>0.5</u>	<u>0</u>

**MONUMENTS**

Flush Mount   
 Post \_\_\_\_\_  
 Depth below surface 0  
 Casing Stickup 0.40  
*Below GS*

**JOINTS**

Type male pin up  
 Pin end Down   
 Up

**SAND PACK**

Type or gradation 12-20 Pioneer sand  
 Depth: 15 to 3

**LOCKS**

Type \_\_\_\_\_  
 Key # \_\_\_\_\_

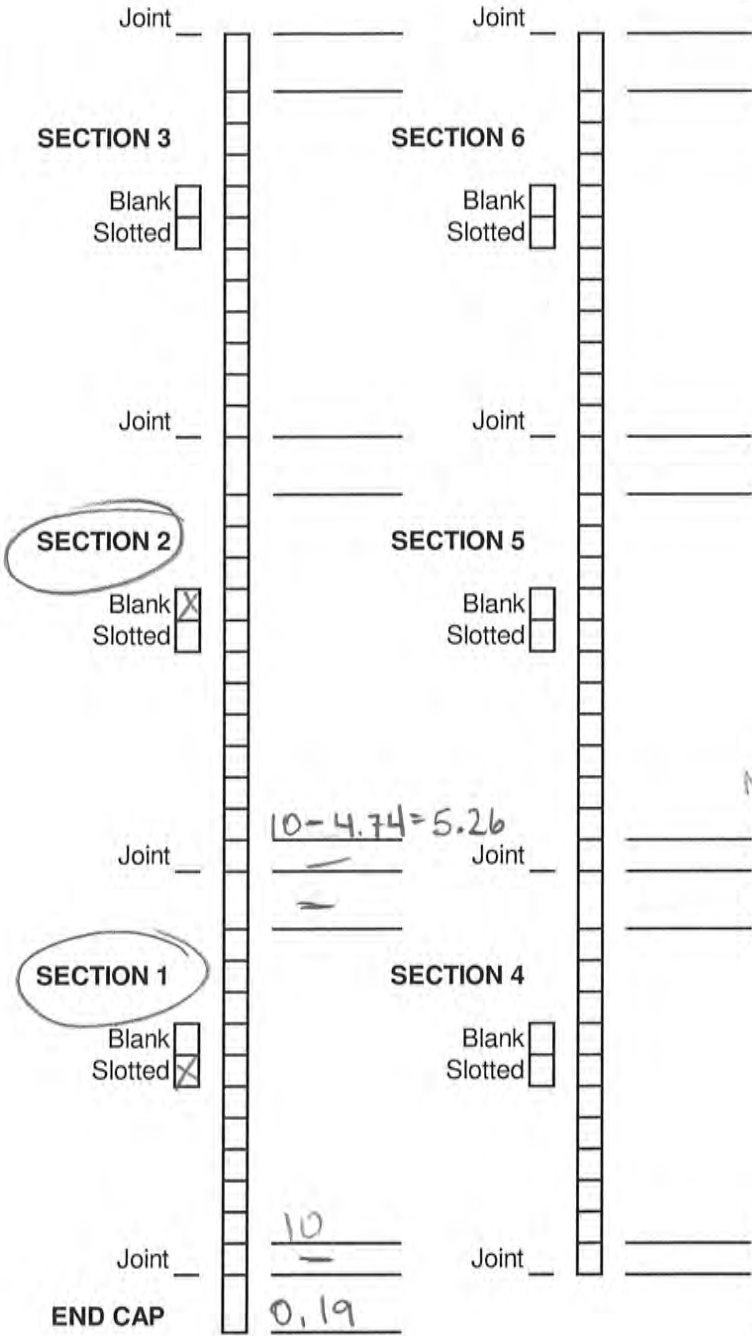
Magnet \_\_\_\_\_  
 Well stickup \_\_\_\_\_  
 Total Length of Well 14.98  
 Screen Depths below top of casing  
 Top 4.6  
 Bottom 14.6

Length cutoffs, last section 4.9 + 0.5 = 5.4

### MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. MW-2

Project Name Cordova SREB  
 Project Number 103311  
 Date Installed 3/12/21  
 Geologist/Engineer DHF & RLW



**WELL DATA**

Pipe Type PVC   
 Stainless Steel   
 Other \_\_\_\_\_

Diameter 2"   
 4"   
 Other \_\_\_\_\_

Slot Size 0.010   
 0.020   
 Other \_\_\_\_\_

**SEALS**

	Depth below ground surface	
	From	To
Bentonite	<u>3</u>	<u>1</u>
<i>Natural Fill</i> Pea Gravel	<u>1</u>	<u>0.5</u>
Concrete	<u>0.5</u>	<u>0</u>

**MONUMENTS**

Flush Mount   
 Post \_\_\_\_\_  
 Depth below surface 0  
 Casing Stickup 0.34  
*below GS*

**JOINTS**

Type Male  
 Pin end Down   
 Up

**SAND PACK**

Type or gradation 12-20  
 Depth: 3 to 15

**LOCKS**

Type \_\_\_\_\_  
 Key # \_\_\_\_\_

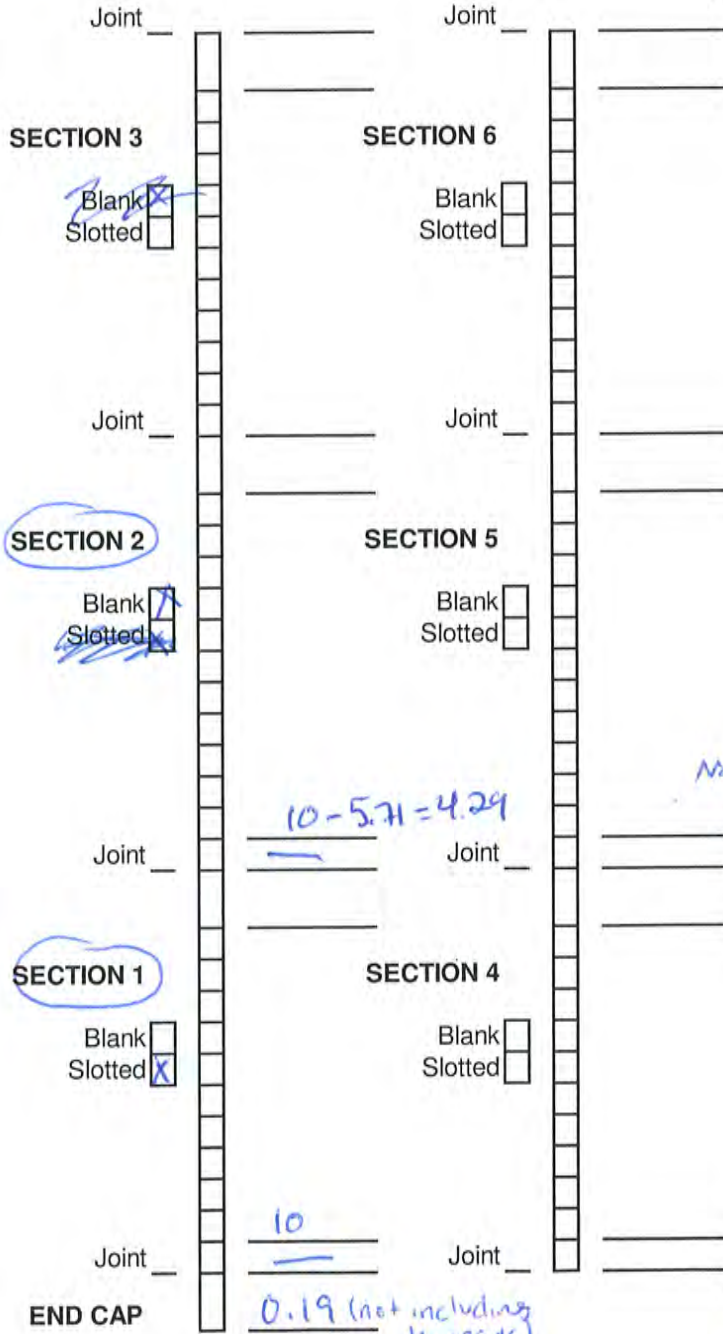
Magnet \_\_\_\_\_  
 Well stickup \_\_\_\_\_  
 Total Length of Well 15.45  
 Screen Depths below top of casing  
 Top 5.26  
 Bottom 15.26

Length cutoffs, last section 4.35 + 0.39 = 4.74

### MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. MW-3

Project Name Cordova SREB  
 Project Number 103311-009  
 Date Installed 3/11/21  
 Geologist/Engineer RLW, DHF



**WELL DATA**

Pipe Type PVC   
 Stainless Steel   
 Other \_\_\_\_\_  
 Diameter 2"   
 4"   
 Other \_\_\_\_\_

Slot Size 0.010   
 0.020   
 Other \_\_\_\_\_

**SEALS**

Depth below ground surface

	From	To
Bentonite	<u>3</u>	<u>1.5</u>
Pea Gravel	<u>1.5</u>	<u>0.5</u>
Concrete	<u>0.5</u>	<u>0</u>

*Natural Fill*

**MONUMENTS**

Flush Mount   
 Post \_\_\_\_\_  
 Depth below surface 0  
 Casing Stickup 0.38  
*below gs*

**JOINTS**

Type flat bottom/female  
 Pin end Down   
 Up

**SAND PACK**

Type or gradation 12-20 Pioneer Sand  
 (2) above s  
 Depth: 15 to 3

**LOCKS**

Type \_\_\_\_\_  
 Key # \_\_\_\_\_

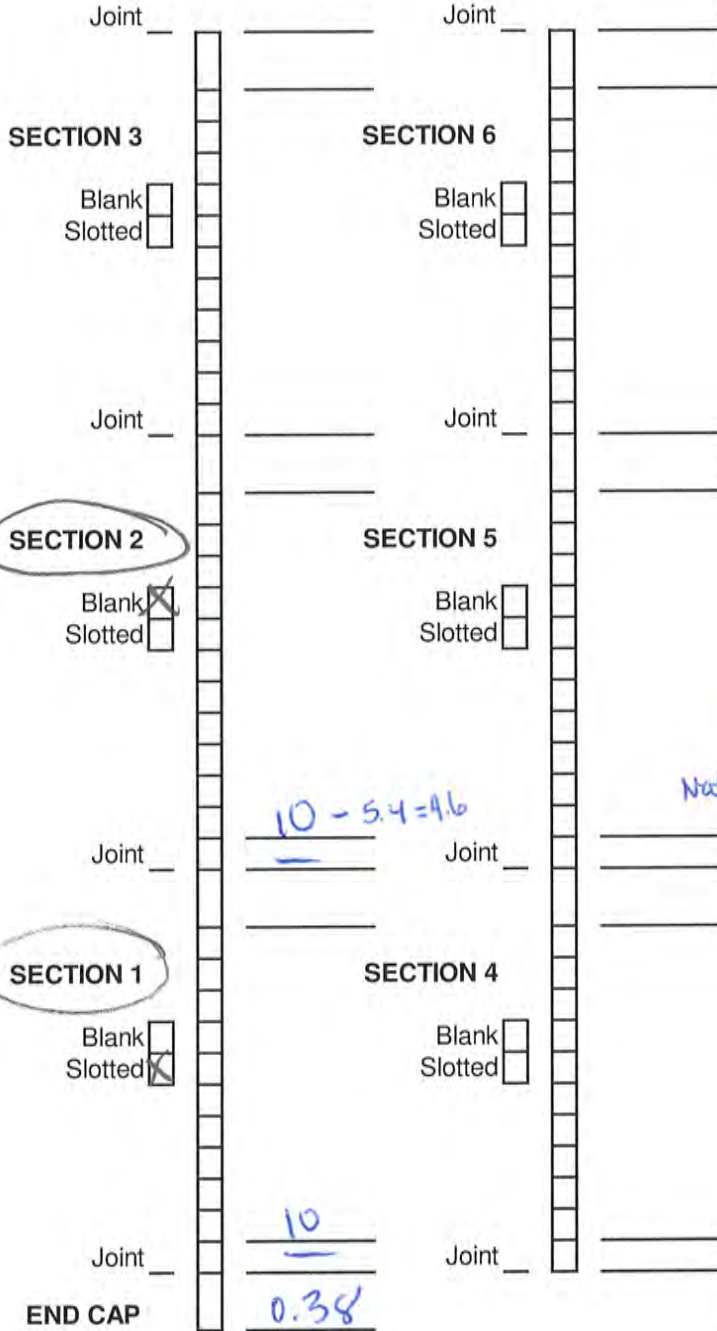
Total Length of Well 14.48  
 Screen Depths below top of casing  
 Top 4.29  
 Bottom 14.29

Length cutoffs, last section 5.23 + 0.48 = 5.71

### MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. MW-4

Project Name Cordova SREB  
 Project Number 103311-009  
 Date Installed 3/13/21  
 Geologist/Engineer RLW, DHP



#### WELL DATA

Pipe Type PVC   
 Stainless Steel   
 Other \_\_\_\_\_

Diameter 2"   
 4"   
 Other \_\_\_\_\_

Slot Size 0.010   
 0.020   
 Other \_\_\_\_\_

#### SEALS

Depth below ground surface  
 From To  
 Bentonite 3 0.5  
 Pea Gravel Native fill —  
 Concrete 0.5 0

#### MONUMENTS

Flush Mount   
 Post \_\_\_\_\_  
 Depth below surface 0  
 Casing Stickup 0.30  
*below gs*

#### JOINTS

Type male  
 Pin end Down   
 Up

#### SAND PACK

Type or gradation 12-20  
 Depth: 15 to 3

#### LOCKS

Type \_\_\_\_\_  
 Key # \_\_\_\_\_

Magnet \_\_\_\_\_  
 Well stickup \_\_\_\_\_  
 Total Length of Well 14.98  
 Screen Depths below top of casing  
 Top 4.6 <sup>5</sup>  
 Bottom 14.6 <sup>10</sup>

Length cutoffs, last section 5.1 + 0.4 = 5.4

*smh*

## WELL DEVELOPMENT LOG

Owner-Client DOT & PE Cordova  
 Location Northeast from ARFF  
 Weather overcast 20's F  
 Development Personnel DHF

Well No. MW-1  
 Project No. 103311-009  
 Date 3/14/21

Diameter and Type of Casing: 2" PVC  
 Total Depth of Well **Before** Development (feet below top of casing): 13.71 + 1.27 = 14.98  
 Depth to Water **Before** Development (feet below top of casing): 6.28  
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.6 Bottom: 14.6

### Development Details

Feet of water in well 8.7  
 Gallons per foot 0.17  
 Gallons in well 1.48  
 Surge method surge block by hand  
 Pump used waterra  
 Tubing used (ft) 25

Time pumping started 1203  
 Flow rate (gal/min) ~1 to 0.5  
 Flow-rate measurement method: gallon jug  
 Time pumping ended 1316  
 Gallons Pumped 45  
 Disposal: 55-gal drum

Depth to Water **After** Development (feet below top of casing): 6.3  
 Total Depth of Well **After** Development (feet below top of casing): 13.65 + 1.27

### Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
Depth from Bow 0-8 1 1 2 2 3 3 5 7	1202	Surged well		1/1248	very turbid
	1203	very turbid, dark brown sand		2/1259	very turbid
	1211	very turbid, dark brown sand		3/1303	slightly less turbid
	1220	very turbid, slight improvement		4/1308	opaque
	1224	very turbid	5	1310	opaque
	1228	very turbid	6	1314	opaque
	1231	opaque, hardly any sand		1316	pump stop
	1235	opaque			
	1240	A little opaque			
	1241	Surged well			

NOTES: water cleared substantially during subsequent purging with a submersible pump but was never completely clear.

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

## WELL DEVELOPMENT LOG

Owner-Client DOT&PF Carolina  
 Location west from ARFF  
 Weather sunny 10°F  
 Development Personnel DHF

Well No. MW-2  
 Project No. 102311-009  
 Date 3/14/21

Diameter and Type of Casing: 2" PVC  
 Total Depth of Well **Before** Development (feet below top of casing): 13.05 + 1.27 = 14.32  
 Depth to Water **Before** Development (feet below top of casing): 7.46  
 Depth to Screen Top and Bottom (from Construction Log): Top: 5.26 Bottom: 15.26

### Development Details

Feet of water in well <u>7.86</u>	Time pumping started <u>951</u>
Gallons per foot <u>0.17</u>	Flow rate (gal/min) <u>~1</u>
Gallons in well <u>1.34</u>	Flow-rate measurement method: _____
Surge method <u>surge block by hand</u>	<u>gallon jug</u>
Pump used <u>Waterira</u>	Time pumping ended <u>1110</u>
Tubing used (ft) <u>25</u>	Gallons Pumped <u>~45</u>
	Disposal: <u>55 gallon drum</u>

Depth to Water **After** Development (feet below top of casing): 7.45  
 Total Depth of Well **After** Development (feet below top of casing): 13.27 + 1.27 = 14.54

### Observations

Depth below  
from BOW

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0-8	950	Surged well	5.5	1055	more clear
1.5	951	very turbid, dark, sandy	6.5	1101	slightly opaque
1.5	1005	very turbid, sandy	6.5	1104	almost clear
2.5	1010	turbid, some sand	3.5	1107	turbid
1.5	1018	turbid, some sand		1110	pump stop
1.0	1024	very dark brown, turbid			
1.0	1027	turbid with some improvement			
	1030	surged well			
3.5	1038	turbid, some sand			
4.5	1048	turbid, slightly clear			

NOTES: well water was very clear during subsequent puging and sampling with a submersible pump.

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

## WELL DEVELOPMENT LOG

Owner-Client DOT & PF  
 Location Carrollville SREB  
 Weather 20's F and clear  
 Development Personnel RLW/DHF

Well No. MW-3  
 Project No. 103811-009  
 Date 3/13/21

Diameter and Type of Casing: 2" PVC  
 Total Depth of Well **Before** Development (feet below top of casing): 13.36 + 1.27 = 14.63  
 Depth to Water **Before** Development (feet below top of casing): 7.63  
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.29 Bottom: 14.29

### Development Details

Feet of water in well 7  
 Gallons per foot 0.17  
 Gallons in well 1.19  
 Surge method Surge block on foot valve  
 Pump used Waterira  
 Tubing used (ft) 30  
 Time pumping started 1709  
 Flow rate (gal/min) 1  
 Flow-rate measurement method: \_\_\_\_\_  
 Time pumping ended 1820  
 Gallons Pumped 45  
 Disposal: 55-gal drum

Depth to Water **After** Development (feet below top of casing): 7.66  
 Total Depth of Well **After** Development (feet below top of casing): 13.38 + 1.27 = 14.65

### Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0	1728	very silty + gray			
0	1732	cloudy + brown			
2	1738	brown opaque			
4'	1745	slightly cloudy			
6'	1750	orange - hazy turbid			
4'	1757	grey opaque			
4'	1804	slightly cloudy			
4'	1809	slightly cloudy			
3'	1814	slightly cloudy			
1'	1817	slightly cloudy			

NOTES: used surge block 1709 - 1728, hand surged then used foot valve only

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

jmh

## WELL DEVELOPMENT LOG

Owner-Client Cordova DOT&PF Well No. MW-4  
 Location West from generator bldg Project No. 103311-009  
 Weather overcast 20'SF Date 3/14/21  
 Development Personnel DHF

Diameter and Type of Casing: 2" PVC  
 Total Depth of Well **Before** Development (feet below top of casing): 13.58 + 1.27 = 14.85  
 Depth to Water **Before** Development (feet below top of casing): 8.21  
 Depth to Screen Top and Bottom (from Construction Log): Top: 4.6 Bottom: 14.6

### Development Details

Feet of water in well 6.64 Time pumping started 1457  
 Gallons per foot 0.17 Flow rate (gal/min) -1  
 Gallons in well 1.13 Flow-rate measurement method:  
 Surge method Surge block, by hand gallon jug  
 Pump used Waferra Time pumping ended 1610  
 Tubing used (ft) 25 Gallons Pumped 45  
 Disposal: 55-gallon drum

Depth to Water **After** Development (feet below top of casing): 8.22  
 Total Depth of Well **After** Development (feet below top of casing): 13.58 + 1.27 = 14.85

### Observations

	Time	Water Clarity (Visual)		Time	Water Clarity (Visual)
0-8	1455	Surged well	2.5	1550	opaque
1	1500	very dark, turbid	3.5	1603	opaque
1	1506	very turbid, some sand	5	1609	opaque
2	1517	very turbid		1610	pump stop
3	1522	turbid, slight improvement			
3	1527	opaque			
4	1533	opaque			
5	1540	opaque			
0.5	1547	turbid			
1.5	1553	turbid			

NOTES: \_\_\_\_\_

### WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6



SOIL SAMPLE COLLECTION LOG

Project Number: 103311-009  
 Project Name: Cordova SREB  
 Sampler: RLW, DHF

Date	Sample Time	Sample ID	Location	Depth (ft)	Sample Type	PID Reading	Analyses
3/10/21	1405	1	B-12	0-2.5	FS	0.0	-
	1405	2	B-12	2.5-5.0	FS	0.0	-
	1412	SB12-1	Boring B-12, surface	0-2.0	ES	0.0	GRO, DRO, RRO, PFAS, PAH
	1444	3	B-12	5-6.5	FS	0.3	-
	1444	4	B-12	6.5-8	FS	4.5	-
	1455	SB12-2	Boring B-12, groundwater interface	6.5-8	ES	4.5	GRO, DRO, RRO, PFAS
	1530	5	B-13	0.6-2.6	FS	0	-
	1531	6	B-13	2.6-5	FS	0	-
	1600	7	B-13	5-17	FS	0.1	-
	1601	8	B-13	7-8.6	FS	0	-
	1537	SB13-1	Boring B-13, surface	0.6-2.6	ES	0	GRO, DRO, RRO, PFAS
		SB13-2	Boring B-13, groundwater interface	7-8.6	ES	0	GRO, DRO, RRO, PFAS
	1657	9	B-10	0-1.5	FS	0	-
	1659	10	B-10	1.5-3	FS	0.01	-
	1615	11	B-10	3-5	FS	0	-
	1620	12	B-10	0-1.5	FS	0	-
	1700	SB10-1	Boring B-10, surface soil	0-1.5	ES	0	GRO, DRO, RRO, PFAS
	1732	13	B-10	5-7	ES	0	-
	1734	14	B-10	7-8.5	FS	0	-
	1750	SB10-2	Boring B-10, groundwater interface	7-8.5	ES	0	GRO, DRO, RRO, PFAS
3/11/21	957	15	B-MW-3	0-2	FS	0	-
	958	16	"	2-4	FS	0	-
	1045	17	"	5-5.7	FS	0.2	-
	1045	18	"	5.7-	FS	0.1	-
	1002	SB-MW3-1	Boring B-MW-3, surface	0-2	ES	0	GRO, DRO, RRO, PFAS
	952	SB-MW3-101	Duplicate of SB-MW3-1	0-2	FD	0	"
	1105	SB-MW3-2	Boring B-MW-3, groundwater interface	5-5.7	ES	0.2	"
	1211	19	B-15	0-2.5	FS	0	-
	1212	20	"	2.5-5	FS	0.1	-
	1215	SB15-1	Boring B-15, surface	0-1.5	ES	0	GRO, DRO, RRO, PFAS

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

RLW

SOIL SAMPLE COLLECTION LOG

Project Number: 103311-059  
 Project Name: Cordova SREB  
 Sampler: RLW, DLF

Date	Sample Time	Sample ID	Location	Depth (ft)	Sample Type	PID Reading	Analyses
3/11/21	1255	21	B-15	0.5-6.5	FS	0.2	-
	1256	22	" "	6.5	FS	0.2	-
	1421	23	B-MW-1	0-2	FS	1.5	-
	1422	24	B-MW-1	2-3.9	FS	1.7	-
	1450	25	" "	5-5.7	FS	1.0	-
	1620	26	B-9	0-2	FS	0.0	-
	1622	27	B-9	2-4	FS	0.0	-
	1636	28	B-9	5-7.3	FS	0.0	-
		<del>SB15-1</del>	<del>Boring B-15, Surface</del>	<del>0-1.5</del>	<del>ES</del>	<del>0</del>	<del>DRO, GRD, GPO, VOC, PFAS</del>
	1305	SB15-2	Boring B-15, groundwater interface	6.5-8.5	ES	0.2	DRO, GRD, GPO, VOC, PFAS
	1415	SB-MW-1	Boring B-MW-1, Surface	0-1.5	ES	1.5	-
	1510	SB-MW-2	Boring B-MW-1, highest PID	2-3.9	ES	1.7	-
	1620	SB9-1	Boring B-9, Surface	0-2	ES	0.0	-
	1648	SB9-2	Boring B-9, groundwater interface	5-7	ES	0.0	-
3/12/21	914	29	B-14	0-2	FS	1.3	-
	915	30	"	2-4.1	FS	0.0	-
	930	31	"	5-6.5	FS	0.0	-
	931	32	"	6.5-8.3	FS	0.0	-
	940	33	B-TWP-5	0-2	FS	0.0	-
	941	34	B-TWP-5	2-4.3	FS	0.0	-
	918	SB14-1	B-14, Surface	0-2	ES	1.3	DRO, GRD, RRO, VOC, PFAS
	945	SB14-2	B-14, groundwater interface	6.5-8	ES	0.0	DRO, GRD, RRO, VOC, PFAS, +PAH
	1020	35	B-TWP-5	0-2	FS	0.0	-
	1024	36	" B-TWP-5	2-4.3	FS	0.0	-
	1030	SB-TWPS-1	B-TWPS, Surface	0-2.0	ES	0.0	DRO, GRD, RRO, VOC, PFAS
	1040	37	"	5-7.0	FS	0.0	-
	1041	38	"	7-8.4	FS	0.0	-
	1045	SBTWP5-2	B-TWP-5, groundwater interface	6.2-8.4	ES	0.0	GRD, DRO, RRO, VOC, PFAS, +PAH
	1035	SBTWP5-102	B-TWP-5, field duplicate	6.2-8.4	FD	0.0	" "
	1125	39	B-17	0-2.5	FS	0.0	-

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

Sharpie: 31.4 ppm

RLW

SOIL SAMPLE COLLECTION LOG

Project Number: 105311-009  
 Project Name: Cordova SREB  
 Sampler: RW, DHE

Date	Sample Time	Sample ID	Location	Depth (ft)	Sample Type	PID Reading	Analyses
3/12/21	1126	40	B-17	2.5-4.9	FS	0.0	-
	1136	41	"	5-6.5	FS	0.0	-
	1137	42	"	6.5-8.3	FS	0.0	-
	1150	SB17-2	B-17, groundwater interface	6.6-8.3	ES	0.0	GRD, DRD, RRO, VOCs, PFAS
	<del>1232</del>	43	<del>BA</del> B-mw-2	0-2	FS	0.0	-
	1233	44	"	2-5	FS	0.0	-
	1303	45	"	5-6.5	FS	0.8	-
	1304	46	"	6.5-7.9	FS	1150.0	-
	1322	SBMW2-2	B-mw-2, groundwater interface	7-7.8	ES	0.0	GRD, DRD, RRO, VOCs, PFAS
	1237	SBMW2-1	B-mw-2, surface	0-1.5	ES	0.0	"
	1504	47	B-16	0-2	FS	0.0	-
	1504	48	"	2-3.7	FS	0.0	-
	<del>1506</del>	SB16-1	B-16, surface	0-2	ES	0.0	GRD, DRD, RRO, VOCs, PFAS
	1506	49	"	5-7	FS	0.0	-
	1507	50	"	7-9.4	FS	0.0	-
	1631	51	B-18	0-2	FS	0.0	-
	1632	52	"	2-4.8	FS	0.0	-
	1640	53	"	5-6.5	FS	0	-
	1641	54	"	6.5-8.3	ES	0	-
	1633	SB18-1	B-18, surface	0-1.5	ES	0.0	GRD, DRD, RRO, VOCs, PFAS
	1655	SB18-2	B-18, groundwater interface	7-8.2	ES	0.0	GRD, DRD, RRO, VOCs, PFAS
	1730	55	B-11	0-2	FS	0	-
	1731	56	"	2-3.7	FS	0	-
	1740	57	"	5-6.5	FS	0	-
	1741	58	"	6.5-8	FS	0	-
3/13/21	915	59	B-TWP-7	0-2.5	FS	5.7	*humidity interference
	916	60	"	2.5-5	FS	7.1	*humidity interference
	928	61	"	5-6.5	FS	0.5	-
	929	62	"	6.5-	FS	0.0	-
	935	60 re-screen	"		FS	0	-

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

3/13/21 936 59 re-screen

humidity interference  
 PID → re-calibrated  
 RW

SOIL SAMPLE COLLECTION LOG

Project Number: 103311-009  
 Project Name: Cordova SREB  
 Sampler: RW, DHF

Date	Sample Time	Sample ID	Location	Depth (ft)	Sample Type	PID Reading	Analyses
3/13/21	1028	FS 603	B-MW-4	0-2	FS	0.1	—
	1030	64	"	2-	FS	0.0	—
	1110	65	"	5-6	FS	0.0	—
	1112	66	"	6-	FS	0.0	—
	1212	67	B-TWP-6	0-1	FS	0.0	—
	1213	68	"	1-1.5	FS	0.0	—
	1217	69	"	1.5-3	FS	0.0	—
	1218	70	"	3.5-	FS	0.0	—
	1233	71	"	5-7	FS	0.0	—
	1234	72	"	7-9	FS	0.0	—
3/12/21	1130	SB17-1	B-17, surface	0-2.0	ES	0.0	GRO DRD, RRO, VOC, PFAS
	1552	SB16-2	B-16, groundwater interface	6.5-7.5	ES	0.0	
	1730	SB11-1	B-11, surface	0-2.0	ES	0.0	
	1751	SB11-2	B-11, groundwater interface	7.0-8.0	ES	0.0	
3/13/21	915	SBTWP7-1	B-TWP-7, surface	0.0-1.5	ES	0.0	↓
	1000	SBTWP7-2	B-TWP-7, groundwater interface	7-8.5	ES	0.0	
	1040	SBMW4-1	B-MW-4, surface	0-2.0	ES	0.1	
	1030	SBMW4-101	B-MW-4, field duplicate of SBMW4-1	0-2.0	FD	0.1	
	1125	SBMW4-2	B-MW-4, groundwater interface	7-8.3	ES	0.0	
	1225	SBTWP6-1	B-TWP-6, surface	0-1.5	ES	0.0	
	1245	SBTWP6-2	B-TWP-6, groundwater interface	7-8.3	ES	0.0	
	1215	SBTWP6-101	B-TWP-6, field duplicate of SBTWP6-1	0-1.5	FD	0.0	

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

RW

# SOIL SAMPLE COLLECTION LOG

Project Number: 103311-011

Page 1 of 1

Project Name: CORDOVA SREB UIC

Sampler: DHF + RLW

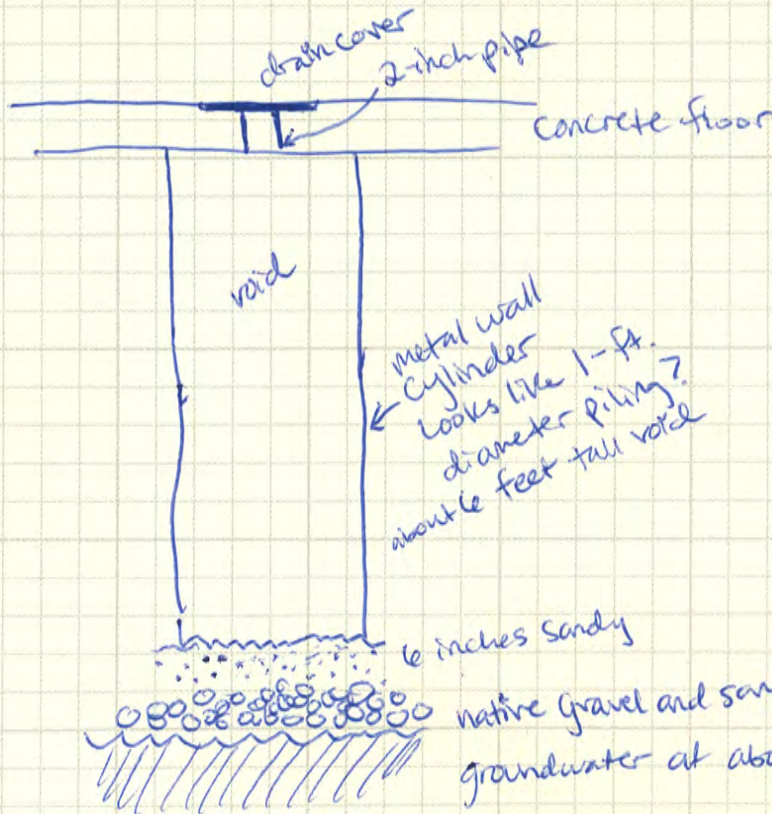
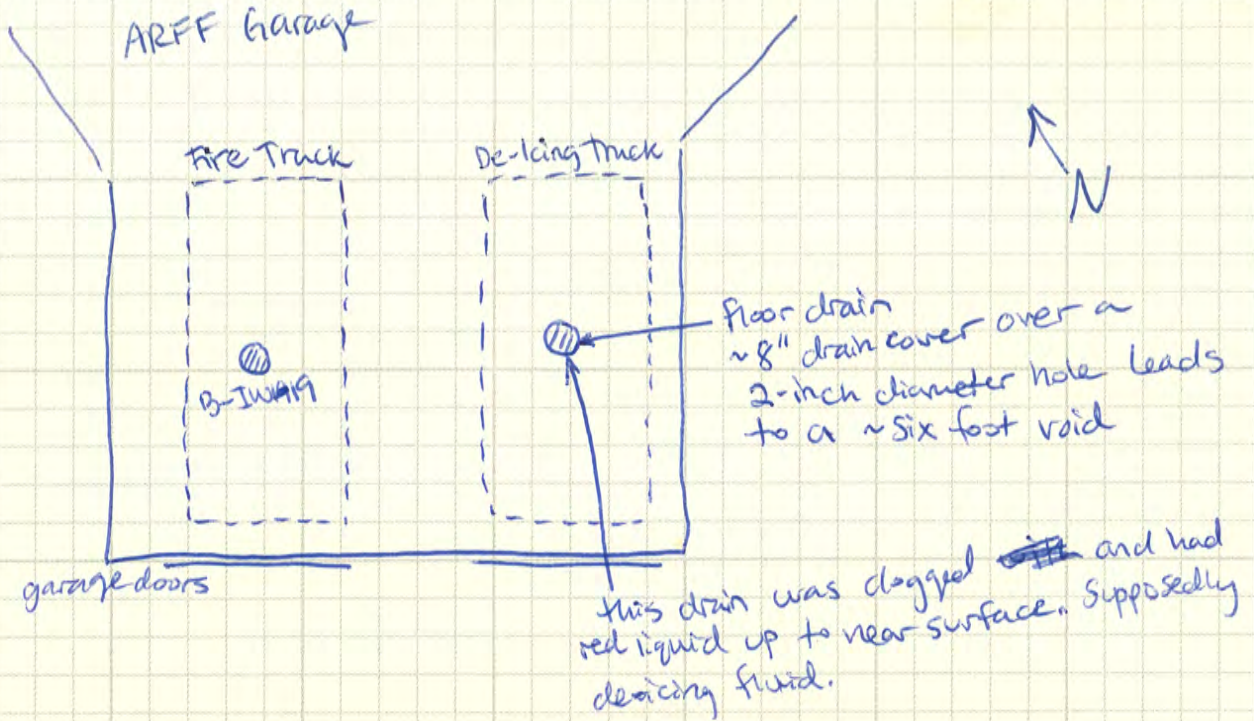
Date	Sample Time	Sample ID	Location	Depth (ft)	Sample Type	PID Reading	Analyses
3/15/21	1247	1	B-IW-19; base of IW discharge	6-7.5	FS	23.7	-
	1248	2	B-IW-19; groundwater interface	7.5-8.5	FS	0	-
	1305	SB IW 19-1	B-IW-19; base of IW discharge	6-7.5	ES	23.7	GRD, DRD, RRO, SVOC, Metals, PFA#
	1310	SB IW 19-2	B-IW-19; groundwater interface	7.5-8.5	ES	0	GRD, DRD, RRO, SVOC, Metals, PFA#
	1329	3	B-IW-20; base of IW discharge	6-7.5	FS	overlimit	-
	1330	4	B-IW-20; groundwater interface	7.5-8.7	FS	overlimit	-
	1335	SB IW 20-1	B-IW-20; base of IW discharge	6-7.5	ES	overlimit	GRD, DRD, RRO, PAH, SVOC, metals#
	1340	SB IW 20-2	B-IW-20; groundwater interface	7.5-8.7	ES	over limit	GRD, DRD, RRO, SVOC, metals, PFA#
	1325	SB IW 20-101	B-IW-20; duplicate of SB IW 20-1	6-7.5	FD	overlimit	GRD, DRD, RRO, PAH, SVOC, metals, PFA#

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

≠ samples also submitted for ethylene glycol + ammonia

RLW

## INJECTION WELL NOTES



floor drains were capped when we arrived, ~~except~~ except cap was not covering the pipe on CR-IW-1. After drilling the borings we replaced the caps. CR-IW-1 was a plug and CR-IW-2 was a lacking well cap. we did not seal the drains. ~~not~~

Robbie said floor drains don't drain well and he <sup>often</sup> has to mop liquid out from ARFF because of it.

Boreholes filled with bentonite chips

FARS

APPENDIX A: FIELD FORMS




PROJECT NO.:	103311-009
REPORT DATE:	3/9/21
REPORT NO.:	01
SW FIELD REP.:	RLW, DHF
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

<b>PROJECT LOCATION</b>	<b>Cordova SREB Site Characterization</b>
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<b>REPORT SUBMITTED TO:</b>		<b>CONTRACTOR NAME AND CONTACT:</b>		<b>WEATHER &amp; TEMP.</b>	36°F and snowing
Client	PDC Engineers, Inc.	General		<b>TIMES OF SITE VISITS:</b>	
CC	DOT&PF	Subcontractors for Environmental Services			
		Discovery Drilling		from	15:45 to 15:20
				from	to

## CONSTRUCTION OBSERVATIONS

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
1	Travel	9:00 Prepare for travel at S&W Office 11:20 Depart Fairbanks for Cordova 15:00 Arrive in Cordova. Pick up cargo and transport to lodging.	None.
2	Initial Site Visit	15:45 Meet Stephanie Dow and Discovery Drilling near ARFF building. Discuss the project status and plan for drilling tomorrow. Called Robbie with DOT&PF to plan to meet tomorrow to start the badging process for DHF and RLW. Called Ryan Collins at S&W to discuss the monitoring well locations relative to the test wells.	None.
3	Sampling Prep	7:00 Return to lodging and organize sampling equipment in preparation for tomorrow.	None.
4	Photographs	 <p>Photo 1: Site area between the SREB (left) and the eastern edge of the ARFF.</p>	

## OTHER GENERAL OBSERVATIONS

<p><i>LIMITATIONS: The Shannon &amp; Wilson field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Shannon &amp; Wilson field representative and our acceptance of any non-conforming work or failure to reject any non-conforming work does not relieve the contractor from complying with its contract documents. Shannon &amp; Wilson does not have the authority to direct the contractor's work. Any information provided by the Shannon &amp; Wilson field inspector is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, procedures, construction site safety, quality of work, and adherence to the contract documents.</i></p>	<p>REVIEW BY (PM initial/date)</p> <p><i>V&amp;W</i> 2021.03.11 08:42:33 -09'00'</p>
	<p>Page 1 of 2</p>

PROJECT NO.:	103311-009
REPORT DATE:	3/9/21
REPORT NO.:	01
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT


PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
-----------------------	---

## CONSTRUCTION OBSERVATIONS (continued)

Meetings Attended:	None.
Attachments:	None.

---END---

*LIMITATIONS: The Shannon & Wilson field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Shannon & Wilson field representative and our acceptance of any non-conforming work or failure to reject any non-conforming work does not relieve the contractor from complying with its contract documents. Shannon & Wilson does not have the authority to direct the contractor's work. Any information provided by the Shannon & Wilson field inspector is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, construction site safety, quality of work, and adherence to the contract documents.*

REVIEW BY (PM initial/date)	
	2021.03.11 08:42:46 -09'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/10/21
REPORT NO.:	02
SW FIELD REP.:	RLW, DHF
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

<b>PROJECT LOCATION</b>	<b>Cordova SREB Site Characterization</b>
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<b>REPORT SUBMITTED TO:</b>		<b>CONTRACTOR NAME AND CONTACT:</b>		<b>WEATHER &amp; TEMP.</b>	36°F and snowing
Client	PDC Engineers, Inc.	General		<b>TIMES OF SITE VISITS:</b>	
CC	DOT&PF	Subcontractors for Environmental Services			
		Discovery Drilling		from	9:00 to 18:00
				from	to

## CONSTRUCTION OBSERVATIONS

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
1	Airport Badging	6:00 DHF and RLW meet Robbie at the DOT&PF Maintenance Station to start the airport badging application process. 6:30 DHF and RLW leave DOT&PF Station to return to lodging and prepare equipment for drilling.	None.
2	Private Well Sampling and Well Search, Soil Boring Sampling	8:00 Calibrated YSI and PID. Called the local telephone and electric companies to set up a time to meet for utility locates. 9:00 DHF and RLW arrive on-site and meet with SKD and Discovery Drilling. CEC (electric utility) personnel arrived on-site and met with DHF to mark utilities near proposed boring locations. RLW sampled the Alaska Airlines private well. 10:00 RLW completed the Alaska Airlines private well sampling and started sampling the ARFF well. DHF met with CTC (telephone company) personnel to mark utilities near proposed boring locations. 11:00 Robbie and an FAA representative drove the site to go over utility locations. The FAA representative said there were no FAA utility conflicts near our proposed boring locations. RLW begin contacting airport tenants regarding whether they have a private well on their lease lot. 11:15 DHF and RLW left the site to exchange the rental vehicle so a flat tire could be repaired. 12:00 Drillers finish cleaning up the site from the previous job and prepare to begin the environmental work. The drillers left the site to take trash to the landfill and return one of their staff to town. 13:00 RLW complete calling from the lease list for the well search. 13:50 Begin drilling at boring B-12, at northwest corner of SREB building near AST. 15:20 Begin drilling at boring B-13, at southwest corner of SREB building near runway apron. 16:45 Begin drilling at boring B-10, north from ARFF and west from leach field. 18:00 Complete boring B-10 and clean-up site. Leave airport; done for day.	None.

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REVIEW BY (PM initial/date)


*RLW* 2021.03.12  
10:37:01 -09'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/10/21
REPORT NO.:	02
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a


# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
3	Soil Field-Screening and Sampling	Soil field-screening results ranged from 0 to 4.5 ppm. We collected six analytical samples from boring B-12, B-13, and B-10. Soil samples were collected from the surface (approximately 0.0 to 2.0 feet below ground surface) and at the groundwater interface (5 to 7 feet bgs) from each boring.	None.
4	Photographs	 <p>Photo 1: DHF logs soil boring B-12 on east side of ARFF.</p>	None.

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REVIEW BY (PM initial/date)  
 2021.03.12  
 10:37:16 -09'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/10/21
REPORT NO.:	02
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
		 <p>Photo 2: RLW purges the ARFF well prior to collecting a PFAS sample.</p>  <p>Photo 3: Discovery Drilling installs boring B-10.</p>	

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REVIEW BY (PM initial/date)  
 VEW 2021.03.12  
 10:37:30 -09'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/10/21
REPORT NO.:	02
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER

## OTHER GENERAL OBSERVATIONS

Meetings Attended:	13:30: Daily safety meeting
Attachments:	None.

---END---

<p><i>LIMITATIONS: The Shannon &amp; Wilson field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Shannon &amp; Wilson field representative and our acceptance of any non-conforming work or failure to reject any non-conforming work does not relieve the contractor from complying with its contract documents. Shannon &amp; Wilson does not have the authority to direct the contractor's work. Any information provided by the Shannon &amp; Wilson field inspector is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, construction site safety, quality of work, and adherence to the contract documents.</i></p>	REVIEW BY (PM initial/date)
	<p>V&amp;W 2021.03.12 10:37:43 -09'00'</p>

PROJECT NO.:	103311-009
REPORT DATE:	3/11/21
REPORT NO.:	03
SW FIELD REP.:	RLW, DHF
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

<b>PROJECT LOCATION</b>	<b>Cordova SREB Site Characterization</b>
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<b>REPORT SUBMITTED TO:</b>		<b>CONTRACTOR NAME AND CONTACT:</b>		<b>WEATHER &amp; TEMP.</b>	32°F and snowing
Client	PDC Engineers, Inc.	General			
CC	DOT&PF	Subcontractors for Environmental Services		<b>TIMES OF SITE VISITS:</b>	
		Discovery Drilling		from	8:40 to 17:20
				from	to

## CONSTRUCTION OBSERVATIONS

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
1	Monitoring Well Installation and Soil Boring Drilling	<p>7:00 Prepared gear and calibrated PID.</p> <p>8:40 DHF and RLW arrive on-site with Discovery Drilling. Conduct daily safety meeting.</p> <p>9:00 Advance boring B-MW-3 near test well 2, east of ARFF. Install the monitoring well MW-3 in the boring location.</p> <p>12:00 Begin drilling B-15, southeast of ARFF near runway apron. Robbie visits the site to discuss the location of the underground heating oil tank (HOT) located east of the ARFF prior to installing TWP-5 and B-14. He did not know the specifics about the tank. We called Val Webb (PM) and she reviewed the As-builts. The HOT is reportedly 3,000 gallons, about 6 feet wide by 18 feet long, and directly next to the ARFF east wall. Ms. Webb recommended staying at least 10 feet from the ARFF east wall when drilling to avoid the buried tank.</p> <p>14:00 Begin drilling MW-1 and B-MW-1, northeast of ARFF near proposed excavations for the new leach field.</p> <p>16:00 Begin drilling B-9, located approximately 15 feet west of MW-1.</p> <p>16:45 Finish boring B-9 and clean-up site. Leave airport; done for day.</p>	None.
2	Private Well Search	11:30 RLW receives a call from a lessee to confirm the presence of a hand-dug well.	None.
3	Soil Field Screening and Sampling	Soil field-screening results ranged from 0.0 to 1.7 ppm. We collected 8 analytical samples from B-MW-3, B-15, B-MW-1, and B-9, and 1 field duplicate from B-MW-3. Soil samples were collected from the surface (approximately 0.0 to 2.0 feet below ground surface) and at the groundwater interface (5 to 7 feet bgs) for each boring, except for B-MW-1 where soil was collected at the surface and highest PID reading of 1.7 ppm at 2.0 to 3.9 feet bgs.	None.

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REVIEW BY (PM initial/date)



*VEW* 2021.03.12  
10:50:02 -09'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/11/21
REPORT NO.:	03
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a


# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
4	Photographs	 <p>Photo 1: Discovery Drilling installing MW-3, located east of the SREB and ARFF. The corner of the SREB is on the right. Photo taken facing southwest towards the runway.</p>  <p>Photo 2: DHF logs boring B-15. Photo taken facing south toward the runway.</p>	None.

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REVIEW BY (PM initial/date)  
 2021.03.12  
 10:50:43 -09'00'





PROJECT NO.:	103311-009
REPORT DATE:	3/11/21
REPORT NO.:	03
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
		 <p>Photo 3: DHF collecting a surface sample from B-MW-3.</p>  <p>Photo 4: DHF collecting a sample from B-9.</p>	

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REVIEW BY (PM initial/date)	
<i>VEW</i>	2021.03.12 10:50:56 -09'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/11/21
REPORT NO.:	03
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT


PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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**CONSTRUCTION OBSERVATIONS (continued)**  
**OTHER GENERAL OBSERVATIONS**

Meetings Attended:	8:45 Daily safety meeting
Attachments:	None.

---END---

*LIMITATIONS: The Shannon & Wilson field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Shannon & Wilson field representative and our acceptance of any non-conforming work or failure to reject any non-conforming work does not relieve the contractor from complying with its contract documents. Shannon & Wilson does not have the authority to direct the contractor's work. Any information provided by the Shannon & Wilson field inspector is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, construction site safety, quality of work, and adherence to the contract documents.*

REVIEW BY (PM initial/date)

<small>2021.03.12 10:51:08 -09'00'</small>

PROJECT NO.:	103311-009
REPORT DATE:	3/12/21
REPORT NO.:	04
SW FIELD REP.:	RLW, DHF
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

<b>PROJECT LOCATION</b>	<b>Cordova SREB Site Characterization</b>
-------------------------	---

<b>REPORT SUBMITTED TO:</b>		<b>CONTRACTOR NAME AND CONTACT:</b>		<b>WEATHER &amp; TEMP.</b>	13 to 29°F and clear
Client	PDC Engineers, Inc.	General		<b>TIMES OF SITE VISITS:</b>	
CC	DOT&PF	Subcontractors for Environmental Services			
		Discovery Drilling		from	8:30 to 18:30
				from	to

## CONSTRUCTION OBSERVATIONS

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
1	Monitoring Well Installation and Soil Boring Drilling	<p>7:00 Prepared gear and calibrated PID.</p> <p>8:30 DHF and RLW arrive on-site with Discovery Drilling. Conduct daily safety meeting.</p> <p>8:50 Advance boring B-14, located about 15 feet east of the ARFF and out-of-use heating oil tank.</p> <p>10:10 Begin drilling boring B-TWP-5, located about 15 feet east of the ARFF and about 10 feet south from B-15.</p> <p>11:15 Advance B-17, located southwest of ARFF</p> <p>12:15 Advance B-MW-2 and install MW-2, located west of the ARFF and existing water supply well. RLW and DHF called VEW to discuss the ammonia vapors present in the ARFF and discussed mitigation solutions.</p> <p>14:45 Begin advancing B-16. The sample liner in the first boring interval compacted inside the rod likely due to dense, frozen soil and was unusable for sampling. Discovery Drilling advanced an additional boring to the original B-16 to capture the 0 to 5 foot interval.</p> <p>16:30 Advanced B-18, located west of the ARFF.</p> <p>17:15 Begin drilling B-11, located north of the generator building.</p> <p>18:15 Clean up site and finish for day.</p>	None.
2	Soil Field Screening and Sampling	Soil field-screening results ranged from 0.0 to 1.3 ppm. We collected 14 analytical samples from B-14, B-17, B-TWP-5, B-MW-2, B-16, B-18, and B-11, and 1 field duplicate from B-TWP-5. Soil samples were collected from the surface (approximately 0.0 to 2.0 feet below ground surface) and at the groundwater interface (approximately 5 to 7 feet bgs) for each boring.	None.

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REVIEW BY (PM initial/date)

Reviewed By  


2021.04.14  
 12:46:47 -08'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/12/21
REPORT NO.:	04
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
3	Photographs	 <p>Photo 1: Discovery Drilling installing MW-2, located west of the ARFF and existing ARFF well. Photo taken facing north.</p>  <p>Photo 2: Soil from each boring interval was individually bagged and labeled for storage and disposal, pending the receipt of analytical results.</p>	None.

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REVIEW BY (PM initial/date)

Reviewed By: *VEW* 2021.04.14  
 12:47:13 -08'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/12/21
REPORT NO.:	04
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
		 <p>Photo 3: Discovery Drilling advancing boring B-16, south from the ARFF. Photo taken looking west, towards the runway.</p>	
		 <p>Photo 4: Discovery Drilling advancing boring B-18, west from the ARFF and south from the generator building. Photo taken looking to the east.</p>	

## OTHER GENERAL OBSERVATIONS

Meetings Attended:	8:35 Daily safety meeting
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REVIEW BY (PM initial/date)  
 Reviewed By: 2021.04.14  
 12:47:28  
 -08'00"

PROJECT NO.:	103311-009
REPORT DATE:	3/12/21
REPORT NO.:	04
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT


PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

Attachments:	None.

---END---

*LIMITATIONS: The Shannon & Wilson field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Shannon & Wilson field representative and our acceptance of any non-conforming work or failure to reject any non-conforming work does not relieve the contractor from complying with its contract documents. Shannon & Wilson does not have the authority to direct the contractor's work. Any information provided by the Shannon & Wilson field inspector is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, construction site safety, quality of work, and adherence to the contract documents.*

REVIEW BY (PM initial/date)	
<small>Reviewed By</small> 	<small>2021.04.14</small> <small>12:47:44 -08'00'</small>

PROJECT NO.:	103311-009
REPORT DATE:	3/13/21
REPORT NO.:	05
SW FIELD REP.:	RLW, DHF
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

<b>PROJECT LOCATION</b>	<b>Cordova SREB Site Characterization</b>
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<b>REPORT SUBMITTED TO:</b>		<b>CONTRACTOR NAME AND CONTACT:</b>		<b>WEATHER &amp; TEMP.</b>	13 to 30°F and clear
Client	PDC Engineers, Inc.	General		<b>TIMES OF SITE VISITS:</b>	
CC	DOT&PF	Subcontractors for Environmental Services			
		Discovery Drilling		from	8:30 to 18:30
				from	to

## CONSTRUCTION OBSERVATIONS

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
1	Monitoring Well Installation and Soil Boring Drilling	7:00 Prepared gear and calibrated YSI. 8:30 DHF and RLW arrive on-site with Discovery Drilling. Conduct daily safety meeting. Calibrated PID. 9:00 Advanced boring B-TWP-7 and installed temporary well point TWP-7, located north from the ARFF building. 10:30 Advanced boring B-MW-4 and installed monitoring well MW-4, located east from the generator building and northwest from the ARFF. 12:15 Advanced B-TWP-6, located southeast from the ARFF and south from the buried heating oil tank. 13:30 Set up to begin purging temporary well point TWP-6. 14:40 Set up to begin purging temporary well point TWP-5. 15:50 Set up to begin purging temporary well point TWP-7. 17:15 Set up to begin developing monitoring well MW-3. 18:25 Clean up site and finish for day.	None.
2	Soil Field Screening and Sampling	Soil field-screening results ranged from 0.0 to 0.3 ppm. We collected six analytical samples from B-TWP-7, B-MW-4, and B-TWP-6. Soil samples were collected from the surface (approximately 0.0 to 2.0 feet below ground surface) and at the groundwater interface (approximately 5 to 7 feet bgs) for each boring. We collected a duplicate soil sample from B-MW-4 and from B-TWP-6 near the surface.	None.
3	Groundwater Sampling	We collected one groundwater sample from TWP-6, one sample plus a duplicate sample from TWP-5, and one sample from TWP-7. We allowed groundwater parameters to stabilize in all temporary wells before collecting samples. Discovery Drilling removed the temporary wells after we completed sampling. IDW generated from the TWP sampling is stored in individual 7.5 gallon buckets and are currently located inside the ARFF. Development water from MW-3 is stored outside in a 55 gallon drum.	None.

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REVIEW BY (PM initial/date)

Reviewed By:  2021.04.14  
14:44:30 -08'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/13/21
REPORT NO.:	05
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT


PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
4	Photographs	 <p>Photo 1: RLW logging a soil boring from B-MW-4. Photo taken facing south.</p>  <p>Photo 2: The completed flushmount monument for MW-4. Looking south towards the ARFF.</p>	None.

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REVIEW BY (PM initial/date)

Reviewed By  
 2021.04.14  
 14:44:45 -08'00'



PROJECT NO.:	103311-009
REPORT DATE:	3/13/21
REPORT NO.:	05
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
		 <p>Photo 3: RLW logging a soil boring from B-TWP-6, in front of the ARFF. Photo taken facing west towards the runway.</p>  <p>Photo 4: Collecting a depth-to-water measurement from TWP-5, east from the ARFF and buried heating oil tank. Photo taken facing west towards the runway.</p>	

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REVIEW BY (PM initial/date)


Reviewed By: *V&W* 2021.04.14  
 14:45:00 -08'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/13/21
REPORT NO.:	05
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)


NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
		 <p>Photo 5: RLW checking the progress of the MW-3 well development by collecting purgewater into a cup to observe the water turbidity.</p>	

## OTHER GENERAL OBSERVATIONS

Meetings Attended:	8:35 Daily safety meeting
Attachments:	None.

---END---

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REVIEW BY (PM initial/date)  
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 14:45:14  
 -08'00'


PROJECT NO.:	103311-009
REPORT DATE:	3/14/21
REPORT NO.:	06
SW FIELD REP.:	RLW, DHF
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

<b>PROJECT LOCATION</b>	<b>Cordova SREB Site Characterization</b>
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<b>REPORT SUBMITTED TO:</b>		<b>CONTRACTOR NAME AND CONTACT:</b>		<b>WEATHER &amp; TEMP.</b>	4 to 30°F and overcast
Client	PDC Engineers, Inc.	General		<b>TIMES OF SITE VISITS:</b>	
CC	DOT&PF	Subcontractors for Environmental Services			
		Discovery Drilling		from	8:45 to 17:30
				from	to

## CONSTRUCTION OBSERVATIONS

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
1	Monitoring Well Development and Sampling	<p>7:30 Prepared gear and calibrated YSI.</p> <p>8:45 DHF and RLW arrive on-site with Discovery Drilling. Conduct daily safety meeting.</p> <p>9:30 RLW begin purging MW-3 in preparation for sampling. DHF begin development of MW-2.</p> <p>11:20 DHF finish MW-2 development and RLW set up to begin purging MW-2. DHF begin MW-1 development.</p> <p>13:15 DHF finish MW-1 development and assist RLW with purging and sampling MW-1.</p> <p>14:15 Dispose of Macro-Core soil liners, PVC pipe, and other project-associated waste in dumpster at DOT&amp;PF maintenance station.</p> <p>14:30 DHF set up to begin development of MW-4.</p> <p>16:00 DHF finish MW-4 development and assist RLW with purging and sampling MW-4.</p> <p>17:25 Clean up site and finish for day.</p>	None.
2	Photographs	 <p>Photo 1: The monitoring well development set-up at MW-2, west from the ARFF. Photo taken facing west towards the runway.</p>	None.

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REVIEW BY (PM initial/date)

Reviewed By:  2021.04.14  
14:45:40 -08'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/14/21
REPORT NO.:	06
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
		 <p>Photo 2: We checked the progress of the monitoring well development by collecting samples of the water to compare the turbidity.</p>  <p>Photo 3: RLW purging MW-4. Photo taken facing north.</p>	

## OTHER GENERAL OBSERVATIONS

Meetings Attended:	8:45 Daily safety meeting
Attachments:	None.

---END---

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REVIEW BY (PM initial/date)

Reviewed By: *V&W* 2021.04.14  
 14:45:55 -08'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/15/21
REPORT NO.:	07
SW FIELD REP.:	RLW, DHF
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

<b>PROJECT LOCATION</b>	<b>Cordova SREB Site Characterization</b>
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REPORT SUBMITTED TO:		CONTRACTOR NAME AND CONTACT:		WEATHER & TEMP.	
Client	PDC Engineers, Inc.	General		35°F and snow	
CC	DOT&PF	Subcontractors for Environmental Services		TIMES OF SITE VISITS:	
		Discovery Drilling		from	12:00 to 16:00
				from	to

## CONSTRUCTION OBSERVATIONS

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
1	Airport Badging	<p>6:00 DHF called Robbie to discuss logistics for drilling inside the ARFF and airport badging. Robbie requested that DHF and RLW complete the badging process before drilling in the ARFF.</p> <p>7:00 DHF arrived at the DOT&amp;PF Maintenance Station to complete airport badging. RLW performs a QC of analytical samples and prepares samples for shipment.</p> <p>8:30 DHF left the Maintenance Station and returned to lodging to check site characterization samples and prepare for injection well closure activities. Calibrated the PID.</p> <p>10:30 RLW arrived at the Maintenance Station to complete airport badging.</p> <p>12:00 RLW completed airport badging and met DHF and drillers at the ARFF.</p>	None.
2	Injection Well Closure	<p>12:10 DHF and RLW conducted daily safety meeting with Discovery Drilling. The ARFF garage smells strongly of ammonia, likely from the de-icing truck. DHF screened the ARFF indoor air with the PID for ammonium. The PID recorded 32 ppm inside the shop (maintenance vehicles were still in the shop and door was closed). Once vehicles were removed and the garage door was open, the PID recorded 0 ppm.</p> <p>12:30 Begin drilling B-IW-19 at CR-IW-2, located on the west side of the ARFF. We observed a 2-inch diameter pipe below the drain cover that spanned the length of the concrete floor, about 4 inches. Below the concrete was a void approximately 1-foot in diameter and 6 feet deep. We did not observe any liquid in CR-IW-2. Discovery Drilling advanced a boring from 6 to 10 feet below ground surface. The fire truck is parked on this side of the building.</p> <p>12:45 Begin drilling B-IW-20 at CR-IW-1, located on the east side of the ARFF. The de-icing truck is kept on this side of the building and a reddish liquid was visible in the drain. CR-IW-2 is constructed similarly to CR-IW-1. Discovery Drilling advanced a boring from 6 to 10 feet below ground surface.</p> <p>14:00 Finish sampling the injection wells and begin site cleanup.</p> <p>16:00 Depart site and done for day.</p>	None.

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REVIEW BY (PM initial/date)



Reviewed By: 2021.04.14  
 14:46:16  
 -08'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/15/21
REPORT NO.:	07
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
3	Field-screening and Sample Summary	<p>We collected two field-screening readings and two analytical samples from each soil boring: one sample below the depth of injection well discharge at the bottom of the dry well (top of the soil boring at 6 feet below ground surface), and one at the groundwater interface at about 8 feet below ground surface. We collected one duplicate sample from B-IW-20 at about 6 feet below ground surface.</p> <p>Field-screening results for the west drain (B-IW-19) ranged from 23.7 ppm at the surface to 0 ppm at the groundwater interface. Results for the east drain (B-IW-20) exceeded the PID detection limit (&gt;15,000 ppm) for both samples. A strong odor was detected in this soil boring.</p>	
4	Photographs	 <p>Photo 1: Discovery Drilling at SB-IW-19 inside the west end of the ARFF.</p>  <p>Photo 2: The floor drains had two-inch pipe leading to a void below the building floor. The floor drain for CR-IW-1 (east building side) was completely filled with red-colored fluid.</p>	None.

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REVIEW BY (PM initial/date)


Reviewed By: 2021.04.14  
 14:46:33  
 -08'00'

PROJECT NO.:	103311-009
REPORT DATE:	3/15/21
REPORT NO.:	07
SW FIELD REP.:	DHF, RLW
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

PROJECT NAME/LOCATION	<b>Cordova SREB Site Characterization</b>
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## CONSTRUCTION OBSERVATIONS (continued)

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
		 <p>Photo 3: Investigation-derived waste included excess soil from the soil borings, monitoring well development water, monitoring well purgewater, and decontamination water. The drums and buckets are stored outside the north side of the ARFF on pallets.</p>	

## OTHER GENERAL OBSERVATIONS

Meetings Attended:	12:10 Daily safety meeting
Attachments:	None.

---END---

<p><i>LIMITATIONS: The Shannon &amp; Wilson field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Shannon &amp; Wilson field representative and our acceptance of any non-conforming work or failure to reject any non-conforming work does not relieve the contractor from complying with its contract documents. Shannon &amp; Wilson does not have the authority to direct the contractor's work. Any information provided by the Shannon &amp; Wilson field inspector is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, construction site safety, quality of work, and adherence to the contract documents.</i></p>	REVIEW BY (PM initial/date)
	<p>Reviewed By:  2021.04.14 14:46:47 -08'00'</p>

PROJECT NO.:	103311-009
REPORT DATE:	3/16/21
REPORT NO.:	08
SW FIELD REP.:	RLW, DHF
PERMIT NO.:	n/a

# DAILY FIELD ACTIVITY REPORT

<b>PROJECT LOCATION</b>	<b>Cordova SREB Site Characterization</b>
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<b>REPORT SUBMITTED TO:</b>		<b>CONTRACTOR NAME AND CONTACT:</b>		<b>WEATHER &amp; TEMP.</b>	36°F and snowing
Client	PDC Engineers, Inc.	General		<b>TIMES OF SITE VISITS:</b>	
CC	DOT&PF	Subcontractors for Environmental Services			
		Discovery Drilling		from	11:00 to 11:10
				from	to


## CONSTRUCTION OBSERVATIONS

NO.	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATIONS AND RECOMMENDATIONS TO OWNER	FURTHER ACTION RECOMMENDED TO OWNER
1	Sample Preparation	<p>6:00 Prepare soil and groundwater samples for shipment to SGS and TestAmerica laboratories. Pack equipment and gear for shipment to Fairbanks.</p> <p>8:00 RLW coordinate vehicle rental for travel from Anchorage to Fairbanks.</p> <p>11:00 Arrive at Cordova Airport cargo office and unload samples for shipment. DHF visit ARFF building to drop off PFAS sample bottles for Ryan to sample the test wells, and to leave the calibration gas on the desk in the ARFF garage for Robbie to pick up later.</p> <p>11:30 RLW emailed the waybill numbers for the samples to our laboratory point of contact to notify them of the sample arrival time for pickup.</p>	None.
2	Travel	<p>12:00 DHF and RLW return to cargo office with a second load of equipment and gear to ship to Fairbanks. Check in to flight departing from Cordova to Anchorage.</p> <p>12:30 Return airport badges.</p> <p>15:45 Arrive in Anchorage airport. Rent vehicle for return trip to Fairbanks.</p> <p>17:20 Arrive at lodging. We will depart for Fairbanks in the morning. Done for day.</p>	None.

## OTHER GENERAL OBSERVATIONS

Meetings Attended:	None.
Attachments:	None.

---END---

<i>LIMITATIONS: The Shannon &amp; Wilson field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Shannon &amp; Wilson field representative and our acceptance of any non-conforming work or failure to reject any non-conforming work does not relieve the contractor from complying with its contract documents. Shannon &amp; Wilson does not have the authority to direct the contractor's work. Any information provided by the Shannon &amp; Wilson field inspector is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, procedures, construction site safety, quality of work, and adherence to the contract documents.</i>	<b>REVIEW BY (PM initial/date)</b>
	Reviewed By  2021.04.14 14:47:54 -08'00'



## Appendix B

# Boring Logs

### CONTENTS

- Figure B-1 to B-19

# LOG OF GEOPROBE

Date Started	3/11/21	Location	Northeast of ARFF	Ground Elevation:	NA
Date Completed	3/11/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Gray, Poorly Graded Gravel with Sand; moist.	0.8		0		SB-9-1	
		Olive-brown to gray-brown, Poorly Graded Sand with Gravel; moist; silt from 2.0 to 2.8 feet bgs.						
5		Olive-brown, Poorly Graded Gravel with Sand; moist to 6.4 feet bgs, wet below.	5.0		0	During Drilling [K]	SB-9-2	5
10								10
15		BOTTOM OF BORING COMPLETED 3/11/2021	15.0					15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE WELL 103311-009.GPJ 21-20447.GPJ 4/14/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
  - 2" Plastic Tube with Soil Recovery
  - Ground Water Level ATD
- Run No.

Cordova Combined Maintenance Facility  
2021 Site Characterization  
Cordova Alaska

## LOG OF GEOPROBE B-09

103311-009

**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants

Figure B-1

# LOG OF GEOPROBE

Date Started	3/10/21	Location	North of ARFF	Ground Elevation:	NA
Date Completed	3/10/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Gray, Poorly Graded Gravel with Sand; moist; wood fragments at 3.7 feet bgs.		(Symbol: Gravel)	0		SB-10-1	
5		Dark brown to gray, Poorly Graded Sand with Silt to Poorly Graded Sand with Gravel; moist to 8.0 feet bgs, wet below.	5.0	(Symbol: Sand)	0	During Drilling (Symbol: Key)	SB-10-2	5
10		Gray, Poorly Graded Gravel with Sand; wet.	10.0	(Symbol: Gravel)				10
15		BOTTOM OF BORING COMPLETED 3/10/2021	15.0					15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE WELL 103311-009.GPJ 21-20447.GPJ 4/14/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
  - 2" Plastic Tube - No Soil Recovery
  - Ground Water Level ATD
- Run No.

Cordova Combined Maintenance Facility  
2021 Site Characterization  
Cordova Alaska

## LOG OF GEOPROBE B-10

103311-009

**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants

**Figure B-2**

# LOG OF GEOPROBE

Date Started	3/12/21	Location	Northwest from ARFF	Ground Elevation:	NA
Date Completed	3/12/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Olive-brown to gray-brown, <i>Poorly Graded Sand with Gravel to Poorly Graded Sand</i> ; moist.		●●●●●	0		SB-11-1	
5		Gray-brown, <i>Silty Sand</i> ; moist; yellow-brown silt laminations.	5.0	▬▬▬▬▬				5
		Gray to dark gray, <i>Poorly Graded Gravel with Sand</i> ; wet.	6.2	○●○●○●	0		SB-11-2	
10						During Drilling		10
15		BOTTOM OF BORING COMPLETED 3/12/2021	15.0					15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- |   |   |                                    |  |   |                        |
|---|---|------------------------------------|--|---|------------------------|
| 3 |   | 2" Plastic Tube - No Soil Recovery |  | ▽ | Ground Water Level ATD |
| 3 |   | 2" Plastic Tube with Soil Recovery |  |   |                        |
|   | ↓ | Run No.                            |  |   |                        |

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-11

103311-009

SHANNON & WILSON, INC.

Geotechnical and Environmental Consultants

Figure B-3

# LOG OF GEOPROBE

Date Started	3/10/21	Location	Northwest corner of SREB	Ground Elevation:	NA
Date Completed	3/10/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
5		Olive-gray to olive-brown, <i>Poorly Graded Sand with Gravel</i> ; moist; frozen 0.0 to 2.0 feet bgs; yellow brown laminations and little silt from 3.5 to 5.0 feet bgs.		0			SB-12-1	5
		Olive-brown, <i>Sandy Silt</i> ; moist.	5.5	6.1				
		Olive-gray to olive-brown, <i>Poorly Graded Sand to Poorly Graded Sand with Gravel</i> ; moist to 7.8 feet bgs, wet below.		4.5		During Drilling	SB-12-2	
10		Gray, <i>Poorly Graded Gravel with Sand</i> ; wet.	10.0					10
15		BOTTOM OF BORING COMPLETED 3/10/2021	15.0					15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- |   |                                    |   |                        |
|---|------------------------------------|---|------------------------|
| 3 | 2" Plastic Tube - No Soil Recovery |   |                        |
| 3 | 2" Plastic Tube with Soil Recovery | ▽ | Ground Water Level ATD |
|   | Run No.                            |   |                        |

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-12

103311-009

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

Figure B-4

# LOG OF GEOPROBE

Date Started	3/10/21	Location	Southwest corner of SREB	Ground Elevation:	NA
Date Completed	3/10/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description <i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Gray, Poorly Graded Gravel with Sand; moist.					SB-13-1	
		Olive-gray to olive-brown, Poorly Graded Sand to Poorly Graded Sand with Gravel; moist.	1.3		0			
		Olive, Silty Sand; moist.	5.7				SB-13-2	
		Olive-gray to olive-brown, Poorly Graded Sand to Poorly Graded Sand with Gravel; moist.	6.0		0			
		Gray, Poorly Graded Gravel; wet.	8.1			During Drilling		
		Olive-brown, Poorly Graded Sand; wet.	8.6					
		BOTTOM OF BORING COMPLETED 3/10/2021	15.0					

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE WELL 103311-009.GPJ 21-20447.GPJ 4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

- 2" Plastic Tube with Soil Recovery
  - 2" Plastic Tube - No Soil Recovery
  - Ground Water Level ATD
- Run No.

Cordova Combined Maintenance Facility  
2021 Site Characterization  
Cordova Alaska

## LOG OF GEOPROBE B-13

103311-009

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**Figure B-5**

# LOG OF GEOPROBE

Date Started	3/12/21	Location	West of HOT
Date Completed	3/12/21	Ground Elevation:	NA
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Discovery Drilling
		Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Gray-brown, Poorly Graded Gravel with Sand; moist.	1.3		1.3	During Drilling [K]	SB-14-1	
		Olive-brown, Poorly Graded Sand with Gravel; moist.	3.6					
5		Olive, Poorly Graded Gravel with Sand; moist to 7.7 feet bgs, wet below.	5.0					5
		Gray, Poorly Graded Sand to Poorly Graded Sand with Silt and Gravel; wet.	10.0		0		SB-14-2	
15		BOTTOM OF BORING COMPLETED 3/12/2021	15.0					15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

- 2" Plastic Tube - No Soil Recovery  
 2" Plastic Tube with Soil Recovery  
 Ground Water Level ATD  
 Run No.

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-14

103311-009

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

**Figure B-6**

# LOG OF GEOPROBE

Date Started	3/11/21	Location	Southwest corner of SREB	Ground Elevation:	NA
Date Completed	3/11/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
5		Olive-brown to olive-gray, Poorly Graded Gravel with Sand; moist to 8.1 feet bgs, wet below.		○	0		SB-15-1	5
10				○	0.2	During Drilling ▽	SB-15-2	10
15		BOTTOM OF BORING COMPLETED 3/11/2021	15.0					15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- |   |  |                                    |  |   |                        |
|---|--|------------------------------------|--|---|------------------------|
| 3 |  | 2" Plastic Tube - No Soil Recovery |  | ▽ | Ground Water Level ATD |
| 3 |  | 2" Plastic Tube with Soil Recovery |  |   | Run No.                |

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-15

103311-009

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Figure B-7



# LOG OF GEOPROBE

Date Started	3/12/21	Location	South From ARFF	Ground Elevation:	NA
Date Completed	3/12/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Olive, Poorly Graded Gravel with Sand; frozen to 1.8 feet bgs, moist below; wood fragments at 3.0 and 3.5 feet bgs.		○	0		SB-16-1	
5		Gray to olive-brown, Poorly Graded Sand with Gravel to Poorly Graded Sand; moist to 7.9 feet bgs, wet below.	5.0	●	0	During Drilling ▽	SB-16-2	5
10		Olive-brown, Poorly Graded Gravel with Sand; wet.	11.1	○				10
15		BOTTOM OF BORING COMPLETED 3/12/2021	15.0					15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE WELL 103311-009.GPJ 21-20447.GPJ 4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

- |   |                                    |   |                        |
|---|------------------------------------|---|------------------------|
| 3 | 2" Plastic Tube - No Soil Recovery |   |                        |
| 3 | 2" Plastic Tube with Soil Recovery | ▽ | Ground Water Level ATD |
|   | Run No.                            |   |                        |

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-16

103311-009

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**Figure B-8**

# LOG OF GEOPROBE

Date Started	3/12/21	Location	ARFF Southwest corner	Ground Elevation:	NA
Date Completed	3/12/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
5		Olive-brown, Poorly Graded Sand with Silt and Gravel; frozen to 3.0 feet bgs, moist below.	5.0	•••••	0		SB-17-1	5
		Olive-brown, Poorly Graded Gravel with Silt and Sand; moist to 8.3 feet bgs, wet below.	5.0	○●○●○●	0		SB-17-2	
10						During Drilling ▽		10
15		BOTTOM OF BORING COMPLETED 3/12/2021	15.0					15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE WELL 103311-009.GPJ 21-20447.GPJ 4/14/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- |   |  |                                    |  |  |                                    |  |   |                        |
|---|--|------------------------------------|--|--|------------------------------------|--|---|------------------------|
| 3 |  | 2" Plastic Tube - No Soil Recovery |  |  | 2" Plastic Tube with Soil Recovery |  | ▽ | Ground Water Level ATD |
|   |  | Run No.                            |  |  |                                    |  |   |                        |

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-17

103311-009

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Figure B-9

# LOG OF GEOPROBE

Date Started	3/12/21	Location	West from ARFF AST	Ground Elevation:	NA
Date Completed	3/12/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
5		Gray-brown to olive-brown, Poorly Graded Sand to Poorly Graded Sand with Gravel; moist to 8.0 feet bgs, wet below.			0		SB-18-1	5
10		Olive, Poorly Graded Gravel with Silt and Sand; wet.	10.0		0	During Drilling	SB-18-2	10
15		BOTTOM OF BORING COMPLETED 3/12/2021	15.0					15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE WELL 103311-009.GPJ 21-20447.GPJ 4/14/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- |   |  |                                    |  |  |                                    |  |   |                        |
|---|--|------------------------------------|--|--|------------------------------------|--|---|------------------------|
| 3 |  | 2" Plastic Tube - No Soil Recovery |  |  | 2" Plastic Tube with Soil Recovery |  | ▽ | Ground Water Level ATD |
|   |  | Run No.                            |  |  |                                    |  |   |                        |

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-18

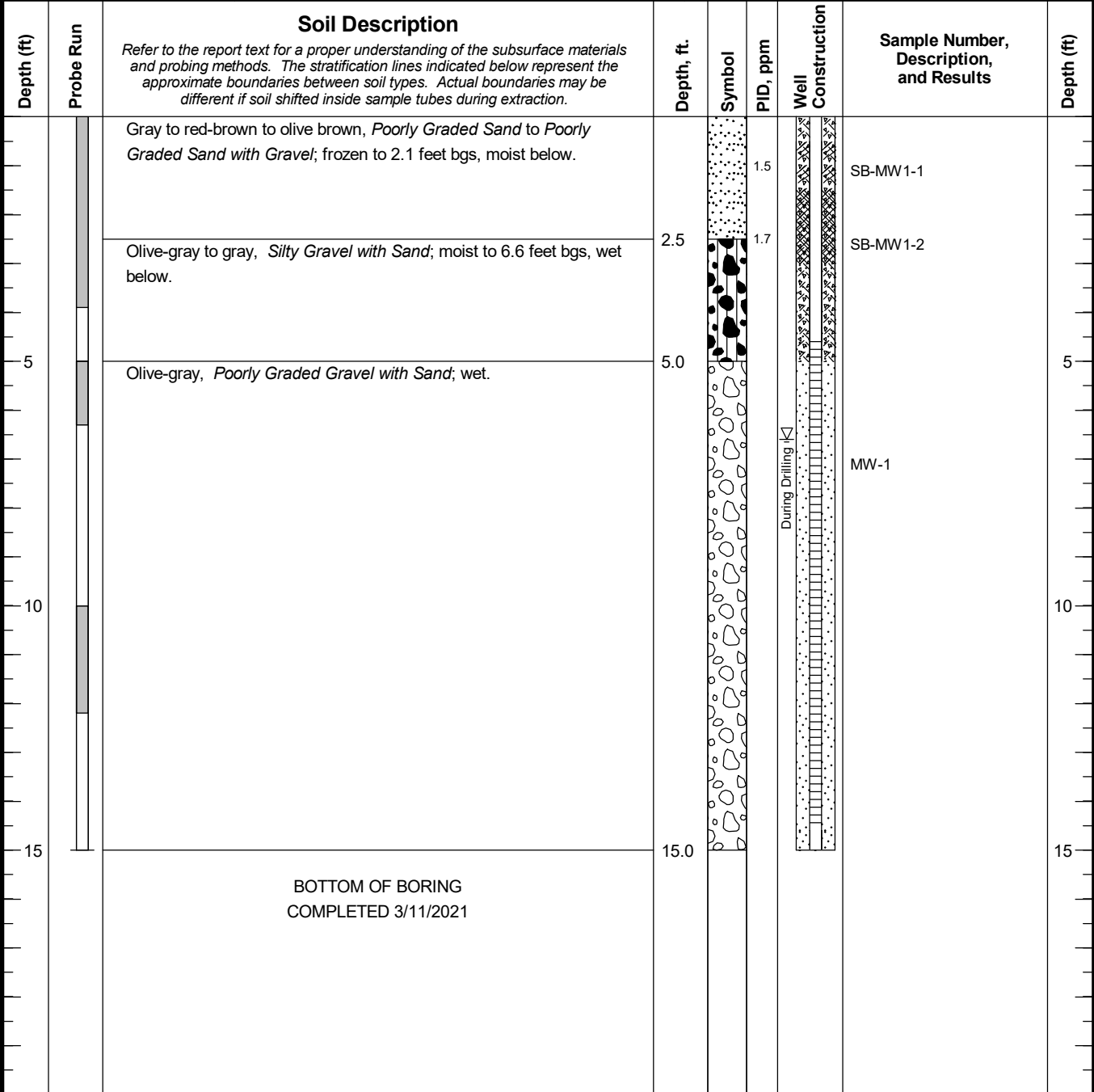
103311-009

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**Figure B-10**

# LOG OF GEOPROBE

Date Started	3/11/21	Location	Northeast from ARFF	Ground Elevation:	NA
Date Completed	3/11/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches



Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

2" Plastic Tube with Soil Recovery Run No.	Piezometer Screen and Sand Filter	Ground Water Level ATD
---	-----------------------------------	------------------------

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-MW-1

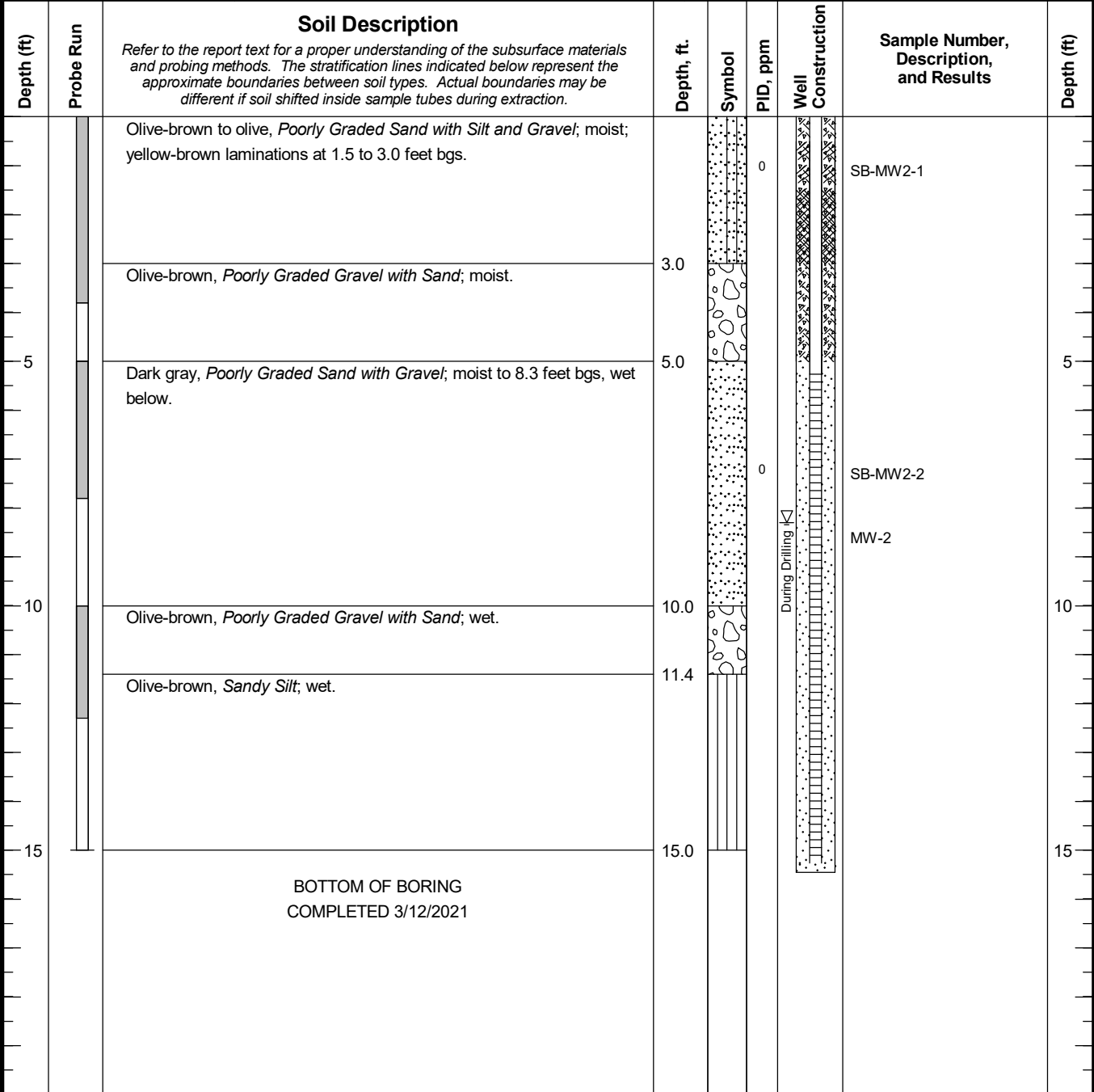
103311-009

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

**Figure B-11**

# LOG OF GEOPROBE

Date Started	3/12/21	Location	West from ARFF
Date Completed	3/12/21	Ground Elevation:	NA
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Discovery Drilling
		Hole Diameter:	2.5 inches







Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

 2" Plastic Tube with Soil Recovery Run No.	 Piezometer Screen and Sand Filter
 2" Plastic Tube - No Soil Recovery	 Ground Water Level ATD

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-MW-2

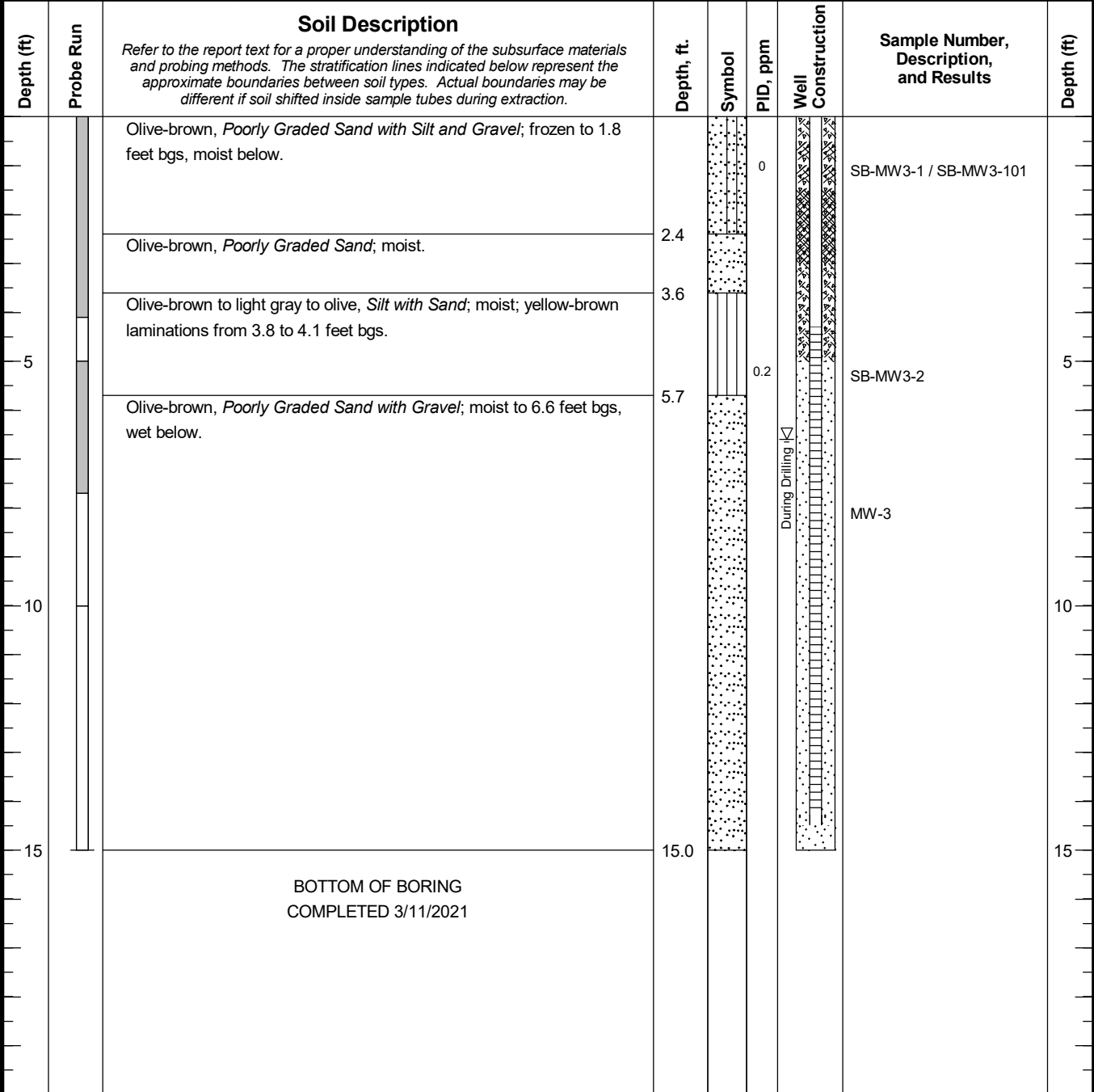
103311-009

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

**Figure B-12**

# LOG OF GEOPROBE

Date Started	3/11/21	Location	Southeast corner of SERB	Ground Elevation:	NA
Date Completed	3/11/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2.5 inches



Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

2" Plastic Tube with Soil Recovery	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Ground Water Level ATD

Run No.

Cordova Combined Maintenance Facility  
2021 Site Characterization  
Cordova Alaska

## LOG OF GEOPROBE B-MW-3

103311-009

**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants

**Figure B-13**

# LOG OF GEOPROBE

Date Started	3/13/21	Location	West of Generator Building	Ground Elevation:	NA
Date Completed	3/13/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	2.5 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Olive-gray, <i>Poorly Graded Sand with Gravel</i> ; moist; wood fragments at 1.3 to 1.5 feet bgs.			0.1		SB-MW4-1 / SB-MW4-101	
		Olive-gray, <i>Sandy Silt</i> ; moist.	2.2					
		Olive-gray, <i>Poorly Graded Sand with Silt</i> ; moist.	2.7					
5		Olive-brown, <i>Sandy Silt with Gravel</i> ; wet, perched water.	5.0					5
		Dark gray, <i>Poorly Graded Gravel with Sand</i> ; moist, wet below 7.1 feet bgs.	5.8				SB-MW4-2	
					0		MW-4	
10								10
15			15.0					15
		BOTTOM OF BORING COMPLETED 3/13/2021						

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

 2" Plastic Tube with Soil Recovery Run No.	 2" Plastic Tube - No Soil Recovery	 Piezometer Screen and Sand Filter	
 Ground Water Level ATD			

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-MW-4

103311-009

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

**Figure B-14**

# LOG OF GEOPROBE

Date Started	3/12/21	Location	Southeast corner of ARFF	Ground Elevation:	NA
Date Completed	3/12/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches







Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

 2" Plastic Tube with Soil Recovery Run No.	 Piezometer Screen and Sand Filter
 2" Plastic Tube - No Soil Recovery	 Ground Water Level ATD

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-TWP-5

103311-009

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

**Figure B-15**



# LOG OF GEOPROBE

Date Started	3/13/21	Location	South from ARFF
Date Completed	3/13/21	Ground Elevation:	NA
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Discovery Drilling
		Hole Diameter:	1.5 inches





Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Gray, Poorly Graded Sand with Gravel; frozen.			0		SB-TWP6-1 / SB-TWP6-101	
		Olive-brown, Poorly Graded Gravel with Sand; moist.	1.5					
5		Olive-gray, Poorly Graded Sand with Gravel; moist, wet below 8.3 feet bgs.	5.0		0		SB-TWP6-2	5
		Gray, Poorly Graded Gravel to Poorly Graded Gravel with Sand; wet.	8.5					
10		Gray, Poorly Graded Sand with Gravel; wet.	12.7				TWP-6	10
		BOTTOM OF BORING COMPLETED 3/13/2021	15.0					

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

 2" Plastic Tube with Soil Recovery Run No.	 Piezometer Screen and Sand Filter
 2" Plastic Tube - No Soil Recovery	 Ground Water Level ATD

Cordova Combined Maintenance Facility  
 2021 Site Characterization  
 Cordova Alaska

## LOG OF GEOPROBE B-TWP-6

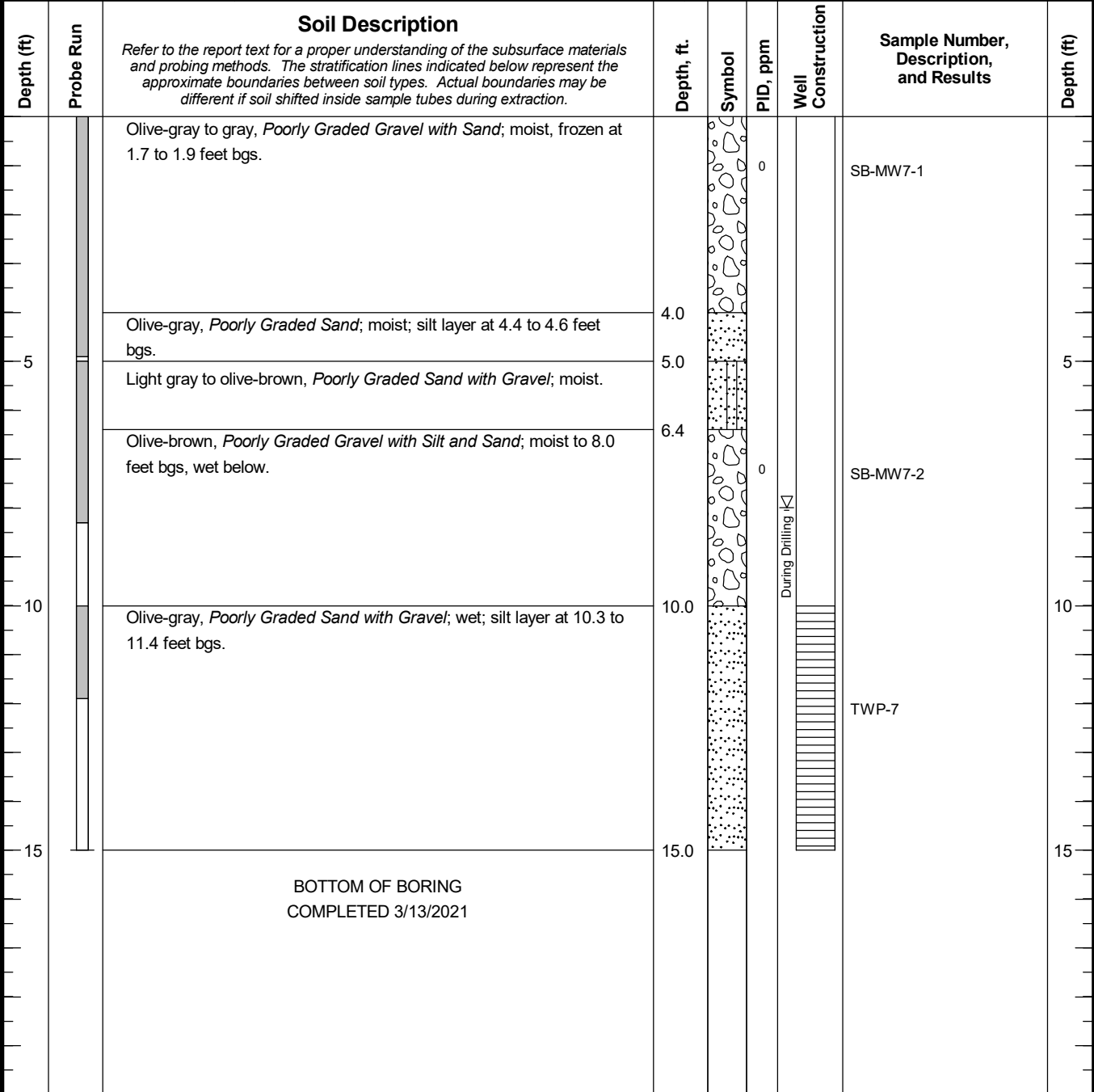
103311-009

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

**Figure B-16**

# LOG OF GEOPROBE

Date Started	3/13/21	Location	Northeast of ARFF
Date Completed	3/13/21	Ground Elevation:	NA
Total Depth (ft)	15.0	Typical Run Length	5 feet
		Drilling Company:	Discovery Drilling
		Hole Diameter:	1.5 inches



Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE\_WELL\_103311-009.GPJ\_21-20447.GPJ\_4/14/21

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

2" Plastic Tube with Soil Recovery	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Ground Water Level ATD

Run No. 3

Cordova Combined Maintenance Facility  
2021 Site Characterization  
Cordova Alaska

**LOG OF GEOPROBE B-TWP-7**

103311-009

**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants

**Figure B-17**

# LOG OF GEOPROBE

Date Started	3/15/21	Location	Injection Well CR-ARFF-1	Ground Elevation:	NA
Date Completed	3/15/21			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Open pipe.						
5								5
		Brown, Poorly Graded Sand; moist.	6.0	●	23.7		SB-IW 19-1	
		Gray, Poorly Graded Gravel with Sand; moist to 8.3 feet bgs, wet below.	6.6	○	0		SB-IW 19-2	
10			10.0			During Drilling ∇		10
		BOTTOM OF BORING COMPLETED 3/15/2021						
15								15

Typ: FLG  
 Rev: SKD  
 Log:  
 GEOPROBE WELL 103311-009.GPJ 21-20447.GPJ 4/14/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
  - 2" Plastic Tube - No Soil Recovery
  - Ground Water Level ATD
- Run No.

Cordova Combined Maintenance Facility 2021 Site Characterization Cordova Alaska	
<h2 style="margin: 0;">LOG OF GEOPROBE B-IW-19</h2>	
	103311-009
<b>SHANNON &amp; WILSON, INC.</b> Geotechnical and Environmental Consultants	<b>Figure B-18</b>

# LOG OF GEOPROBE

Date Started	3/12/21	Location	Injection Well CR-ARFF-2	Ground Elevation:	NA
Date Completed	3/12/21			Typical Run Length	5 feet
Total Depth (ft)	10.0	Drilling Company:	Discovery Drilling	Hole Diameter:	1.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Open pipe.						
5								5
	1	Gray, Poorly Graded Sand; wet; strong ammonia odor.	6.0	●	5000		SB-IW20-1 / SB-IW20-101	
		Gray to yellow-brown, Poorly Graded Gravel with Sand; wet; strong ammonia odor.	6.9	○	5000		SB-IW20-2	
10			10.0					10
		BOTTOM OF BORING COMPLETED 3/15/2021						
15								15

Typ: FLG  
Rev: SKD  
Log:

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
  - 2" Plastic Tube - No Soil Recovery
- Run No.

Cordova Combined Maintenance Facility  
2021 Site Characterization  
Cordova Alaska

## LOG OF GEOPROBE B-IW-20

103311-009

**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants

**Figure B-19**

GEOPROBE WELL 103311-009.GPJ, 21-20447.GPJ, 4/14/21

## Appendix C

## Laboratory Reports and LDRCs

## CONTENTS

- SGS WO 1211155
- LDRC for WO 1211155
- SGS WO 1211171
- LDRC for WO 1211171
- SGS WO 1211172
- LDRC for WO 1211172
- TestAmerica WO 320-71351-1
- LDRC for WO 320-71351-1
- TestAmerica WO 320-71353 Revision 1
- LDRC for WO 320-71353 Revision 1
- TestAmerica WO 320-71360
- LDRC for WO 320-71360
- Test America WO 320-72120-1
- LDRC for WO 320-72120-1
- SGS WO 1211478
- LDRC for WO 1211478
- SGS WO 1211479
- LDRC for WO 1211479



## Laboratory Report of Analysis

To: Shannon & Wilson-Fairbanks  
5430 Fairbanks Street, Suite 3  
Anchorage, AK 99518  
907-479-0600

Report Number: **1211155**

Client Project: **103311-009 Cordova SREB**

Dear Valerie Webb,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jennifer at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,  
SGS North America Inc.

Stephen C. Ede

2021.03.30

16:18:40 -08'00'

Jennifer Dawkins  
Project Manager  
Jennifer.Dawkins@sgs.com

Date

### Case Narrative

SGS Client: **Shannon & Wilson-Fairbanks**  
SGS Project: **1211155**  
Project Name/Site: **103311-009 Cordova SREB**  
Project Contact: **Valerie Webb**

Refer to sample receipt form for information on sample condition.

#### **LCS for HBN 1817098 [VXX/36892 (1603750) LCS**

8260D - LCS recovery for chloromethane does not meet QC criteria. The associated sample concentrations for this analyte are less than the LOQ.

\*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 03/30/2021 11:10:10AM

### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.



### Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
MW-4	1211155001	03/14/2021	03/17/2021	Water (Surface, Eff., Ground)
EB-4	1211155002	03/14/2021	03/17/2021	Water (Surface, Eff., Ground)
MW-1	1211155003	03/14/2021	03/17/2021	Water (Surface, Eff., Ground)
MW-2	1211155004	03/14/2021	03/17/2021	Water (Surface, Eff., Ground)
MW-102	1211155005	03/14/2021	03/17/2021	Water (Surface, Eff., Ground)
MW-3	1211155006	03/14/2021	03/17/2021	Water (Surface, Eff., Ground)
TWP-7	1211155007	03/13/2021	03/17/2021	Water (Surface, Eff., Ground)
TWP-5	1211155008	03/13/2021	03/17/2021	Water (Surface, Eff., Ground)
TWP-105	1211155009	03/13/2021	03/17/2021	Water (Surface, Eff., Ground)
TWP-6	1211155010	03/13/2021	03/17/2021	Water (Surface, Eff., Ground)
Trip Blank	1211155011	03/13/2021	03/17/2021	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds (W) FULL

Print Date: 03/30/2021 11:10:15AM

### Detectable Results Summary

Client Sample ID: <b>MW-4</b>			
Lab Sample ID: 1211155001	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
<b>Volatile GC/MS</b>	Chloromethane	0.650J	ug/L
Client Sample ID: <b>EB-4</b>			
Lab Sample ID: 1211155002	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
<b>Semivolatile Organic Fuels</b>	Diesel Range Organics	0.188J	mg/L
	Residual Range Organics	0.172J	mg/L
Client Sample ID: <b>MW-2</b>			
Lab Sample ID: 1211155004	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
<b>Semivolatile Organic Fuels</b>	Residual Range Organics	0.151J	mg/L
Client Sample ID: <b>MW-102</b>			
Lab Sample ID: 1211155005	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
<b>Semivolatile Organic Fuels</b>	Residual Range Organics	0.172J	mg/L
Client Sample ID: <b>MW-3</b>			
Lab Sample ID: 1211155006	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
<b>Volatile Fuels</b>	Gasoline Range Organics	0.0392J	mg/L
<b>Volatile GC/MS</b>	Chloromethane	0.730J	ug/L
Client Sample ID: <b>TWP-5</b>			
Lab Sample ID: 1211155008	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
<b>Semivolatile Organic Fuels</b>	Diesel Range Organics	0.237J	mg/L
	Residual Range Organics	0.224J	mg/L
<b>Volatile GC/MS</b>	Trichlorofluoromethane	0.350J	ug/L
Client Sample ID: <b>TWP-105</b>			
Lab Sample ID: 1211155009	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
<b>Semivolatile Organic Fuels</b>	Diesel Range Organics	0.220J	mg/L
	Residual Range Organics	0.173J	mg/L
<b>Volatile GC/MS</b>	Trichlorofluoromethane	0.350J	ug/L
Client Sample ID: <b>TWP-6</b>			
Lab Sample ID: 1211155010	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
<b>Semivolatile Organic Fuels</b>	Diesel Range Organics	0.260J	mg/L
	Residual Range Organics	0.214J	mg/L
Client Sample ID: <b>Trip Blank</b>			
Lab Sample ID: 1211155011	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
<b>Volatile Fuels</b>	Gasoline Range Organics	0.0313J	mg/L



Results of MW-4

Client Sample ID: MW-4
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155001
Lab Project ID: 1211155

Collection Date: 03/14/21 16:43
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/22/21 20:57
Container ID: 1211155001-A
Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/22/21 20:57
Container ID: 1211155001-A
Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

## Results of MW-4

Client Sample ID: **MW-4**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155001  
 Lab Project ID: 1211155

Collection Date: 03/14/21 16:43  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		03/19/21 20:32
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	94.1	50-150		%	1		03/19/21 20:32

## Batch Information

Analytical Batch: VFC15521  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/19/21 20:32  
 Container ID: 1211155001-C

Prep Batch: VXX36885  
 Prep Method: SW5030B  
 Prep Date/Time: 03/19/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



Results of MW-4

Client Sample ID: MW-4
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155001
Lab Project ID: 1211155

Collection Date: 03/14/21 16:43
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-4

Client Sample ID: MW-4
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155001
Lab Project ID: 1211155

Collection Date: 03/14/21 16:43
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

## Results of MW-4

Client Sample ID: **MW-4**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155001  
Lab Project ID: 1211155

Collection Date: 03/14/21 16:43  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 19:14  
Container ID: 1211155001-F

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of **EB-4**

Client Sample ID: **EB-4**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155002  
Lab Project ID: 1211155

Collection Date: 03/14/21 16:53  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.188 J	0.588	0.176	mg/L	1		03/22/21 21:07

**Surrogates**

5a Androstane (surr)	85.1	50-150		%	1		03/22/21 21:07
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**Batch Information**

Analytical Batch: XFC15879  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/22/21 21:07  
Container ID: 1211155002-A

Prep Batch: XXX44537  
Prep Method: SW3520C  
Prep Date/Time: 03/18/21 16:46  
Prep Initial Wt./Vol.: 255 mL  
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.172 J	0.490	0.147	mg/L	1		03/22/21 21:07

**Surrogates**

n-Triacontane-d62 (surr)	93.2	50-150		%	1		03/22/21 21:07
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**Batch Information**

Analytical Batch: XFC15879  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/22/21 21:07  
Container ID: 1211155002-A

Prep Batch: XXX44537  
Prep Method: SW3520C  
Prep Date/Time: 03/18/21 16:46  
Prep Initial Wt./Vol.: 255 mL  
Prep Extract Vol: 1 mL





Results of **EB-4**

Client Sample ID: **EB-4**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155002  
Lab Project ID: 1211155

Collection Date: 03/14/21 16:53  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		03/19/21 20:49
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	91.4	50-150		%	1		03/19/21 20:49

**Batch Information**

Analytical Batch: VFC15521  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/19/21 20:49  
Container ID: 1211155002-C

Prep Batch: VXX36885  
Prep Method: SW5030B  
Prep Date/Time: 03/19/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of EB-4

Client Sample ID: EB-4
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155002
Lab Project ID: 1211155

Collection Date: 03/14/21 16:53
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of EB-4

Client Sample ID: EB-4
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155002
Lab Project ID: 1211155

Collection Date: 03/14/21 16:53
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of EB-4**

Client Sample ID: **EB-4**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155002  
Lab Project ID: 1211155

Collection Date: 03/14/21 16:53  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 19:30  
Container ID: 1211155002-F

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of MW-1

Client Sample ID: MW-1
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155003
Lab Project ID: 1211155

Collection Date: 03/14/21 14:06
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/22/21 21:17
Container ID: 1211155003-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/22/21 21:17
Container ID: 1211155003-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL



**Results of MW-1**

Client Sample ID: **MW-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155003  
Lab Project ID: 1211155

Collection Date: 03/14/21 14:06  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		03/19/21 21:07
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	91.6	50-150		%	1		03/19/21 21:07

**Batch Information**

Analytical Batch: VFC15521  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/19/21 21:07  
Container ID: 1211155003-C

Prep Batch: VXX36885  
Prep Method: SW5030B  
Prep Date/Time: 03/19/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of MW-1

Client Sample ID: MW-1
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155003
Lab Project ID: 1211155

Collection Date: 03/14/21 14:06
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of MW-1**

Client Sample ID: **MW-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155003  
 Lab Project ID: 1211155

Collection Date: 03/14/21 14:06  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Chloromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		03/22/21 19:46
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		03/22/21 19:46
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Freon-113	5.00 U	10.0	3.10	ug/L	1		03/22/21 19:46
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		03/22/21 19:46
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		03/22/21 19:46
Naphthalene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
o-Xylene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		03/22/21 19:46
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Styrene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Toluene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 19:46
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		03/22/21 19:46
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		03/22/21 19:46
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		03/22/21 19:46
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	90.2	81-118		%	1		03/22/21 19:46
4-Bromofluorobenzene (surr)	99.7	85-114		%	1		03/22/21 19:46
Toluene-d8 (surr)	105	89-112		%	1		03/22/21 19:46





**Results of MW-1**

Client Sample ID: **MW-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155003  
Lab Project ID: 1211155

Collection Date: 03/14/21 14:06  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 19:46  
Container ID: 1211155003-F

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of MW-2

Client Sample ID: MW-2
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155004
Lab Project ID: 1211155

Collection Date: 03/14/21 12:07
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/22/21 21:27
Container ID: 1211155004-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/22/21 21:27
Container ID: 1211155004-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL



Results of MW-2

Client Sample ID: MW-2
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155004
Lab Project ID: 1211155

Collection Date: 03/14/21 12:07
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Gasoline Range Organics and 4-Bromofluorobenzene (surr).

Batch Information

Analytical Batch: VFC15521
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 03/19/21 21:25
Container ID: 1211155004-C

Prep Batch: VXX36885
Prep Method: SW5030B
Prep Date/Time: 03/19/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-2

Client Sample ID: MW-2
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155004
Lab Project ID: 1211155

Collection Date: 03/14/21 12:07
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



### Results of MW-2

Client Sample ID: **MW-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155004  
 Lab Project ID: 1211155

Collection Date: 03/14/21 12:07  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Chloromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		03/22/21 20:02
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		03/22/21 20:02
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Freon-113	5.00 U	10.0	3.10	ug/L	1		03/22/21 20:02
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		03/22/21 20:02
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		03/22/21 20:02
Naphthalene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
o-Xylene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		03/22/21 20:02
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Styrene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Toluene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 20:02
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		03/22/21 20:02
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		03/22/21 20:02
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		03/22/21 20:02
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	90.1	81-118		%	1		03/22/21 20:02
4-Bromofluorobenzene (surr)	99.9	85-114		%	1		03/22/21 20:02
Toluene-d8 (surr)	105	89-112		%	1		03/22/21 20:02

## Results of MW-2

Client Sample ID: **MW-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155004  
Lab Project ID: 1211155

Collection Date: 03/14/21 12:07  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 20:02  
Container ID: 1211155004-F

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of MW-102

Client Sample ID: MW-102
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155005
Lab Project ID: 1211155

Collection Date: 03/14/21 11:57
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 0.306 U, 0.612, 0.184, mg/L, 1, 03/22/21 21:36

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 98, 50-150, %, 1, 03/22/21 21:36

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/22/21 21:36
Container ID: 1211155005-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 0.172 J, 0.510, 0.153, mg/L, 1, 03/22/21 21:36

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 106, 50-150, %, 1, 03/22/21 21:36

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/22/21 21:36
Container ID: 1211155005-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

## Results of MW-102

Client Sample ID: **MW-102**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155005  
 Lab Project ID: 1211155

Collection Date: 03/14/21 11:57  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		03/19/21 21:42
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	89.5	50-150		%	1		03/19/21 21:42

## Batch Information

Analytical Batch: VFC15521  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/19/21 21:42  
 Container ID: 1211155005-C

Prep Batch: VXX36885  
 Prep Method: SW5030B  
 Prep Date/Time: 03/19/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL





Results of MW-102

Client Sample ID: MW-102
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155005
Lab Project ID: 1211155

Collection Date: 03/14/21 11:57
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-102

Client Sample ID: MW-102
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155005
Lab Project ID: 1211155

Collection Date: 03/14/21 11:57
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of MW-102**

Client Sample ID: **MW-102**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155005  
Lab Project ID: 1211155

Collection Date: 03/14/21 11:57  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 20:18  
Container ID: 1211155005-F

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of MW-3

Client Sample ID: MW-3
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155006
Lab Project ID: 1211155

Collection Date: 03/14/21 10:09
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 0.288 U, 0.577, 0.173, mg/L, 1, 03/22/21 21:46

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 84.5, 50-150, %, 1, 03/22/21 21:46

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/22/21 21:46
Container ID: 1211155006-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 0.240 U, 0.481, 0.144, mg/L, 1, 03/22/21 21:46

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 93.6, 50-150, %, 1, 03/22/21 21:46

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/22/21 21:46
Container ID: 1211155006-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



Results of MW-3

Client Sample ID: MW-3
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155006
Lab Project ID: 1211155

Collection Date: 03/14/21 10:09
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 7 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Gasoline Range Organics and 4-Bromofluorobenzene (surr).

Batch Information

Analytical Batch: VFC15521
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 03/19/21 22:00
Container ID: 1211155006-C

Prep Batch: VXX36885
Prep Method: SW5030B
Prep Date/Time: 03/19/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-3

Client Sample ID: MW-3
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155006
Lab Project ID: 1211155

Collection Date: 03/14/21 10:09
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-3

Client Sample ID: MW-3
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155006
Lab Project ID: 1211155

Collection Date: 03/14/21 10:09
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of MW-3**

Client Sample ID: **MW-3**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155006  
Lab Project ID: 1211155

Collection Date: 03/14/21 10:09  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 20:34  
Container ID: 1211155006-F

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL





Results of TWP-7

Client Sample ID: TWP-7
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155007
Lab Project ID: 1211155

Collection Date: 03/13/21 16:43
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/22/21 21:56
Container ID: 1211155007-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/22/21 21:56
Container ID: 1211155007-A

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

## Results of TWP-7

Client Sample ID: **TWP-7**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155007  
 Lab Project ID: 1211155

Collection Date: 03/13/21 16:43  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		03/19/21 22:17
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	87.3	50-150		%	1		03/19/21 22:17

## Batch Information

Analytical Batch: VFC15521  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/19/21 22:17  
 Container ID: 1211155007-C

Prep Batch: VXX36885  
 Prep Method: SW5030B  
 Prep Date/Time: 03/19/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



Results of TWP-7

Client Sample ID: TWP-7
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155007
Lab Project ID: 1211155

Collection Date: 03/13/21 16:43
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of TWP-7

Client Sample ID: TWP-7
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155007
Lab Project ID: 1211155

Collection Date: 03/13/21 16:43
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of TWP-7**

Client Sample ID: **TWP-7**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155007  
Lab Project ID: 1211155

Collection Date: 03/13/21 16:43  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 20:50  
Container ID: 1211155007-F

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of TWP-5

Client Sample ID: TWP-5
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155008
Lab Project ID: 1211155

Collection Date: 03/13/21 15:12
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate values.

Batch Information

Analytical Batch: XMS12537
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 03/23/21 01:16
Container ID: 1211155008-A

Prep Batch: XXX44534
Prep Method: SW3535A
Prep Date/Time: 03/18/21 11:00
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



Results of TWP-5

Client Sample ID: TWP-5
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155008
Lab Project ID: 1211155

Collection Date: 03/13/21 15:12
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/22/21 22:06
Container ID: 1211155008-C
Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/22/21 22:06
Container ID: 1211155008-C
Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

## Results of TWP-5

Client Sample ID: **TWP-5**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155008  
 Lab Project ID: 1211155

Collection Date: 03/13/21 15:12  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		03/19/21 22:35
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	85.8	50-150		%	1		03/19/21 22:35

## Batch Information

Analytical Batch: VFC15521  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/19/21 22:35  
 Container ID: 1211155008-E

Prep Batch: VXX36885  
 Prep Method: SW5030B  
 Prep Date/Time: 03/19/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL





Results of TWP-5

Client Sample ID: TWP-5
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155008
Lab Project ID: 1211155

Collection Date: 03/13/21 15:12
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



### Results of TWP-5

Client Sample ID: **TWP-5**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155008  
 Lab Project ID: 1211155

Collection Date: 03/13/21 15:12  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Chloromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		03/22/21 21:06
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		03/22/21 21:06
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Freon-113	5.00 U	10.0	3.10	ug/L	1		03/22/21 21:06
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		03/22/21 21:06
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		03/22/21 21:06
Naphthalene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
o-Xylene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		03/22/21 21:06
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Styrene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Toluene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:06
Trichlorofluoromethane	0.350 J	1.00	0.310	ug/L	1		03/22/21 21:06
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		03/22/21 21:06
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		03/22/21 21:06
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		03/22/21 21:06
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	91	81-118		%	1		03/22/21 21:06
4-Bromofluorobenzene (surr)	98.9	85-114		%	1		03/22/21 21:06
Toluene-d8 (surr)	104	89-112		%	1		03/22/21 21:06

## Results of TWP-5

Client Sample ID: **TWP-5**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155008  
Lab Project ID: 1211155

Collection Date: 03/13/21 15:12  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 21:06  
Container ID: 1211155008-H

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of TWP-105

Client Sample ID: TWP-105
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155009
Lab Project ID: 1211155

Collection Date: 03/13/21 15:02
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

Batch Information

Analytical Batch: XMS12537
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 03/23/21 01:36
Container ID: 1211155009-A

Prep Batch: XXX44534
Prep Method: SW3535A
Prep Date/Time: 03/18/21 11:00
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



Results of TWP-105

Client Sample ID: TWP-105
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155009
Lab Project ID: 1211155

Collection Date: 03/13/21 15:02
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/22/21 22:16
Container ID: 1211155009-C
Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/22/21 22:16
Container ID: 1211155009-C
Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



**Results of TWP-105**

Client Sample ID: **TWP-105**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155009  
Lab Project ID: 1211155

Collection Date: 03/13/21 15:02  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		03/19/21 22:53
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	84.8	50-150		%	1		03/19/21 22:53

**Batch Information**

Analytical Batch: VFC15521  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/19/21 22:53  
Container ID: 1211155009-E

Prep Batch: VXX36885  
Prep Method: SW5030B  
Prep Date/Time: 03/19/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of TWP-105

Client Sample ID: TWP-105
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155009
Lab Project ID: 1211155

Collection Date: 03/13/21 15:02
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of TWP-105

Client Sample ID: TWP-105
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155009
Lab Project ID: 1211155

Collection Date: 03/13/21 15:02
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



## Results of TWP-105

Client Sample ID: **TWP-105**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155009  
Lab Project ID: 1211155

Collection Date: 03/13/21 15:02  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 21:22  
Container ID: 1211155009-H

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



### Results of TWP-6

Client Sample ID: **TWP-6**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155010  
 Lab Project ID: 1211155

Collection Date: 03/13/21 14:20  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
2-Methylnaphthalene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Acenaphthene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Acenaphthylene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Anthracene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Benzo(a)Anthracene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Benzo[a]pyrene	0.00980 U	0.0196	0.00608	ug/L	1		03/23/21 01:57
Benzo[b]Fluoranthene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Benzo[g,h,i]perylene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Benzo[k]fluoranthene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Chrysene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Dibenzo[a,h]anthracene	0.00980 U	0.0196	0.00608	ug/L	1		03/23/21 01:57
Fluoranthene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Fluorene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Indeno[1,2,3-c,d] pyrene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Naphthalene	0.0490 U	0.0980	0.0304	ug/L	1		03/23/21 01:57
Phenanthrene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
Pyrene	0.0245 U	0.0490	0.0147	ug/L	1		03/23/21 01:57
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	58.8	42-86		%	1		03/23/21 01:57
Fluoranthene-d10 (surr)	75.1	50-97		%	1		03/23/21 01:57

### Batch Information

Analytical Batch: XMS12537  
 Analytical Method: 8270D SIM LV (PAH)  
 Analyst: LAW  
 Analytical Date/Time: 03/23/21 01:57  
 Container ID: 1211155010-A

Prep Batch: XXX44534  
 Prep Method: SW3535A  
 Prep Date/Time: 03/18/21 11:00  
 Prep Initial Wt./Vol.: 255 mL  
 Prep Extract Vol: 1 mL



Results of TWP-6

Client Sample ID: TWP-6
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155010
Lab Project ID: 1211155

Collection Date: 03/13/21 14:20
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 0.260 J, 0.566, 0.170, mg/L, 1, 03/22/21 22:26

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 81.7, 50-150, %, 1, 03/22/21 22:26

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/22/21 22:26
Container ID: 1211155010-C

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 0.214 J, 0.472, 0.142, mg/L, 1, 03/22/21 22:26

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 94.9, 50-150, %, 1, 03/22/21 22:26

Batch Information

Analytical Batch: XFC15879
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/22/21 22:26
Container ID: 1211155010-C

Prep Batch: XXX44537
Prep Method: SW3520C
Prep Date/Time: 03/18/21 16:46
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

## Results of TWP-6

Client Sample ID: **TWP-6**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155010  
 Lab Project ID: 1211155

Collection Date: 03/13/21 14:20  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		03/19/21 23:10
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	86.2	50-150		%	1		03/19/21 23:10

## Batch Information

Analytical Batch: VFC15521  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/19/21 23:10  
 Container ID: 1211155010-E

Prep Batch: VXX36885  
 Prep Method: SW5030B  
 Prep Date/Time: 03/19/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



Results of TWP-6

Client Sample ID: TWP-6
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211155010
Lab Project ID: 1211155

Collection Date: 03/13/21 14:20
Received Date: 03/17/21 08:17
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



### Results of TWP-6

Client Sample ID: **TWP-6**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155010  
 Lab Project ID: 1211155

Collection Date: 03/13/21 14:20  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Chloromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		03/22/21 21:38
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		03/22/21 21:38
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Freon-113	5.00 U	10.0	3.10	ug/L	1		03/22/21 21:38
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		03/22/21 21:38
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		03/22/21 21:38
Naphthalene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
o-Xylene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		03/22/21 21:38
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Styrene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Toluene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 21:38
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		03/22/21 21:38
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		03/22/21 21:38
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		03/22/21 21:38
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	85.8	81-118		%	1		03/22/21 21:38
4-Bromofluorobenzene (surr)	101	85-114		%	1		03/22/21 21:38
Toluene-d8 (surr)	104	89-112		%	1		03/22/21 21:38

## Results of TWP-6

Client Sample ID: **TWP-6**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155010  
Lab Project ID: 1211155

Collection Date: 03/13/21 14:20  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 21:38  
Container ID: 1211155010-H

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



### Results of Trip Blank

Client Sample ID: **Trip Blank**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155011  
 Lab Project ID: 1211155

Collection Date: 03/13/21 14:20  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0313 J	0.100	0.0310	mg/L	1		03/19/21 19:56
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	90.7	50-150		%	1		03/19/21 19:56

### Batch Information

Analytical Batch: VFC15521  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/19/21 19:56  
 Container ID: 1211155011-A

Prep Batch: VXX36885  
 Prep Method: SW5030B  
 Prep Date/Time: 03/19/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL





### Results of Trip Blank

Client Sample ID: **Trip Blank**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155011  
 Lab Project ID: 1211155

Collection Date: 03/13/21 14:20  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		03/22/21 13:05
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		03/22/21 13:05
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		03/22/21 13:05
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		03/22/21 13:05
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		03/22/21 13:05
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		03/22/21 13:05
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		03/22/21 13:05
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		03/22/21 13:05
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		03/22/21 13:05
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		03/22/21 13:05
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		03/22/21 13:05
Benzene	0.200 U	0.400	0.120	ug/L	1		03/22/21 13:05
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		03/22/21 13:05
Bromoform	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Bromomethane	2.50 U	5.00	2.00	ug/L	1		03/22/21 13:05
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		03/22/21 13:05
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		03/22/21 13:05
Chloroethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05

Print Date: 03/30/2021 11:10:18AM

J flagging is activated



### Results of Trip Blank

Client Sample ID: **Trip Blank**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211155011  
 Lab Project ID: 1211155

Collection Date: 03/13/21 14:20  
 Received Date: 03/17/21 08:17  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Chloromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		03/22/21 13:05
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		03/22/21 13:05
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Freon-113	5.00 U	10.0	3.10	ug/L	1		03/22/21 13:05
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		03/22/21 13:05
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		03/22/21 13:05
Naphthalene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
o-Xylene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		03/22/21 13:05
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Styrene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Toluene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		03/22/21 13:05
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		03/22/21 13:05
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		03/22/21 13:05
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		03/22/21 13:05
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	87.5	81-118		%	1		03/22/21 13:05
4-Bromofluorobenzene (surr)	99.8	85-114		%	1		03/22/21 13:05
Toluene-d8 (surr)	106	89-112		%	1		03/22/21 13:05



### Results of Trip Blank

Client Sample ID: **Trip Blank**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211155011  
Lab Project ID: 1211155

Collection Date: 03/13/21 14:20  
Received Date: 03/17/21 08:17  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

### Results by Volatile GC/MS

#### Batch Information

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/22/21 13:05  
Container ID: 1211155011-D

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 03/22/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



### Method Blank

Blank ID: MB for HBN 1817047 [VXX/36885]  
Blank Lab ID: 1603480

Matrix: Water (Surface, Eff., Ground)

#### QC for Samples:

1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010, 1211155011

### Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	82.6	50-150		%

### Batch Information

Analytical Batch: VFC15521  
Analytical Method: AK101  
Instrument: Agilent 7890A PID/FID  
Analyst: MDT  
Analytical Date/Time: 3/19/2021 9:54:00AM

Prep Batch: VXX36885  
Prep Method: SW5030B  
Prep Date/Time: 3/19/2021 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 03/30/2021 11:10:22AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211155 [VXX36885]  
 Blank Spike Lab ID: 1603481  
 Date Analyzed: 03/19/2021 19:39

Spike Duplicate ID: LCSD for HBN 1211155 [VXX36885]  
 Spike Duplicate Lab ID: 1603482  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010, 1211155011

### Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	1.02	102	1.00	1.01	101	( 60-120 )	0.66	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	0.0500	97.7	98	0.0500	89.4	89	( 50-150 )	8.80	
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### Batch Information

Analytical Batch: VFC15521  
 Analytical Method: AK101  
 Instrument: Agilent 7890A PID/FID  
 Analyst: MDT

Prep Batch: VXX36885  
 Prep Method: SW5030B  
 Prep Date/Time: 03/19/2021 06:00  
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Print Date: 03/30/2021 11:10:25AM

## Method Blank

Blank ID: MB for HBN 1817098 [VXX/36892]

Matrix: Water (Surface, Eff., Ground)

Blank Lab ID: 1603749

QC for Samples:

1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010, 1211155011

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	2.00	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

Print Date: 03/30/2021 11:10:27AM

## Method Blank

Blank ID: MB for HBN 1817098 [VXX/36892]  
 Blank Lab ID: 1603749

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010, 1211155011

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	5.00U	10.0	3.10	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	87.3	81-118		%
4-Bromofluorobenzene (surr)	99.1	85-114		%
Toluene-d8 (surr)	103	89-112		%

## Method Blank

Blank ID: MB for HBN 1817098 [VXX/36892]  
Blank Lab ID: 1603749

Matrix: Water (Surface, Eff., Ground)

### QC for Samples:

1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010, 1211155011

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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### Batch Information

Analytical Batch: VMS20612  
Analytical Method: SW8260D  
Instrument: VPA 780/5975 GC/MS  
Analyst: JMG  
Analytical Date/Time: 3/22/2021 11:13:00AM

Prep Batch: VXX36892  
Prep Method: SW5030B  
Prep Date/Time: 3/22/2021 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 03/30/2021 11:10:27AM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211155 [VXX36892]  
 Blank Spike Lab ID: 1603750  
 Date Analyzed: 03/22/2021 11:29

Spike Duplicate ID: LCSD for HBN 1211155  
 [VXX36892]  
 Spike Duplicate Lab ID: 1603751  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007,  
 1211155008, 1211155009, 1211155010, 1211155011

## Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	30.8	103	30	29.8	99	( 78-124 )	3.20	(< 20 )
1,1,1-Trichloroethane	30	29.9	100	30	29.5	99	( 74-131 )	1.20	(< 20 )
1,1,2,2-Tetrachloroethane	30	30.6	102	30	29.3	98	( 71-121 )	4.50	(< 20 )
1,1,2-Trichloroethane	30	32.4	108	30	31.2	104	( 80-119 )	4.00	(< 20 )
1,1-Dichloroethane	30	30.0	100	30	29.4	98	( 77-125 )	2.10	(< 20 )
1,1-Dichloroethene	30	33.3	111	30	32.7	109	( 71-131 )	1.90	(< 20 )
1,1-Dichloropropene	30	32.3	108	30	31.9	106	( 79-125 )	1.20	(< 20 )
1,2,3-Trichlorobenzene	30	29.6	99	30	28.6	95	( 69-129 )	3.20	(< 20 )
1,2,3-Trichloropropane	30	29.2	97	30	27.5	92	( 73-122 )	6.00	(< 20 )
1,2,4-Trichlorobenzene	30	30.8	103	30	30.3	101	( 69-130 )	1.70	(< 20 )
1,2,4-Trimethylbenzene	30	31.5	105	30	31.2	104	( 79-124 )	0.96	(< 20 )
1,2-Dibromo-3-chloropropane	30	26.0	87	30	24.6	82	( 62-128 )	5.90	(< 20 )
1,2-Dibromoethane	30	31.3	104	30	30.0	100	( 77-121 )	4.20	(< 20 )
1,2-Dichlorobenzene	30	30.6	102	30	30.5	102	( 80-119 )	0.39	(< 20 )
1,2-Dichloroethane	30	25.7	86	30	25.1	84	( 73-128 )	2.30	(< 20 )
1,2-Dichloropropane	30	30.9	103	30	31.1	104	( 78-122 )	0.77	(< 20 )
1,3,5-Trimethylbenzene	30	32.2	107	30	31.7	106	( 75-124 )	1.60	(< 20 )
1,3-Dichlorobenzene	30	30.9	103	30	31.3	104	( 80-119 )	1.30	(< 20 )
1,3-Dichloropropane	30	32.1	107	30	31.0	103	( 80-119 )	3.40	(< 20 )
1,4-Dichlorobenzene	30	30.9	103	30	30.3	101	( 79-118 )	2.00	(< 20 )
2,2-Dichloropropane	30	30.4	101	30	30.1	100	( 60-139 )	1.10	(< 20 )
2-Butanone (MEK)	90	81.7	91	90	75.6	84	( 56-143 )	7.80	(< 20 )
2-Chlorotoluene	30	31.7	106	30	30.9	103	( 79-122 )	2.50	(< 20 )
2-Hexanone	90	88.4	98	90	82.1	91	( 57-139 )	7.40	(< 20 )
4-Chlorotoluene	30	31.2	104	30	30.5	102	( 78-122 )	2.20	(< 20 )
4-Isopropyltoluene	30	32.3	108	30	31.4	105	( 77-127 )	2.90	(< 20 )
4-Methyl-2-pentanone (MIBK)	90	81.4	90	90	76.5	85	( 67-130 )	6.20	(< 20 )
Benzene	30	31.3	104	30	30.9	103	( 79-120 )	1.30	(< 20 )
Bromobenzene	30	31.2	104	30	31.0	103	( 80-120 )	0.61	(< 20 )
Bromochloromethane	30	27.7	92	30	27.3	91	( 78-123 )	1.30	(< 20 )
Bromodichloromethane	30	28.8	96	30	28.7	96	( 79-125 )	0.49	(< 20 )
Bromoform	30	28.7	96	30	27.3	91	( 66-130 )	4.90	(< 20 )
Bromomethane	30	26.1	87	30	25.4	85	( 53-141 )	2.80	(< 20 )
Carbon disulfide	45	49.9	111	45	48.6	108	( 64-133 )	2.70	(< 20 )

Print Date: 03/30/2021 11:10:30AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211155 [VXX36892]  
 Blank Spike Lab ID: 1603750  
 Date Analyzed: 03/22/2021 11:29

Spike Duplicate ID: LCSD for HBN 1211155 [VXX36892]  
 Spike Duplicate Lab ID: 1603751  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010, 1211155011

## Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon tetrachloride	30	27.5	92	30	27.6	92	( 72-136 )	0.25	(< 20 )
Chlorobenzene	30	31.6	105	30	30.4	101	( 82-118 )	3.60	(< 20 )
Chloroethane	30	30.0	100	30	29.0	97	( 60-138 )	3.40	(< 20 )
Chloroform	30	28.6	95	30	28.4	95	( 79-124 )	0.67	(< 20 )
Chloromethane	30	43.7	146	* 30	40.2	134	( 50-139 )	8.30	(< 20 )
cis-1,2-Dichloroethene	30	29.9	100	30	28.6	95	( 78-123 )	4.30	(< 20 )
cis-1,3-Dichloropropene	30	30.2	101	30	30.1	100	( 75-124 )	0.40	(< 20 )
Dibromochloromethane	30	30.6	102	30	29.6	99	( 74-126 )	3.10	(< 20 )
Dibromomethane	30	27.3	91	30	25.9	86	( 79-123 )	5.10	(< 20 )
Dichlorodifluoromethane	30	33.3	111	30	32.4	108	( 32-152 )	3.00	(< 20 )
Ethylbenzene	30	32.1	107	30	31.1	104	( 79-121 )	3.10	(< 20 )
Freon-113	45	49.8	111	45	49.0	109	( 70-136 )	1.70	(< 20 )
Hexachlorobutadiene	30	29.9	100	30	29.4	98	( 66-134 )	1.50	(< 20 )
Isopropylbenzene (Cumene)	30	31.9	106	30	31.1	104	( 72-131 )	2.30	(< 20 )
Methylene chloride	30	30.6	102	30	30.1	100	( 74-124 )	1.60	(< 20 )
Methyl-t-butyl ether	45	43.6	97	45	42.7	95	( 71-124 )	2.00	(< 20 )
Naphthalene	30	28.2	94	30	26.9	90	( 61-128 )	4.60	(< 20 )
n-Butylbenzene	30	32.3	108	30	31.9	106	( 75-128 )	1.30	(< 20 )
n-Propylbenzene	30	33.3	111	30	32.8	109	( 76-126 )	1.70	(< 20 )
o-Xylene	30	31.0	103	30	30.4	101	( 78-122 )	2.00	(< 20 )
P & M -Xylene	60	63.6	106	60	61.7	103	( 80-121 )	3.00	(< 20 )
sec-Butylbenzene	30	32.9	110	30	32.1	107	( 77-126 )	2.50	(< 20 )
Styrene	30	31.5	105	30	30.8	103	( 78-123 )	2.30	(< 20 )
tert-Butylbenzene	30	31.6	105	30	31.7	106	( 78-124 )	0.25	(< 20 )
Tetrachloroethene	30	33.6	112	30	32.7	109	( 74-129 )	2.90	(< 20 )
Toluene	30	31.2	104	30	30.4	101	( 80-121 )	2.60	(< 20 )
trans-1,2-Dichloroethene	30	31.2	104	30	30.7	102	( 75-124 )	1.70	(< 20 )
trans-1,3-Dichloropropene	30	32.8	109	30	31.8	106	( 73-127 )	3.10	(< 20 )
Trichloroethene	30	30.7	102	30	30.3	101	( 79-123 )	1.20	(< 20 )
Trichlorofluoromethane	30	31.6	105	30	30.9	103	( 65-141 )	2.30	(< 20 )
Vinyl acetate	30	30.9	103	30	29.3	98	( 54-146 )	5.30	(< 20 )
Vinyl chloride	30	33.7	112	30	32.9	110	( 58-137 )	2.40	(< 20 )
Xylenes (total)	90	94.6	105	90	92.1	102	( 79-121 )	2.70	(< 20 )

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211155 [VXX36892]  
 Blank Spike Lab ID: 1603750  
 Date Analyzed: 03/22/2021 11:29

Spike Duplicate ID: LCSD for HBN 1211155 [VXX36892]  
 Spike Duplicate Lab ID: 1603751  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010, 1211155011

## Results by SW8260D

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	30	86.5	87	30	84.8	85	( 81-118 )	1.90	
4-Bromofluorobenzene (surr)	30	99.9	100	30	99.4	99	( 85-114 )	0.54	
Toluene-d8 (surr)	30	105	105	30	104	104	( 89-112 )	0.83	

## Batch Information

Analytical Batch: **VMS20612**  
 Analytical Method: **SW8260D**  
 Instrument: **VPA 780/5975 GC/MS**  
 Analyst: **JMG**

Prep Batch: **VXX36892**  
 Prep Method: **SW5030B**  
 Prep Date/Time: **03/22/2021 06:00**  
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211155 [XXX44534]  
 Blank Spike Lab ID: 1603094  
 Date Analyzed: 03/22/2021 22:52

Spike Duplicate ID: LCSD for HBN 1211155  
 [XXX44534]  
 Spike Duplicate Lab ID: 1603095  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211155008, 1211155009, 1211155010

## Results by 8270D SIM LV (PAH)

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	2	1.19	60	2	1.20	60	( 41-115 )	1.20	(< 20 )
2-Methylnaphthalene	2	1.17	58	2	1.21	60	( 39-114 )	3.20	(< 20 )
Acenaphthene	2	1.19	60	2	1.18	59	( 48-114 )	1.30	(< 20 )
Acenaphthylene	2	1.33	67	2	1.27	63	( 35-121 )	5.10	(< 20 )
Anthracene	2	1.32	66	2	1.25	62	( 53-119 )	5.60	(< 20 )
Benzo(a)Anthracene	2	1.45	73	2	1.24	62	( 59-120 )	15.60	(< 20 )
Benzo[a]pyrene	2	1.61	81	2	1.37	68	( 53-120 )	16.50	(< 20 )
Benzo[b]Fluoranthene	2	1.57	79	2	1.32	66	( 53-126 )	17.70	(< 20 )
Benzo[g,h,i]perylene	2	1.79	89	2	1.50	75	( 44-128 )	17.20	(< 20 )
Benzo[k]fluoranthene	2	1.63	82	2	1.41	70	( 54-125 )	15.00	(< 20 )
Chrysene	2	1.67	83	2	1.43	71	( 57-120 )	15.40	(< 20 )
Dibenzo[a,h]anthracene	2	1.80	90	2	1.52	76	( 44-131 )	16.70	(< 20 )
Fluoranthene	2	1.42	71	2	1.24	62	( 58-120 )	13.20	(< 20 )
Fluorene	2	1.34	67	2	1.29	65	( 50-118 )	3.60	(< 20 )
Indeno[1,2,3-c,d] pyrene	2	1.89	95	2	1.60	80	( 48-130 )	16.70	(< 20 )
Naphthalene	2	1.25	62	2	1.28	64	( 43-114 )	2.50	(< 20 )
Phenanthrene	2	1.42	71	2	1.34	67	( 53-115 )	5.60	(< 20 )
Pyrene	2	1.52	76	2	1.33	67	( 53-121 )	13.40	(< 20 )
<b>Surrogates</b>									
2-Methylnaphthalene-d10 (surr)	2	55	55	2	56.8	57	( 42-86 )	3.30	
Fluoranthene-d10 (surr)	2	70.4	70	2	63.1	63	( 50-97 )	10.80	

## Batch Information

Analytical Batch: XMS12537  
 Analytical Method: 8270D SIM LV (PAH)  
 Instrument: SVA Agilent 780/5975 GC/MS  
 Analyst: LAW

Prep Batch: XXX44534  
 Prep Method: SW3535A  
 Prep Date/Time: 03/18/2021 11:00  
 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL



### Method Blank

Blank ID: MB for HBN 1816947 [XXX/44537]  
Blank Lab ID: 1603198

Matrix: Water (Surface, Eff., Ground)

#### QC for Samples:

1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010

### Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
<b>Surrogates</b>				
5a Androstane (surr)	85.7	60-120		%

### Batch Information

Analytical Batch: XFC15879  
Analytical Method: AK102  
Instrument: Agilent 7890B R  
Analyst: IVM  
Analytical Date/Time: 3/22/2021 8:08:00PM

Prep Batch: XXX44537  
Prep Method: SW3520C  
Prep Date/Time: 3/18/2021 4:46:39PM  
Prep Initial Wt./Vol.: 250 mL  
Prep Extract Vol: 1 mL

Print Date: 03/30/2021 11:10:37AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211155 [XXX44537]  
 Blank Spike Lab ID: 1603199  
 Date Analyzed: 03/22/2021 20:37

Spike Duplicate ID: LCSD for HBN 1211155 [XXX44537]  
 Spike Duplicate Lab ID: 1603200  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010

## Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	18.7	93	20	18.8	94	( 75-125 )	0.60	(< 20 )

### Surrogates

5a Androstane (surr)	0.4	102	102	0.4	103	103	( 60-120 )	0.97	
----------------------	-----	-----	-----	-----	-----	-----	------------	------	--

## Batch Information

Analytical Batch: **XFC15879**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **IVM**

Prep Batch: **XXX44537**  
 Prep Method: **SW3520C**  
 Prep Date/Time: **03/18/2021 16:46**  
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL



### Method Blank

Blank ID: MB for HBN 1816947 [XXX/44537]  
Blank Lab ID: 1603198

Matrix: Water (Surface, Eff., Ground)

#### QC for Samples:

1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010

### Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.191J	0.500	0.150	mg/L
<b>Surrogates</b>				
n-Triacontane-d62 (surr)	103	60-120		%

### Batch Information

Analytical Batch: XFC15879  
Analytical Method: AK103  
Instrument: Agilent 7890B R  
Analyst: IVM  
Analytical Date/Time: 3/22/2021 8:08:00PM

Prep Batch: XXX44537  
Prep Method: SW3520C  
Prep Date/Time: 3/18/2021 4:46:39PM  
Prep Initial Wt./Vol.: 250 mL  
Prep Extract Vol: 1 mL

Print Date: 03/30/2021 11:10:42AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211155 [XXX44537]  
 Blank Spike Lab ID: 1603199  
 Date Analyzed: 03/22/2021 20:37

Spike Duplicate ID: LCSD for HBN 1211155 [XXX44537]  
 Spike Duplicate Lab ID: 1603200  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211155001, 1211155002, 1211155003, 1211155004, 1211155005, 1211155006, 1211155007, 1211155008, 1211155009, 1211155010

## Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	19.5	97	20	19.6	98	( 60-120 )	0.69	(< 20 )
<b>Surrogates</b>									
n-Triacontane-d62 (surr)	0.4	90.1	90	0.4	93.7	94	( 60-120 )	3.80	

## Batch Information

Analytical Batch: **XFC15879**  
 Analytical Method: **AK103**  
 Instrument: **Agilent 7890B R**  
 Analyst: **IVM**

Prep Batch: **XXX44537**  
 Prep Method: **SW3520C**  
 Prep Date/Time: **03/18/2021 16:46**  
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL



P# 338928ca



2355 Hill Road  
Fairbanks, AK 99709  
(907) 479-0800  
www.shannonwilson.com

# CHAIN-OF-CUSTODY RECORD

Laboratory SGS Page 1 of 2  
Attn: Den Dawkins

1211155



Analytical Methods (include preservative if used)

GR0 AK101  
DPO AK102  
DPO AK103  
PAT 8270D-SM

Quote No: \_\_\_\_\_  
J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Total N			Remarks/Matrix Composition/Grab? Sample Containers
MW-4	(1AH)	1643	3/14/21	X	X	8	groundwaters
EB-4	(2AH)	1653		X	X	8	
MW-1	(3AH)	1406		X	X	8	
MW-2	(4AH)	1207		X	X	8	
MW-102	(5AH)	1157		X	X	8	
MW-3	(6AH)	1009		X	X	8	
TWP-7	(7AH)	1643	3/13/21	X	X	8	
TWP-5	(8AS)	1512		X	X	10	
TWP-105	(9AJ)	1502		X	X	10	
TWP-6	(10AJ)	1420		X	X	10	

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>[Signature]</u> Printed Name: <u>Dana Fiore</u> Company: <u>Shannon &amp; Wilson, Inc.</u>	Signature: _____ Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: <u>932</u> Date: <u>3/14/21</u>	Time: _____ Date: _____	Time: _____ Date: _____
Received By: 1. Signature: _____ Printed Name: _____ Company: _____	Received By: 2. Signature: _____ Printed Name: _____ Company: _____	Received By: 3. Signature: <u>[Signature]</u> Printed Name: <u>M. Jelle Allsman</u> Company: <u>SGS</u>
Time: _____ Date: _____	Time: _____ Date: <u>3/17/21</u>	Time: <u>0817</u> Date: <u>3/17/21</u>

Project Information  
Number: 103311-009  
Name: Cardona SEBS  
Contact: VEW@Shannon.com  
Ongoing Project? Yes  No   
Sampler: DHF and RLU

Sample Receipt  
Total No. of Containers: 92  
COC Seals/Intact? Y/N/A  
Received Good Cond./Cold Temp: \_\_\_\_\_  
Delivery Method: Cold/Straw

Notes:  
Trip blank remained in cooler with Samples at all times.

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
Yellow - w/shipment - for consignee files  
Pink - Shannon & Wilson - job file

# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

**1211155**



Total Number of Containers

Remarks/Matrix  
 Composition/Grab?  
 Sample Containers

Quote No: \_\_\_\_\_  
 J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
 Please Specify \_\_\_\_\_

Date Sampled

Time

Lab No.

11AF

Sample Identity

Trip Blank

X

GPO M101 (voc Grab)

6

**Project Information**  
 Number: W 3311-009  
 Name: Corobva SEEB  
 Contact: vw@shannon-w.com  
 Ongoing Project? Yes  No   
 Sampler: DHF and RW

**Sample Receipt**  
 Total No. of Containers: 42  
 COC Seals/Intact? Y/N/NA  
 Received Good Cond./Cold  
 Temp: \_\_\_\_\_  
 Delivery Method: Coldstream

**Notes:**  
See page 1.

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file


Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Dave Fiore</u> Printed Name: <u>Dave Fiore</u> Company: <u>Shannon &amp; Wilson, Inc</u>	Signature: _____ Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: <u>9:30</u> Date: <u>3/13/21</u>	Time: _____ Date: _____	Time: <u>0817</u> Date: <u>3/13/21</u>
Received By: 1.	Received By: 2.	Received By: 3.
Signature: _____ Printed Name: _____ Company: _____	Signature: <u>M. Kelly Wilson</u> Printed Name: <u>M. Kelly Wilson</u> Company: <u>SGS</u>	Signature: _____ Printed Name: _____ Company: _____
Time: _____ Date: _____	Time: _____ Date: _____	Time: _____ Date: <u>1) 3-6 06?</u> <u>2) 3-2 05?</u>

027 CDV 7436 4846

*Alert*

*Big Cooler*

027-7436 4846 3/17

Shipper's Name and Address Shannon and Wilson Inc 2355 Hill Rd Fairbanks, AK 99712 USA  Tel: 907-479-0600	Shipper's Account Number 27400200733  Customer's ID Number 10926	Not Negotiable  <b>Air Waybill</b> Issued By  P.O. BOX 68900 SEATTLE, WA 98168 800-225-2752 ALASKACARGO.COM
---	--	--

Consignee's Name and Address SGS North America 200 W Potter Drive Anchorage, AK 99518 USA  Tel: 907-562-2343	Consignee's Account Number 27400215947	Also Notify N
--	---	------------------

Issuing Carrier's Agent and City  Agent's IATA Code  Account No.	Accounting Information Shannon and Wilson Inc 2355 Hill Rd Fairbanks, AK 99712 USA  SRN/103311009 GoldStreak	10926
--	---	-------

Airport of Departure (Addr. of First Carrier) and Requested Routing Cordova				Currency USD PP X	WT/VAL X	Other X	Declared Value For Carriage NVD	Declared Value For Customs NCV
To By First Carrier ANC Alaska Airlines	To / By	To / By	Flight/Date AS 061/16	Amount of Insurance XXX				

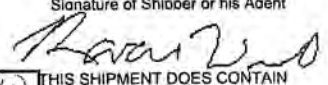
Handling Information

**DANGEROUS GOODS IN EXCEPTED QUANTITIES DGD AND NOTOC NOT REQUIRED**  
**DOT-SP-15368, 3 BOXES EXCEPTED QUANTITIES, 2 BOX JUST SAMPLES**

SCI

No of Pieces	Gross Weight	kg	lb	Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (Incl. Dimensions or Volume)
5	194.0	L	Q		194.0		AS AGREED	SOIL & WATER SAMPLES
								Dims: 24 x 13 x14 x 5
5	194.0						AS AGREED	REQ GSX Volume: 12.639

Prepaid AS AGREED	Weight Charge Collect	Other Charges XBC 10.00
Valuation Charge		
Tax		

Total Other Charges Due Agent	Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. I consent to the inspection of this cargo.
Total Other Charges Due Carrier	For: Shannon and Wilson Inc Signature of Shipper or his Agent 
Total Prepaid AS AGREED	<input type="checkbox"/> THIS SHIPMENT DOES NOT CONTAIN DANGEROUS GOODS <input checked="" type="checkbox"/> THIS SHIPMENT DOES CONTAIN DANGEROUS GOODS
Total Collect	Executed On (Date) 16 Mar 2021 10:43 at (Place) Cordova Signature of Issuing Carrier or its Agent Alaska Airlines

**Alert Expeditors Inc.**

**#411511**

Citywide Delivery • 440-3351  
8421 Flamingo Drive • Anchorage, Alaska 99502

Date 3-17-21

From Shannon-Wilson

To SGS Labs Ave

Collect  Prepay  Advance Charges

Job # CPV PO# AS 7436-4840

Sample - X5  
5 at 1940RS

Shipped Signature 

Received By: \_\_\_\_\_

Total Charge



e-Sample Receipt Form

SGS Workorder #:

1211155



1 2 1 1 1 5 5

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
<b>Chain of Custody / Temperature Requirements</b>			N/A	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	2F		
COC accompanied samples?	Yes			
DOD: Were samples received in COC corresponding coolers?	N/A			
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required				
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1	@ 3.6 °C	Therm. ID: D62
	Yes	Cooler ID: 2	@ 3.2 °C	Therm. ID: D52
		Cooler ID:	@ °C	Therm. ID:
		Cooler ID:	@ °C	Therm. ID:
		Cooler ID:	@ °C	Therm. ID:
*If >6°C, were samples collected <8 hours ago?		N/A		
If <0°C, were sample containers ice free?		N/A		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
<b>Holding Time / Documentation / Sample Condition Requirements</b>		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes			
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes			
**Note: If times differ <1hr, record details & login per COC.				
***Note: If sample information on containers differs from COC, SGS will default to COC information				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes			
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A	***Exemption permitted for metals (e.g, 200.8/6020B).	
<b>Volatile / LL-Hg Requirements</b>				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes			
Were all soil VOAs field extracted with MeOH+BFB?	N/A			
<b>Note to Client:</b> Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				



### Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1211155001-A	HCL to pH < 2	OK	1211155007-C	HCL to pH < 2	OK
1211155001-B	HCL to pH < 2	OK	1211155007-D	HCL to pH < 2	OK
1211155001-C	HCL to pH < 2	OK	1211155007-E	HCL to pH < 2	OK
1211155001-D	HCL to pH < 2	OK	1211155007-F	HCL to pH < 2	OK
1211155001-E	HCL to pH < 2	OK	1211155007-G	HCL to pH < 2	OK
1211155001-F	HCL to pH < 2	OK	1211155007-H	HCL to pH < 2	OK
1211155001-G	HCL to pH < 2	OK	1211155008-A	No Preservative Required	OK
1211155001-H	HCL to pH < 2	OK	1211155008-B	No Preservative Required	OK
1211155002-A	HCL to pH < 2	OK	1211155008-C	HCL to pH < 2	OK
1211155002-B	HCL to pH < 2	OK	1211155008-D	HCL to pH < 2	OK
1211155002-C	HCL to pH < 2	OK	1211155008-E	HCL to pH < 2	OK
1211155002-D	HCL to pH < 2	OK	1211155008-F	HCL to pH < 2	OK
1211155002-E	HCL to pH < 2	OK	1211155008-G	HCL to pH < 2	OK
1211155002-F	HCL to pH < 2	OK	1211155008-H	HCL to pH < 2	OK
1211155002-G	HCL to pH < 2	OK	1211155008-I	HCL to pH < 2	OK
1211155002-H	HCL to pH < 2	OK	1211155008-J	HCL to pH < 2	OK
1211155003-A	HCL to pH < 2	OK	1211155009-A	No Preservative Required	OK
1211155003-B	HCL to pH < 2	OK	1211155009-B	No Preservative Required	OK
1211155003-C	HCL to pH < 2	OK	1211155009-C	HCL to pH < 2	OK
1211155003-D	HCL to pH < 2	OK	1211155009-D	HCL to pH < 2	OK
1211155003-E	HCL to pH < 2	OK	1211155009-E	HCL to pH < 2	OK
1211155003-F	HCL to pH < 2	OK	1211155009-F	HCL to pH < 2	OK
1211155003-G	HCL to pH < 2	OK	1211155009-G	HCL to pH < 2	OK
1211155003-H	HCL to pH < 2	OK	1211155009-H	HCL to pH < 2	OK
1211155004-A	HCL to pH < 2	OK	1211155009-I	HCL to pH < 2	OK
1211155004-B	HCL to pH < 2	OK	1211155009-J	HCL to pH < 2	OK
1211155004-C	HCL to pH < 2	OK	1211155010-A	No Preservative Required	OK
1211155004-D	HCL to pH < 2	OK	1211155010-B	No Preservative Required	OK
1211155004-E	HCL to pH < 2	OK	1211155010-C	HCL to pH < 2	OK
1211155004-F	HCL to pH < 2	OK	1211155010-D	HCL to pH < 2	OK
1211155004-G	HCL to pH < 2	OK	1211155010-E	HCL to pH < 2	OK
1211155004-H	HCL to pH < 2	OK	1211155010-F	HCL to pH < 2	OK
1211155005-A	HCL to pH < 2	OK	1211155010-G	HCL to pH < 2	OK
1211155005-B	HCL to pH < 2	OK	1211155010-H	HCL to pH < 2	OK
1211155005-C	HCL to pH < 2	OK	1211155010-I	HCL to pH < 2	OK
1211155005-D	HCL to pH < 2	OK	1211155010-J	HCL to pH < 2	OK
1211155005-E	HCL to pH < 2	OK	1211155011-A	HCL to pH < 2	OK
1211155005-F	HCL to pH < 2	OK	1211155011-B	HCL to pH < 2	OK
1211155005-G	HCL to pH < 2	OK	1211155011-C	HCL to pH < 2	OK
1211155005-H	HCL to pH < 2	OK	1211155011-D	HCL to pH < 2	OK
1211155006-A	HCL to pH < 2	OK	1211155011-E	HCL to pH < 2	OK
1211155006-B	HCL to pH < 2	OK	1211155011-F	HCL to pH < 2	OK
1211155006-C	HCL to pH < 2	OK			
1211155006-D	HCL to pH < 2	OK			
1211155006-E	HCL to pH < 2	OK			
1211155006-F	HCL to pH < 2	OK			
1211155006-G	HCL to pH < 2	OK			
1211155006-H	HCL to pH < 2	OK			
1211155007-A	HCL to pH < 2	OK			
1211155007-B	HCL to pH < 2	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates that an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

**Laboratory Data Review Checklist**

Completed By:

Justin Risley

Title:

Engineering Staff

Date:

4/1/21

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1211155

Laboratory Report Date:

3/30/2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

ADEC File Number:

2215.38.035

Hazard Identification Number:

27304



1211155

Laboratory Report Date:

3/30/2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all the submitted sample analyses?

Yes  No  N/A  Comments:

Analyses were performed by SGS North America, Inc. in Anchorage, AK.

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

Samples were not transferred or subcontracted.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

Cooler 1 was received at 3.6°C and cooler 2 was received at 3.2°C.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

1211155

Laboratory Report Date:

3/30/2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

The laboratory report noted that samples were received in good condition.

e. Data quality or usability affected?

Comments:

Data quality and/or usability were not affected; see above.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

8260D - LCS recovery for chloromethane does not meet QC criteria. The associated sample concentrations for this analyte are less than the LOQ. See Section 6.b. for details.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

The laboratory did not specify any corrective actions.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative does not indicate an effect on data quality/usability. Any discrepancies are noted below.

1211155

Laboratory Report Date:

3/30/2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

Analytical sensitivity was evaluated to verify that LODs met the applicable DEC cleanup level. The LOD for 1,2,3-trichloropropane did not meet the DEC cleanup level. We cannot assess if this analyte is present at concentrations below the cleanup level.

e. Data quality or usability affected?

Yes  No  N/A

See above.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

A method blank was not included in 8270D SIM preparatory batch XXX44534. We cannot assess contamination introduced by the laboratory for this batch.

1211155

Laboratory Report Date:

3/30/2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

Method blank results were below the LOQ; however, residual range organics (RRO) were detected at an estimated concentration below the LOQ (0.191 mg/L) in method blank 1603198.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Method blank 1603198 is a quality-control sample for project samples *MW-4, EB-4, MW-1, MW-2, MW-102, MW-3, TWP-7, TWP-5, TWP-105, and TWP-6.*

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

RRO were also detected below the LOQ in project samples *EB-4, MW-2, MW-102, TWP-5, TWP-105, and TWP-6.* These results are considered not detected and have been flagged 'UB' at the LOQ.

v. Data quality or usability affected?

Comments:

Yes; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

No metals/inorganics we submitted with this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

The LCS recovery of chloromethane is above the control limit.

1211155

Laboratory Report Date:

3/30/2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Chloromethane was detected below the LOQ in samples *MW-4* and *MW-3*. These results are considered biased high estimates and have been flagged 'JH'.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were affected; see above.

- c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

MS/MSD was not reported for this work order. Precision and accuracy are determined using the LCS/LCSD.

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

No metals/inorganics we submitted with this work order.

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Laboratory Report Date:

3/30/2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

See above.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  Comments:

See above.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A; see above.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability are not affected; see above.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

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iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

iv. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes  No  N/A  Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

There was no indication on the COC as to which cooler the trip blank was transported, however, trip blank results were reported for all volatile analyses.

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Trip blank results were below the LOQ; however, gasoline range organics (GRO) were detected at an estimated concentration below the LOQ (0.0313 mg/L).

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

The trip blank is a quality-control sample for project samples *MW-4*, *EB-4*, *MW-1*, *MW-2*, *MW-102*, *MW-3*, *TWP-7*, *TWP-5*, *TWP-105*, and *TWP-6*.

GRO were also detected below the LOQ in project sample *MW-3*. The results are considered not detected and have been flagged 'UB' at the LOQ in the analytical database.

v. Data quality or usability affected?

Comments:

Data quality and usability are affected; see above.

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Laboratory Report Date:

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CS Site Name:

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f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

Field duplicate sample pairs *MW-2/MW-102* and *TWP-5/TWP-105* were submitted with this work order.

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where  $R_1$  = Sample Concentration  
 $R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and/or usability are not affected; see above.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Equipment blank *EB-4* was included with this work order.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Equipment blank results were below the LOQ; however, diesel range organics (DRO) were detected at an estimated concentration below the LOQ (0.188 mg/L) and residual range organics (RRO) were detected at an estimated concentration below the LOQ (0.172 mg/L)



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Laboratory Report Date:

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CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

The equipment blank is a quality-control sample for project samples *MW-4, MW-1, MW-2, MW-102, MW-3, TWP-7, TWP-5, TWP-105, and TWP-6.*

DRO were also detected below the LOQ in project samples *TWP-5, TWP-105, and TWP-6.* These results are considered not detected and have been flagged 'UB' at the LOQ.

RRO were also detected below the LOQ in project samples *MW-2, MW-102, TWP-5, TWP-105, and TWP-6.* However, the detection in the equipment blank is most likely due to laboratory introduced contamination given the similar concentration of RRO detected in the method blank sample. Additional flags have not been added due to the equipment blank detection.

iii. Data quality or usability affected?

Comments:

Data quality and usability are affected; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

Other data flags or qualifiers were not required.



## Laboratory Report of Analysis

To: Shannon & Wilson-Fairbanks  
5430 Fairbanks Street, Suite 3  
Anchorage, AK 99518  
907-479-0600

Report Number: 1211171

Client Project: 103311-011 Cordova SREB UIC

Dear Valerie Webb,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jennifer at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,  
SGS North America Inc.

Stephen C. Ede

2021.04.06

14:18:56 -08'00'

Jennifer Dawkins  
Project Manager  
Jennifer.Dawkins@sgs.com

Date

## Case Narrative

SGS Client: **Shannon & Wilson-Fairbanks**  
SGS Project: **1211171**  
Project Name/Site: **103311-011 Cordova SREB UIC**  
Project Contact: **Valerie Webb**

Refer to sample receipt form for information on sample condition.

### **SBIW20-1 (1211171001) PS**

Ethylene Glycol 8015M was analyzed by Bio-Chem in Grand Rapids, MI.

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

8270D - The LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

### **SBIW20-101 (1211171002) PS**

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

8270D - The LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

### **SBIW20-2 (1211171003) PS**

Ethylene Glycol 8015M were analyzed by Bio-Chem in Grand Rapids, MI.

### **SBIW19-1 (1211171004) PS**

8260D - The LOQs are elevated due to sample dilution. The sample was diluted due to matrix interference with internal standards.

8260D - CCV recovery for vinyl acetate does not meet QC criteria (biased low). Sample was reanalyzed outside of hold time and CCV was within QC criteria. Sample results confirm. In-hold data reported.

8270D - The LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

### **1211171001MS (1603233) MS**

4500NH3-G - Ammonia - MS recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

### **1211171001MSD (1603234) MSD**

4500NH3-G - Ammonia - MSD recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

### **1211171005(1603706MSD) (1603708) MSD**

6020B- Metals MSD recovery for barium does not meet the QC criteria. Post digestion spike was successful.

\*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 04/06/2021 1:12:02PM

### Report of Manual Integrations

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Analyte</u>	<u>Reason</u>
<b>SW8270D</b>				
1604111	LCS for HBN 1817190 [XXX/44558	XMS12548	1-Chloronaphthalene	SP
1604112	LCSD for HBN 1817190 [XXX/4455	XMS12548	1-Chloronaphthalene	SP

#### Manual Integration Reason Code Descriptions

Code	Description
O	Original Chromatogram
M	Modified Chromatogram
SS	Skimmed surrogate
BLG	Closed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP	Removed split peak
FPS	Forced peak start/stop
BLC	Baseline correction
PNF	Peak not found by software

All DRO/RRO analysis are integrated per SOP.

## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

### Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
SBIW20-1	1211171001	03/15/2021	03/17/2021	Soil/Solid (dry weight)
SBIW20-101	1211171002	03/15/2021	03/17/2021	Soil/Solid (dry weight)
SBIW20-2	1211171003	03/15/2021	03/17/2021	Soil/Solid (dry weight)
SBIW19-1	1211171004	03/15/2021	03/17/2021	Soil/Solid (dry weight)
SBIW19-2	1211171005	03/15/2021	03/17/2021	Soil/Solid (dry weight)
Trip Blank 3	1211171006	03/15/2021	03/17/2021	Soil/Solid (dry weight)
Canceled SBIW20-1	1211171007	03/15/2021	03/17/2021	Solid/Soil (Wet Weight)
Canceled SBIW20-101	1211171008	03/15/2021	03/17/2021	Solid/Soil (Wet Weight)
Canceled SBIW20-2	1211171009	03/15/2021	03/17/2021	Solid/Soil (Wet Weight)
Canceled SBIW19-1	1211171010	03/15/2021	03/17/2021	Solid/Soil (Wet Weight)
Canceled SBIW19-2	1211171011	03/15/2021	03/17/2021	Solid/Soil (Wet Weight)

<u>Method</u>	<u>Method Description</u>
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
SM21 4500-NH3 G	Ammonia-N (S) SM4500-F
AK102	Diesel/Residual Range Organics
AK103	Diesel/Residual Range Organics
AK101	Gasoline Range Organics (S)
SW6020B	Metals by ICP-MS (S)
SM21 2540G	Percent Solids SM2540G
SW8270D	SW846 8270 Semi-Volatiles by GC/MS (S)
SW8260D	VOC 8260 (S) Field Extracted

### Detectable Results Summary

Client Sample ID: **SBIW20-1**

Lab Sample ID: 1211171001

**Metals by ICP/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Arsenic	3.45	mg/kg
Barium	85.9	mg/kg
Cadmium	1.11	mg/kg
Chromium	33.5	mg/kg
Lead	53.4	mg/kg
Mercury	0.217J	mg/kg

**Polynuclear Aromatics GC/MS**

**Semivolatile Organic Fuels**

Pyrene	0.138J	mg/kg
Diesel Range Organics	5540	mg/kg
Residual Range Organics	20600	mg/kg

**Semivolatile Organics GC/MS**

**Volatile Fuels**

**Volatile GC/MS**

bis(2-Ethylhexyl)phthalate	13.3J	mg/kg
Gasoline Range Organics	2.57J	mg/kg
Ethylbenzene	0.0133J	mg/kg
o-Xylene	0.0163J	mg/kg
P & M -Xylene	0.0387J	mg/kg
Styrene	0.0870	mg/kg
Toluene	0.0483	mg/kg
Xylenes (total)	0.0550J	mg/kg
Ammonia-N	1340	mg/kg

**Waters Department**

Client Sample ID: **SBIW20-101**

Lab Sample ID: 1211171002

**Metals by ICP/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Arsenic	2.34	mg/kg
Barium	91.0	mg/kg
Cadmium	1.17	mg/kg
Chromium	30.7	mg/kg
Lead	59.6	mg/kg
Mercury	0.147J	mg/kg

**Polynuclear Aromatics GC/MS**

**Semivolatile Organic Fuels**

Pyrene	0.0690J	mg/kg
Diesel Range Organics	2980	mg/kg
Residual Range Organics	11100	mg/kg

**Semivolatile Organics GC/MS**

**Volatile Fuels**

**Volatile GC/MS**

bis(2-Ethylhexyl)phthalate	6.16J	mg/kg
Gasoline Range Organics	3.20J	mg/kg
Ethylbenzene	0.0149J	mg/kg
o-Xylene	0.0124J	mg/kg
Styrene	0.523	mg/kg

### Detectable Results Summary

Client Sample ID: **SBIW20-2**

Lab Sample ID: 1211171003

**Metals by ICP/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Arsenic	4.59	mg/kg
Barium	62.6	mg/kg
Cadmium	0.0646J	mg/kg
Chromium	30.2	mg/kg
Lead	5.76	mg/kg
Diesel Range Organics	59.0	mg/kg
Residual Range Organics	139	mg/kg
Ammonia-N	550	mg/kg

**Semivolatile Organic Fuels**

**Waters Department**

Client Sample ID: **SBIW19-1**

Lab Sample ID: 1211171004

**Metals by ICP/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Arsenic	3.46J	mg/kg
Barium	84.3	mg/kg
Cadmium	0.389J	mg/kg
Chromium	28.7	mg/kg
Lead	21.2	mg/kg
Diesel Range Organics	1030	mg/kg
Residual Range Organics	5180	mg/kg
bis(2-Ethylhexyl)phthalate	4.81J	mg/kg
Gasoline Range Organics	1.52J	mg/kg
Naphthalene	0.0887J	mg/kg
Ammonia-N	25.3	mg/kg

**Semivolatile Organic Fuels**

**Semivolatile Organics GC/MS**

**Volatile Fuels**

**Volatile GC/MS**

**Waters Department**

Client Sample ID: **SBIW19-2**

Lab Sample ID: 1211171005

**Metals by ICP/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Arsenic	4.37	mg/kg
Barium	81.8	mg/kg
Cadmium	0.0702J	mg/kg
Chromium	31.3	mg/kg
Lead	6.28	mg/kg
Diesel Range Organics	28.1	mg/kg
Gasoline Range Organics	0.945J	mg/kg
Ammonia-N	3.49	mg/kg

**Semivolatile Organic Fuels**

**Volatile Fuels**

**Waters Department**

Client Sample ID: **Trip Blank 3**

Lab Sample ID: 1211171006

**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	1.02J	mg/kg





Results of **SBIW20-1**

Client Sample ID: **SBIW20-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171001  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.4  
Location:

Results by **Metals by ICP/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Arsenic	3.45	1.05	0.326	mg/kg	10		03/24/21 14:22
Barium	85.9	0.316	0.0989	mg/kg	10		03/24/21 14:22
Cadmium	1.11	0.210	0.0652	mg/kg	10		03/24/21 14:22
Chromium	33.5	1.05	0.326	mg/kg	10		03/24/21 14:22
Lead	53.4	0.210	0.0652	mg/kg	10		03/24/21 14:22
Mercury	0.217 J	0.316	0.105	mg/kg	10		03/24/21 14:22
Selenium	1.05 U	2.10	0.652	mg/kg	10		03/24/21 14:22
Silver	0.263 U	0.526	0.158	mg/kg	10		03/24/21 14:22

**Batch Information**

Analytical Batch: MMS11047  
Analytical Method: SW6020B  
Analyst: ACF  
Analytical Date/Time: 03/24/21 14:22  
Container ID: 1211171001-A

Prep Batch: MXX34046  
Prep Method: SW3050B  
Prep Date/Time: 03/23/21 12:00  
Prep Initial Wt./Vol.: 1.075 g  
Prep Extract Vol: 50 mL



Results of **SBIW20-1**

Client Sample ID: **SBIW20-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171001  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.4  
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
2-Methylnaphthalene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Acenaphthene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Acenaphthylene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Anthracene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Benzo(a)Anthracene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Benzo[a]pyrene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Benzo[b]Fluoranthene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Benzo[g,h,i]perylene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Benzo[k]fluoranthene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Chrysene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Dibenzo[a,h]anthracene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Fluoranthene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Fluorene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Indeno[1,2,3-c,d] pyrene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Naphthalene	0.0555 U	0.111	0.0278	mg/kg	5		03/29/21 23:15
Phenanthrene	0.0695 U	0.139	0.0348	mg/kg	5		03/29/21 23:15
Pyrene	0.138 J	0.139	0.0348	mg/kg	5		03/29/21 23:15
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	64.9	58-103		%	5		03/29/21 23:15
Fluoranthene-d10 (surr)	63.4	54-113		%	5		03/29/21 23:15

**Batch Information**

Analytical Batch: XMS12541  
Analytical Method: 8270D SIM (PAH)  
Analyst: CDM  
Analytical Date/Time: 03/29/21 23:15  
Container ID: 1211171001-A

Prep Batch: XXX44556  
Prep Method: SW3550C  
Prep Date/Time: 03/26/21 08:52  
Prep Initial Wt./Vol.: 22.853 g  
Prep Extract Vol: 5 mL



Results of **SBIW20-1**

Client Sample ID: **SBIW20-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171001  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	5540	89.8	27.9	mg/kg	4		03/23/21 13:54

**Surrogates**

5a Androstane (surr)	128	50-150		%	4		03/23/21 13:54
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:54  
Container ID: 1211171001-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.212 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	20600	2250	966	mg/kg	20		03/30/21 12:37

**Surrogates**

n-Triacontane-d62 (surr)	110	50-150		%	20		03/30/21 12:37
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**Batch Information**

Analytical Batch: XFC15883  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/30/21 12:37  
Container ID: 1211171001-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.212 g  
Prep Extract Vol: 5 mL



Results of SBIW20-1

Client Sample ID: SBIW20-1
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171001
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of SBIW20-1

Client Sample ID: SBIW20-1
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171001
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

## Results of SBIW20-1

Client Sample ID: **SBIW20-1**  
 Client Project ID: **103311-011 Cordova SREB UIC**  
 Lab Sample ID: 1211171001  
 Lab Project ID: 1211171

Collection Date: 03/15/21 13:35  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):88.4  
 Location:

## Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
2-Fluorobiphenyl (surr)	97.3	44-115		%	10		04/03/21 14:43
2-Fluorophenol (surr)	76.7	35-115		%	10		04/03/21 14:43
Nitrobenzene-d5 (surr)	91.7	37-122		%	10		04/03/21 14:43
Phenol-d6 (surr)	91.5	33-122		%	10		04/03/21 14:43
Terphenyl-d14 (surr)	91.3	54-127		%	10		04/03/21 14:43

## Batch Information

Analytical Batch: XMS12548  
 Analytical Method: SW8270D  
 Analyst: NRB  
 Analytical Date/Time: 04/03/21 14:43  
 Container ID: 1211171001-A

Prep Batch: XXX44558  
 Prep Method: SW3550C  
 Prep Date/Time: 03/26/21 11:22  
 Prep Initial Wt./Vol.: 22.792 g  
 Prep Extract Vol: 5 mL



Results of **SBIW20-1**

Client Sample ID: **SBIW20-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171001  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.4  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.57 J	3.40	1.02	mg/kg	1		03/23/21 01:45
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	73	50-150		%	1		03/23/21 01:45

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/23/21 01:45  
Container ID: 1211171001-D

Prep Batch: VXX36890  
Prep Method: SW5035A  
Prep Date/Time: 03/15/21 13:35  
Prep Initial Wt./Vol.: 51.533 g  
Prep Extract Vol: 30.9674 mL



Results of **SBIW20-1**

Client Sample ID: **SBIW20-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171001  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0136 U	0.0272	0.00843	mg/kg	1		03/25/21 15:43
1,1,1-Trichloroethane	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
1,1,2,2-Tetrachloroethane	0.00136 U	0.00272	0.000843	mg/kg	1		03/25/21 15:43
1,1,2-Trichloroethane	0.000545 U	0.00109	0.000340	mg/kg	1		03/25/21 15:43
1,1-Dichloroethane	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
1,1-Dichloroethene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
1,1-Dichloropropene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
1,2,3-Trichlorobenzene	0.0340 U	0.0680	0.0204	mg/kg	1		03/25/21 15:43
1,2,3-Trichloropropane	0.00136 U	0.00272	0.000843	mg/kg	1		03/25/21 15:43
1,2,4-Trichlorobenzene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
1,2,4-Trimethylbenzene	0.0340 U	0.0680	0.0204	mg/kg	1		03/25/21 15:43
1,2-Dibromo-3-chloropropane	0.0680 U	0.136	0.0421	mg/kg	1		03/25/21 15:43
1,2-Dibromoethane	0.000680 U	0.00136	0.000544	mg/kg	1		03/25/21 15:43
1,2-Dichlorobenzene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
1,2-Dichloroethane	0.00136 U	0.00272	0.000951	mg/kg	1		03/25/21 15:43
1,2-Dichloropropane	0.00680 U	0.0136	0.00421	mg/kg	1		03/25/21 15:43
1,3,5-Trimethylbenzene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
1,3-Dichlorobenzene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
1,3-Dichloropropane	0.00680 U	0.0136	0.00421	mg/kg	1		03/25/21 15:43
1,4-Dichlorobenzene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
2,2-Dichloropropane	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
2-Butanone (MEK)	0.170 U	0.340	0.106	mg/kg	1		03/25/21 15:43
2-Chlorotoluene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
2-Hexanone	0.0680 U	0.136	0.0421	mg/kg	1		03/25/21 15:43
4-Chlorotoluene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
4-Isopropyltoluene	0.0680 U	0.136	0.0340	mg/kg	1		03/25/21 15:43
4-Methyl-2-pentanone (MIBK)	0.170 U	0.340	0.106	mg/kg	1		03/25/21 15:43
Acetone	0.170 U	0.340	0.106	mg/kg	1		03/25/21 15:43
Benzene	0.00850 U	0.0170	0.00530	mg/kg	1		03/25/21 15:43
Bromobenzene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
Bromochloromethane	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
Bromodichloromethane	0.00136 U	0.00272	0.000843	mg/kg	1		03/25/21 15:43
Bromoform	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43
Bromomethane	0.0136 U	0.0272	0.00843	mg/kg	1		03/25/21 15:43
Carbon disulfide	0.0680 U	0.136	0.0421	mg/kg	1		03/25/21 15:43
Carbon tetrachloride	0.00850 U	0.0170	0.00530	mg/kg	1		03/25/21 15:43
Chlorobenzene	0.0170 U	0.0340	0.0106	mg/kg	1		03/25/21 15:43

Print Date: 04/06/2021 1:12:10PM

J flagging is activated





Results of SBIW20-1

Client Sample ID: SBIW20-1
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171001
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
Location:

Results by Volatile GC/MS

Table with columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of **SBIW20-1**

Client Sample ID: **SBIW20-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171001  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.4  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/25/21 15:43  
Container ID: 1211171001-D

Prep Batch: VXX36901  
Prep Method: SW5035A  
Prep Date/Time: 03/15/21 13:35  
Prep Initial Wt./Vol.: 51.533 g  
Prep Extract Vol: 30.9674 mL



Results of **SBIW20-1**

Client Sample ID: **SBIW20-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171001  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.4  
Location:

Results by **Waters Department**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Ammonia-N	1340	67.8	21.3	mg/kg	50		03/18/21 15:01

**Batch Information**

Analytical Batch: WDA4952  
Analytical Method: SM21 4500-NH3 G  
Analyst: EWW  
Analytical Date/Time: 03/18/21 15:01  
Container ID: 1211171001-A

Prep Batch: WXX13648  
Prep Method: METHOD  
Prep Date/Time: 03/18/21 10:27  
Prep Initial Wt./Vol.: 1.0013 g  
Prep Extract Vol: 6 mL



Results of **SBIW20-101**

Client Sample ID: **SBIW20-101**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171002  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.5  
Location:

Results by **Metals by ICP/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Arsenic	2.34	1.09	0.336	mg/kg	10		03/24/21 14:27
Barium	91.0	0.326	0.102	mg/kg	10		03/24/21 14:27
Cadmium	1.17	0.217	0.0673	mg/kg	10		03/24/21 14:27
Chromium	30.7	1.09	0.336	mg/kg	10		03/24/21 14:27
Lead	59.6	0.217	0.0673	mg/kg	10		03/24/21 14:27
Mercury	0.147 J	0.326	0.109	mg/kg	10		03/24/21 14:27
Selenium	1.09 U	2.17	0.673	mg/kg	10		03/24/21 14:27
Silver	0.272 U	0.543	0.163	mg/kg	10		03/24/21 14:27

**Batch Information**

Analytical Batch: MMS11047  
Analytical Method: SW6020B  
Analyst: ACF  
Analytical Date/Time: 03/24/21 14:27  
Container ID: 1211171002-A

Prep Batch: MX34046  
Prep Method: SW3050B  
Prep Date/Time: 03/23/21 12:00  
Prep Initial Wt./Vol.: 1.053 g  
Prep Extract Vol: 50 mL



Results of **SBIW20-101**

Client Sample ID: **SBIW20-101**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171002  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.5  
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
2-Methylnaphthalene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Acenaphthene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Acenaphthylene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Anthracene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Benzo(a)Anthracene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Benzo[a]pyrene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Benzo[b]Fluoranthene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Benzo[g,h,i]perylene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Benzo[k]fluoranthene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Chrysene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Dibenzo[a,h]anthracene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Fluoranthene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Fluorene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Indeno[1,2,3-c,d] pyrene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Naphthalene	0.0570 U	0.114	0.0284	mg/kg	5		03/30/21 15:03
Phenanthrene	0.0710 U	0.142	0.0355	mg/kg	5		03/30/21 15:03
Pyrene	0.0690 J	0.142	0.0355	mg/kg	5		03/30/21 15:03
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	62.5	58-103		%	5		03/30/21 15:03
Fluoranthene-d10 (surr)	65.7	54-113		%	5		03/30/21 15:03

**Batch Information**

Analytical Batch: XMS12542  
Analytical Method: 8270D SIM (PAH)  
Analyst: CDM  
Analytical Date/Time: 03/30/21 15:03  
Container ID: 1211171002-A

Prep Batch: XXX44556  
Prep Method: SW3550C  
Prep Date/Time: 03/26/21 08:52  
Prep Initial Wt./Vol.: 22.636 g  
Prep Extract Vol: 5 mL



Results of **SBIW20-101**

Client Sample ID: **SBIW20-101**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171002  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.5  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	2980	90.6	28.1	mg/kg	4		03/23/21 14:04
<b>Surrogates</b>							
5a Androstane (surr)	112	50-150		%	4		03/23/21 14:04

**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:04  
Container ID: 1211171002-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.263 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	11100	453	195	mg/kg	4		03/23/21 14:04
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	94.8	50-150		%	4		03/23/21 14:04

**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:04  
Container ID: 1211171002-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.263 g  
Prep Extract Vol: 5 mL



Results of SBIW20-101

Client Sample ID: SBIW20-101
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171002
Lab Project ID: 1211171

Collection Date: 03/15/21 13:25
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):87.5
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of SBIW20-101

Client Sample ID: SBIW20-101
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171002
Lab Project ID: 1211171

Collection Date: 03/15/21 13:25
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):87.5
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds like Benzo[b]Fluoranthene, Benzo[a,h]anthracene, etc., with their respective results and quality indicators.



## Results of SBIW20-101

Client Sample ID: **SBIW20-101**  
 Client Project ID: **103311-011 Cordova SREB UIC**  
 Lab Sample ID: 1211171002  
 Lab Project ID: 1211171

Collection Date: 03/15/21 13:25  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):87.5  
 Location:

## Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
2-Fluorobiphenyl (surr)	97.1	44-115		%	5		04/03/21 14:59
2-Fluorophenol (surr)	76.1	35-115		%	5		04/03/21 14:59
Nitrobenzene-d5 (surr)	87.6	37-122		%	5		04/03/21 14:59
Phenol-d6 (surr)	92.6	33-122		%	5		04/03/21 14:59
Terphenyl-d14 (surr)	84.3	54-127		%	5		04/03/21 14:59

## Batch Information

Analytical Batch: XMS12548  
 Analytical Method: SW8270D  
 Analyst: NRB  
 Analytical Date/Time: 04/03/21 14:59  
 Container ID: 1211171002-A

Prep Batch: XXX44558  
 Prep Method: SW3550C  
 Prep Date/Time: 03/26/21 11:22  
 Prep Initial Wt./Vol.: 22.597 g  
 Prep Extract Vol: 5 mL

## Results of SBIW20-101

Client Sample ID: **SBIW20-101**  
 Client Project ID: **103311-011 Cordova SREB UIC**  
 Lab Sample ID: 1211171002  
 Lab Project ID: 1211171

Collection Date: 03/15/21 13:25  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):87.5  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	3.20 J	3.55	1.06	mg/kg	1		03/23/21 02:03
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	70.8	50-150		%	1		03/23/21 02:03

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/23/21 02:03  
 Container ID: 1211171002-C

Prep Batch: VXX36890  
 Prep Method: SW5035A  
 Prep Date/Time: 03/15/21 13:25  
 Prep Initial Wt./Vol.: 50.426 g  
 Prep Extract Vol: 31.3061 mL



Results of **SBIW20-101**

Client Sample ID: **SBIW20-101**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171002  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.5  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0142 U	0.0284	0.00880	mg/kg	1		03/25/21 15:28
1,1,1-Trichloroethane	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
1,1,2,2-Tetrachloroethane	0.00142 U	0.00284	0.000880	mg/kg	1		03/25/21 15:28
1,1,2-Trichloroethane	0.000570 U	0.00114	0.000355	mg/kg	1		03/25/21 15:28
1,1-Dichloroethane	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
1,1-Dichloroethene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
1,1-Dichloropropene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
1,2,3-Trichlorobenzene	0.0355 U	0.0710	0.0213	mg/kg	1		03/25/21 15:28
1,2,3-Trichloropropane	0.00142 U	0.00284	0.000880	mg/kg	1		03/25/21 15:28
1,2,4-Trichlorobenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
1,2,4-Trimethylbenzene	0.0355 U	0.0710	0.0213	mg/kg	1		03/25/21 15:28
1,2-Dibromo-3-chloropropane	0.0710 U	0.142	0.0440	mg/kg	1		03/25/21 15:28
1,2-Dibromoethane	0.000710 U	0.00142	0.000568	mg/kg	1		03/25/21 15:28
1,2-Dichlorobenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
1,2-Dichloroethane	0.00142 U	0.00284	0.000993	mg/kg	1		03/25/21 15:28
1,2-Dichloropropane	0.00710 U	0.0142	0.00440	mg/kg	1		03/25/21 15:28
1,3,5-Trimethylbenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
1,3-Dichlorobenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
1,3-Dichloropropane	0.00710 U	0.0142	0.00440	mg/kg	1		03/25/21 15:28
1,4-Dichlorobenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
2,2-Dichloropropane	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
2-Butanone (MEK)	0.177 U	0.355	0.111	mg/kg	1		03/25/21 15:28
2-Chlorotoluene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
2-Hexanone	0.0710 U	0.142	0.0440	mg/kg	1		03/25/21 15:28
4-Chlorotoluene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
4-Isopropyltoluene	0.0710 U	0.142	0.0355	mg/kg	1		03/25/21 15:28
4-Methyl-2-pentanone (MIBK)	0.177 U	0.355	0.111	mg/kg	1		03/25/21 15:28
Acetone	0.177 U	0.355	0.111	mg/kg	1		03/25/21 15:28
Benzene	0.00885 U	0.0177	0.00553	mg/kg	1		03/25/21 15:28
Bromobenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
Bromochloromethane	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
Bromodichloromethane	0.00142 U	0.00284	0.000880	mg/kg	1		03/25/21 15:28
Bromoform	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
Bromomethane	0.0142 U	0.0284	0.00880	mg/kg	1		03/25/21 15:28
Carbon disulfide	0.0710 U	0.142	0.0440	mg/kg	1		03/25/21 15:28
Carbon tetrachloride	0.00885 U	0.0177	0.00553	mg/kg	1		03/25/21 15:28
Chlorobenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28



Results of **SBIW20-101**

Client Sample ID: **SBIW20-101**  
 Client Project ID: **103311-011 Cordova SREB UIC**  
 Lab Sample ID: 1211171002  
 Lab Project ID: 1211171

Collection Date: 03/15/21 13:25  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):87.5  
 Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.142 U	0.284	0.0880	mg/kg	1		03/25/21 15:28
Chloroform	0.00284 U	0.00568	0.00142	mg/kg	1		03/25/21 15:28
Chloromethane	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
cis-1,2-Dichloroethene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
cis-1,3-Dichloropropene	0.00885 U	0.0177	0.00553	mg/kg	1		03/25/21 15:28
Dibromochloromethane	0.00355 U	0.00710	0.00213	mg/kg	1		03/25/21 15:28
Dibromomethane	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
Dichlorodifluoromethane	0.0355 U	0.0710	0.0213	mg/kg	1		03/25/21 15:28
Ethylbenzene	0.0149 J	0.0355	0.0111	mg/kg	1		03/25/21 15:28
Freon-113	0.0710 U	0.142	0.0440	mg/kg	1		03/25/21 15:28
Hexachlorobutadiene	0.0142 U	0.0284	0.00880	mg/kg	1		03/25/21 15:28
Isopropylbenzene (Cumene)	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
Methylene chloride	0.0710 U	0.142	0.0440	mg/kg	1		03/25/21 15:28
Methyl-t-butyl ether	0.0710 U	0.142	0.0440	mg/kg	1		03/25/21 15:28
Naphthalene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
n-Butylbenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
n-Propylbenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
o-Xylene	0.0124 J	0.0355	0.0111	mg/kg	1		03/25/21 15:28
P & M -Xylene	0.0355 U	0.0710	0.0213	mg/kg	1		03/25/21 15:28
sec-Butylbenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
Styrene	0.523	0.0355	0.0111	mg/kg	1		03/25/21 15:28
tert-Butylbenzene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
Tetrachloroethene	0.00885 U	0.0177	0.00553	mg/kg	1		03/25/21 15:28
Toluene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
trans-1,2-Dichloroethene	0.0177 U	0.0355	0.0111	mg/kg	1		03/25/21 15:28
trans-1,3-Dichloropropene	0.00885 U	0.0177	0.00553	mg/kg	1		03/25/21 15:28
Trichloroethene	0.00355 U	0.00710	0.00213	mg/kg	1		03/25/21 15:28
Trichlorofluoromethane	0.0355 U	0.0710	0.0213	mg/kg	1		03/25/21 15:28
Vinyl acetate	0.0710 U	0.142	0.0440	mg/kg	1		03/25/21 15:28
Vinyl chloride	0.000570 U	0.00114	0.000355	mg/kg	1		03/25/21 15:28
Xylenes (total)	0.0530 U	0.106	0.0324	mg/kg	1		03/25/21 15:28
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	107	71-136		%	1		03/25/21 15:28
4-Bromofluorobenzene (surr)	70.5	55-151		%	1		03/25/21 15:28
Toluene-d8 (surr)	98	85-116		%	1		03/25/21 15:28

## Results of SBIW20-101

Client Sample ID: **SBIW20-101**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171002  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.5  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/25/21 15:28  
Container ID: 1211171002-C

Prep Batch: VXX36901  
Prep Method: SW5035A  
Prep Date/Time: 03/15/21 13:25  
Prep Initial Wt./Vol.: 50.426 g  
Prep Extract Vol: 31.3061 mL



Results of **SBIW20-2**

Client Sample ID: **SBIW20-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171003  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.6  
Location:

Results by **Metals by ICP/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Arsenic	4.59	0.999	0.310	mg/kg	10		03/24/21 14:44
Barium	62.6	0.300	0.0940	mg/kg	10		03/24/21 14:44
Cadmium	0.0646 J	0.200	0.0620	mg/kg	10		03/24/21 14:44
Chromium	30.2	0.999	0.310	mg/kg	10		03/24/21 14:44
Lead	5.76	0.200	0.0620	mg/kg	10		03/24/21 14:44
Mercury	0.150 U	0.300	0.0999	mg/kg	10		03/24/21 14:44
Selenium	1.00 U	2.00	0.620	mg/kg	10		03/24/21 14:44
Silver	0.250 U	0.500	0.150	mg/kg	10		03/24/21 14:44

**Batch Information**

Analytical Batch: MMS11047  
Analytical Method: SW6020B  
Analyst: ACF  
Analytical Date/Time: 03/24/21 14:44  
Container ID: 1211171003-A

Prep Batch: MX34046  
Prep Method: SW3050B  
Prep Date/Time: 03/23/21 12:00  
Prep Initial Wt./Vol.: 1.069 g  
Prep Extract Vol: 50 mL



Results of **SBIW20-2**

Client Sample ID: **SBIW20-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171003  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.6  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	59.0	21.3	6.60	mg/kg	1		03/23/21 12:45
<b>Surrogates</b>							
5a Androstane (surr)	89.7	50-150		%	1		03/23/21 12:45

**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 12:45  
Container ID: 1211171003-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.119 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	139	106	45.8	mg/kg	1		03/23/21 12:45
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	87.8	50-150		%	1		03/23/21 12:45

**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 12:45  
Container ID: 1211171003-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.119 g  
Prep Extract Vol: 5 mL



Results of SBIW20-2

Client Sample ID: SBIW20-2
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171003
Lab Project ID: 1211171

Collection Date: 03/15/21 13:40
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):93.6
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.





Results of SBIW20-2

Client Sample ID: SBIW20-2
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171003
Lab Project ID: 1211171

Collection Date: 03/15/21 13:40
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):93.6
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various organic compounds like Benzo[b]Fluoranthene, Benzo[a,h]anthracene, etc., with their respective results and detection limits.

## Results of SBIW20-2

Client Sample ID: **SBIW20-2**  
 Client Project ID: **103311-011 Cordova SREB UIC**  
 Lab Sample ID: 1211171003  
 Lab Project ID: 1211171

Collection Date: 03/15/21 13:40  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):93.6  
 Location:

## Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
2-Fluorobiphenyl (surr)	80.4	44-115		%	1		04/03/21 15:33
2-Fluorophenol (surr)	61.1	35-115		%	1		04/03/21 15:33
Nitrobenzene-d5 (surr)	71.1	37-122		%	1		04/03/21 15:33
Phenol-d6 (surr)	72.9	33-122		%	1		04/03/21 15:33
Terphenyl-d14 (surr)	76.8	54-127		%	1		04/03/21 15:33

## Batch Information

Analytical Batch: XMS12548  
 Analytical Method: SW8270D  
 Analyst: NRB  
 Analytical Date/Time: 04/03/21 15:33  
 Container ID: 1211171003-A

Prep Batch: XXX44558  
 Prep Method: SW3550C  
 Prep Date/Time: 03/26/21 11:22  
 Prep Initial Wt./Vol.: 22.843 g  
 Prep Extract Vol: 1 mL



Results of **SBIW20-2**

Client Sample ID: **SBIW20-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171003  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.6  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.71 U	3.41	1.02	mg/kg	1		03/23/21 02:20
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	95.1	50-150		%	1		03/23/21 02:20

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/23/21 02:20  
Container ID: 1211171003-D

Prep Batch: VXX36890  
Prep Method: SW5035A  
Prep Date/Time: 03/15/21 13:40  
Prep Initial Wt./Vol.: 43.56 g  
Prep Extract Vol: 27.7901 mL



Results of **SBIW20-2**

Client Sample ID: **SBIW20-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171003  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.6  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0137 U	0.0273	0.00845	mg/kg	1		03/25/21 15:12
1,1,1-Trichloroethane	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
1,1,2,2-Tetrachloroethane	0.00136 U	0.00273	0.000845	mg/kg	1		03/25/21 15:12
1,1,2-Trichloroethane	0.000545 U	0.00109	0.000341	mg/kg	1		03/25/21 15:12
1,1-Dichloroethane	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
1,1-Dichloroethene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
1,1-Dichloropropene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
1,2,3-Trichlorobenzene	0.0341 U	0.0682	0.0204	mg/kg	1		03/25/21 15:12
1,2,3-Trichloropropane	0.00136 U	0.00273	0.000845	mg/kg	1		03/25/21 15:12
1,2,4-Trichlorobenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
1,2,4-Trimethylbenzene	0.0341 U	0.0682	0.0204	mg/kg	1		03/25/21 15:12
1,2-Dibromo-3-chloropropane	0.0680 U	0.136	0.0423	mg/kg	1		03/25/21 15:12
1,2-Dibromoethane	0.000680 U	0.00136	0.000545	mg/kg	1		03/25/21 15:12
1,2-Dichlorobenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
1,2-Dichloroethane	0.00136 U	0.00273	0.000954	mg/kg	1		03/25/21 15:12
1,2-Dichloropropane	0.00680 U	0.0136	0.00423	mg/kg	1		03/25/21 15:12
1,3,5-Trimethylbenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
1,3-Dichlorobenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
1,3-Dichloropropane	0.00680 U	0.0136	0.00423	mg/kg	1		03/25/21 15:12
1,4-Dichlorobenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
2,2-Dichloropropane	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
2-Butanone (MEK)	0.171 U	0.341	0.106	mg/kg	1		03/25/21 15:12
2-Chlorotoluene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
2-Hexanone	0.0680 U	0.136	0.0423	mg/kg	1		03/25/21 15:12
4-Chlorotoluene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
4-Isopropyltoluene	0.0680 U	0.136	0.0341	mg/kg	1		03/25/21 15:12
4-Methyl-2-pentanone (MIBK)	0.171 U	0.341	0.106	mg/kg	1		03/25/21 15:12
Acetone	0.171 U	0.341	0.106	mg/kg	1		03/25/21 15:12
Benzene	0.00850 U	0.0170	0.00532	mg/kg	1		03/25/21 15:12
Bromobenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
Bromochloromethane	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
Bromodichloromethane	0.00136 U	0.00273	0.000845	mg/kg	1		03/25/21 15:12
Bromoform	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
Bromomethane	0.0137 U	0.0273	0.00845	mg/kg	1		03/25/21 15:12
Carbon disulfide	0.0680 U	0.136	0.0423	mg/kg	1		03/25/21 15:12
Carbon tetrachloride	0.00850 U	0.0170	0.00532	mg/kg	1		03/25/21 15:12
Chlorobenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12

Print Date: 04/06/2021 1:12:10PM

J flagging is activated



Results of **SBIW20-2**

Client Sample ID: **SBIW20-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171003  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.6  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.137 U	0.273	0.0845	mg/kg	1		03/25/21 15:12
Chloroform	0.00273 U	0.00545	0.00136	mg/kg	1		03/25/21 15:12
Chloromethane	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
cis-1,2-Dichloroethene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
cis-1,3-Dichloropropene	0.00850 U	0.0170	0.00532	mg/kg	1		03/25/21 15:12
Dibromochloromethane	0.00341 U	0.00682	0.00204	mg/kg	1		03/25/21 15:12
Dibromomethane	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
Dichlorodifluoromethane	0.0341 U	0.0682	0.0204	mg/kg	1		03/25/21 15:12
Ethylbenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
Freon-113	0.0680 U	0.136	0.0423	mg/kg	1		03/25/21 15:12
Hexachlorobutadiene	0.0137 U	0.0273	0.00845	mg/kg	1		03/25/21 15:12
Isopropylbenzene (Cumene)	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
Methylene chloride	0.0680 U	0.136	0.0423	mg/kg	1		03/25/21 15:12
Methyl-t-butyl ether	0.0680 U	0.136	0.0423	mg/kg	1		03/25/21 15:12
Naphthalene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
n-Butylbenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
n-Propylbenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
o-Xylene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
P & M -Xylene	0.0341 U	0.0682	0.0204	mg/kg	1		03/25/21 15:12
sec-Butylbenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
Styrene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
tert-Butylbenzene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
Tetrachloroethene	0.00850 U	0.0170	0.00532	mg/kg	1		03/25/21 15:12
Toluene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
trans-1,2-Dichloroethene	0.0170 U	0.0341	0.0106	mg/kg	1		03/25/21 15:12
trans-1,3-Dichloropropene	0.00850 U	0.0170	0.00532	mg/kg	1		03/25/21 15:12
Trichloroethene	0.00341 U	0.00682	0.00204	mg/kg	1		03/25/21 15:12
Trichlorofluoromethane	0.0341 U	0.0682	0.0204	mg/kg	1		03/25/21 15:12
Vinyl acetate	0.0680 U	0.136	0.0423	mg/kg	1		03/25/21 15:12
Vinyl chloride	0.000545 U	0.00109	0.000341	mg/kg	1		03/25/21 15:12
Xylenes (total)	0.0510 U	0.102	0.0311	mg/kg	1		03/25/21 15:12
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/25/21 15:12
4-Bromofluorobenzene (surr)	93.2	55-151		%	1		03/25/21 15:12
Toluene-d8 (surr)	97.4	85-116		%	1		03/25/21 15:12

## Results of SBIW20-2

Client Sample ID: **SBIW20-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171003  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.6  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/25/21 15:12  
Container ID: 1211171003-D

Prep Batch: VXX36901  
Prep Method: SW5035A  
Prep Date/Time: 03/15/21 13:40  
Prep Initial Wt./Vol.: 43.56 g  
Prep Extract Vol: 27.7901 mL



**Results of SBIW20-2**

Client Sample ID: **SBIW20-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171003  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.6  
Location:

**Results by Waters Department**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Ammonia-N	550	61.4	19.3	mg/kg	50		03/18/21 15:06

**Batch Information**

Analytical Batch: WDA4952  
Analytical Method: SM21 4500-NH3 G  
Analyst: EWW  
Analytical Date/Time: 03/18/21 15:06  
Container ID: 1211171003-A

Prep Batch: WXX13648  
Prep Method: METHOD  
Prep Date/Time: 03/18/21 10:27  
Prep Initial Wt./Vol.: 1.044 g  
Prep Extract Vol: 6 mL



**Results of SBIW19-1**

Client Sample ID: **SBIW19-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171004  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

**Results by Metals by ICP/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Arsenic	3.46 J	3.77	1.17	mg/kg	10		03/24/21 14:48
Barium	84.3	1.13	0.354	mg/kg	10		03/24/21 14:48
Cadmium	0.389 J	0.754	0.234	mg/kg	10		03/24/21 14:48
Chromium	28.7	3.77	1.17	mg/kg	10		03/24/21 14:48
Lead	21.2	0.754	0.234	mg/kg	10		03/24/21 14:48
Mercury	0.565 U	1.13	0.377	mg/kg	10		03/24/21 14:48
Selenium	3.77 U	7.54	2.34	mg/kg	10		03/24/21 14:48
Silver	0.940 U	1.88	0.565	mg/kg	10		03/24/21 14:48

**Batch Information**

Analytical Batch: MMS11047  
Analytical Method: SW6020B  
Analyst: ACF  
Analytical Date/Time: 03/24/21 14:48  
Container ID: 1211171004-A

Prep Batch: MXX34046  
Prep Method: SW3050B  
Prep Date/Time: 03/23/21 12:00  
Prep Initial Wt./Vol.: 0.28 g  
Prep Extract Vol: 50 mL





Results of **SBIW19-1**

Client Sample ID: **SBIW19-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171004  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	1030	83.7	25.9	mg/kg	4		03/23/21 14:14

**Surrogates**

5a Androstane (surr)	87.8	50-150		%	4		03/23/21 14:14
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:14  
Container ID: 1211171004-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.266 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	5180	418	180	mg/kg	4		03/23/21 14:14

**Surrogates**

n-Triacontane-d62 (surr)	75	50-150		%	4		03/23/21 14:14
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:14  
Container ID: 1211171004-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.266 g  
Prep Extract Vol: 5 mL



Results of SBIW19-1

Client Sample ID: SBIW19-1
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171004
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):94.8
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their corresponding test results.



Results of SBIW19-1

Client Sample ID: SBIW19-1
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171004
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):94.8
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of **SBIW19-1**

Client Sample ID: **SBIW19-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171004  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

Results by **Semivolatile Organics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
2-Fluorobiphenyl (surr)	96.7	44-115		%	5		04/03/21 15:16
2-Fluorophenol (surr)	81.3	35-115		%	5		04/03/21 15:16
Nitrobenzene-d5 (surr)	90.8	37-122		%	5		04/03/21 15:16
Phenol-d6 (surr)	93.8	33-122		%	5		04/03/21 15:16
Terphenyl-d14 (surr)	83.5	54-127		%	5		04/03/21 15:16

**Batch Information**

Analytical Batch: XMS12548  
Analytical Method: SW8270D  
Analyst: NRB  
Analytical Date/Time: 04/03/21 15:16  
Container ID: 1211171004-A

Prep Batch: XXX44558  
Prep Method: SW3550C  
Prep Date/Time: 03/26/21 11:22  
Prep Initial Wt./Vol.: 22.763 g  
Prep Extract Vol: 5 mL



Results of **SBIW19-1**

Client Sample ID: **SBIW19-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171004  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.52 J	2.86	0.859	mg/kg	1		03/22/21 18:40
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	82	50-150		%	1		03/22/21 18:40

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/22/21 18:40  
Container ID: 1211171004-D

Prep Batch: VXX36890  
Prep Method: SW5035A  
Prep Date/Time: 03/15/21 13:05  
Prep Initial Wt./Vol.: 50.951 g  
Prep Extract Vol: 27.6521 mL



Results of **SBIW19-1**

Client Sample ID: **SBIW19-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171004  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0575 U	0.115	0.0355	mg/kg	5		03/26/21 20:03
1,1,1-Trichloroethane	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
1,1,2,2-Tetrachloroethane	0.00575 U	0.0115	0.00355	mg/kg	5		03/26/21 20:03
1,1,2-Trichloroethane	0.00229 U	0.00458	0.00143	mg/kg	5		03/26/21 20:03
1,1-Dichloroethane	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
1,1-Dichloroethene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
1,1-Dichloropropene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
1,2,3-Trichlorobenzene	0.143 U	0.286	0.0859	mg/kg	5		03/26/21 20:03
1,2,3-Trichloropropane	0.00575 U	0.0115	0.00355	mg/kg	5		03/26/21 20:03
1,2,4-Trichlorobenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
1,2,4-Trimethylbenzene	0.143 U	0.286	0.0859	mg/kg	5		03/26/21 20:03
1,2-Dibromo-3-chloropropane	0.286 U	0.573	0.177	mg/kg	5		03/26/21 20:03
1,2-Dibromoethane	0.00286 U	0.00573	0.00229	mg/kg	5		03/26/21 20:03
1,2-Dichlorobenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
1,2-Dichloroethane	0.00575 U	0.0115	0.00401	mg/kg	5		03/26/21 20:03
1,2-Dichloropropane	0.0286 U	0.0573	0.0177	mg/kg	5		03/26/21 20:03
1,3,5-Trimethylbenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
1,3-Dichlorobenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
1,3-Dichloropropane	0.0286 U	0.0573	0.0177	mg/kg	5		03/26/21 20:03
1,4-Dichlorobenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
2,2-Dichloropropane	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
2-Butanone (MEK)	0.715 U	1.43	0.447	mg/kg	5		03/26/21 20:03
2-Chlorotoluene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
2-Hexanone	0.286 U	0.573	0.177	mg/kg	5		03/26/21 20:03
4-Chlorotoluene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
4-Isopropyltoluene	0.286 U	0.573	0.143	mg/kg	5		03/26/21 20:03
4-Methyl-2-pentanone (MIBK)	0.715 U	1.43	0.447	mg/kg	5		03/26/21 20:03
Acetone	0.715 U	1.43	0.447	mg/kg	5		03/26/21 20:03
Benzene	0.0358 U	0.0716	0.0223	mg/kg	5		03/26/21 20:03
Bromobenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
Bromochloromethane	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
Bromodichloromethane	0.00575 U	0.0115	0.00355	mg/kg	5		03/26/21 20:03
Bromoform	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
Bromomethane	0.0575 U	0.115	0.0355	mg/kg	5		03/26/21 20:03
Carbon disulfide	0.286 U	0.573	0.177	mg/kg	5		03/26/21 20:03
Carbon tetrachloride	0.0358 U	0.0716	0.0223	mg/kg	5		03/26/21 20:03
Chlorobenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03



Results of **SBIW19-1**

Client Sample ID: **SBIW19-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171004  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.575 U	1.15	0.355	mg/kg	5		03/26/21 20:03
Chloroform	0.0115 U	0.0229	0.00573	mg/kg	5		03/26/21 20:03
Chloromethane	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
cis-1,2-Dichloroethene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
cis-1,3-Dichloropropene	0.0358 U	0.0716	0.0223	mg/kg	5		03/26/21 20:03
Dibromochloromethane	0.0143 U	0.0286	0.00859	mg/kg	5		03/26/21 20:03
Dibromomethane	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
Dichlorodifluoromethane	0.143 U	0.286	0.0859	mg/kg	5		03/26/21 20:03
Ethylbenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
Freon-113	0.286 U	0.573	0.177	mg/kg	5		03/26/21 20:03
Hexachlorobutadiene	0.0575 U	0.115	0.0355	mg/kg	5		03/26/21 20:03
Isopropylbenzene (Cumene)	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
Methylene chloride	0.286 U	0.573	0.177	mg/kg	5		03/26/21 20:03
Methyl-t-butyl ether	0.286 U	0.573	0.177	mg/kg	5		03/26/21 20:03
Naphthalene	0.0887 J	0.143	0.0447	mg/kg	5		03/26/21 20:03
n-Butylbenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
n-Propylbenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
o-Xylene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
P & M -Xylene	0.143 U	0.286	0.0859	mg/kg	5		03/26/21 20:03
sec-Butylbenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
Styrene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
tert-Butylbenzene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
Tetrachloroethene	0.0358 U	0.0716	0.0223	mg/kg	5		03/26/21 20:03
Toluene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
trans-1,2-Dichloroethene	0.0715 U	0.143	0.0447	mg/kg	5		03/26/21 20:03
trans-1,3-Dichloropropene	0.0358 U	0.0716	0.0223	mg/kg	5		03/26/21 20:03
Trichloroethene	0.0143 U	0.0286	0.00859	mg/kg	5		03/26/21 20:03
Trichlorofluoromethane	0.143 U	0.286	0.0859	mg/kg	5		03/26/21 20:03
Vinyl acetate	0.286 U	0.573	0.177	mg/kg	5		03/26/21 20:03
Vinyl chloride	0.00229 U	0.00458	0.00143	mg/kg	5		03/26/21 20:03
Xylenes (total)	0.215 U	0.429	0.131	mg/kg	5		03/26/21 20:03
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	109	71-136		%	5		03/26/21 20:03
4-Bromofluorobenzene (surr)	78.1	55-151		%	5		03/26/21 20:03
Toluene-d8 (surr)	98	85-116		%	5		03/26/21 20:03



Results of **SBIW19-1**

Client Sample ID: **SBIW19-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171004  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20622  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/26/21 20:03  
Container ID: 1211171004-D

Prep Batch: VXX36913  
Prep Method: SW5035A  
Prep Date/Time: 03/15/21 13:05  
Prep Initial Wt./Vol.: 50.951 g  
Prep Extract Vol: 27.6521 mL





**Results of SBIW19-1**

Client Sample ID: **SBIW19-1**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171004  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

**Results by Waters Department**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Ammonia-N	25.3	1.21	0.381	mg/kg	1		03/18/21 13:41

**Batch Information**

Analytical Batch: WDA4952  
Analytical Method: SM21 4500-NH3 G  
Analyst: EWW  
Analytical Date/Time: 03/18/21 13:41  
Container ID: 1211171004-A

Prep Batch: WXX13648  
Prep Method: METHOD  
Prep Date/Time: 03/18/21 10:27  
Prep Initial Wt./Vol.: 1.0453 g  
Prep Extract Vol: 6 mL



**Results of SBIW19-2**

Client Sample ID: **SBIW19-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171005  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:10  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.1  
Location:

**Results by Metals by ICP/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chromium	31.3	0.970	0.301	mg/kg	10		03/24/21 14:01
Selenium	0.970 U	1.94	0.602	mg/kg	10		03/24/21 14:01
Silver	0.242 U	0.485	0.146	mg/kg	10		03/24/21 14:01
Barium	81.8	0.291	0.0912	mg/kg	10		03/24/21 14:01
Cadmium	0.0702 J	0.194	0.0602	mg/kg	10		03/24/21 14:01
Lead	6.28	0.194	0.0602	mg/kg	10		03/24/21 14:01
Mercury	0.145 U	0.291	0.0970	mg/kg	10		03/24/21 14:01
Arsenic	4.37	0.970	0.301	mg/kg	10		03/24/21 14:01

**Batch Information**

Analytical Batch: MMS11047  
Analytical Method: SW6020B  
Analyst: ACF  
Analytical Date/Time: 03/24/21 14:01  
Container ID: 1211171005-A

Prep Batch: MXX34046  
Prep Method: SW3050B  
Prep Date/Time: 03/23/21 12:00  
Prep Initial Wt./Vol.: 1.072 g  
Prep Extract Vol: 50 mL



Results of **SBIW19-2**

Client Sample ID: **SBIW19-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171005  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:10  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.1  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	28.1	20.6	6.38	mg/kg	1		03/23/21 12:55

**Surrogates**

5a Androstane (surr)	91.1	50-150		%	1		03/23/21 12:55
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 12:55  
Container ID: 1211171005-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.314 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	51.5 U	103	44.3	mg/kg	1		03/23/21 12:55

**Surrogates**

n-Triacontane-d62 (surr)	89.7	50-150		%	1		03/23/21 12:55
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 12:55  
Container ID: 1211171005-A

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.314 g  
Prep Extract Vol: 5 mL



Results of SBIW19-2

Client Sample ID: SBIW19-2
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171005
Lab Project ID: 1211171

Collection Date: 03/15/21 13:10
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):96.1
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of SBIW19-2

Client Sample ID: SBIW19-2
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171005
Lab Project ID: 1211171

Collection Date: 03/15/21 13:10
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):96.1
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

## Results of SBIW19-2

Client Sample ID: **SBIW19-2**  
 Client Project ID: **103311-011 Cordova SREB UIC**  
 Lab Sample ID: 1211171005  
 Lab Project ID: 1211171

Collection Date: 03/15/21 13:10  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):96.1  
 Location:

## Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
2-Fluorobiphenyl (surr)	79.5	44-115		%	1		04/03/21 15:50
2-Fluorophenol (surr)	62.8	35-115		%	1		04/03/21 15:50
Nitrobenzene-d5 (surr)	73.3	37-122		%	1		04/03/21 15:50
Phenol-d6 (surr)	75.9	33-122		%	1		04/03/21 15:50
Terphenyl-d14 (surr)	78.5	54-127		%	1		04/03/21 15:50

## Batch Information

Analytical Batch: XMS12548  
 Analytical Method: SW8270D  
 Analyst: NRB  
 Analytical Date/Time: 04/03/21 15:50  
 Container ID: 1211171005-A

Prep Batch: XXX44558  
 Prep Method: SW3550C  
 Prep Date/Time: 03/26/21 11:22  
 Prep Initial Wt./Vol.: 22.751 g  
 Prep Extract Vol: 1 mL

## Results of SBIW19-2

Client Sample ID: **SBIW19-2**  
 Client Project ID: **103311-011 Cordova SREB UIC**  
 Lab Sample ID: 1211171005  
 Lab Project ID: 1211171

Collection Date: 03/15/21 13:10  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):96.1  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.945 J	2.73	0.819	mg/kg	1		03/22/21 18:58
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	99.5	50-150		%	1		03/22/21 18:58

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 18:58  
 Container ID: 1211171005-D

Prep Batch: VXX36890  
 Prep Method: SW5035A  
 Prep Date/Time: 03/15/21 13:10  
 Prep Initial Wt./Vol.: 51.399 g  
 Prep Extract Vol: 26.9809 mL



Results of **SBIW19-2**

Client Sample ID: **SBIW19-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171005  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:10  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.1  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0109 U	0.0218	0.00677	mg/kg	1		03/25/21 14:41
1,1,2-Trichloroethane	0.000437 U	0.000874	0.000273	mg/kg	1		03/25/21 14:41
1,1-Dichloropropene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,2,4-Trichlorobenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,2-Dibromoethane	0.000545 U	0.00109	0.000437	mg/kg	1		03/25/21 14:41
1,2-Dichloropropane	0.00545 U	0.0109	0.00339	mg/kg	1		03/25/21 14:41
1,3-Dichloropropane	0.00545 U	0.0109	0.00339	mg/kg	1		03/25/21 14:41
2-Butanone (MEK)	0.137 U	0.273	0.0852	mg/kg	1		03/25/21 14:41
4-Chlorotoluene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
4-Isopropyltoluene	0.0545 U	0.109	0.0273	mg/kg	1		03/25/21 14:41
4-Methyl-2-pentanone (MIBK)	0.137 U	0.273	0.0852	mg/kg	1		03/25/21 14:41
Acetone	0.137 U	0.273	0.0852	mg/kg	1		03/25/21 14:41
Benzene	0.00680 U	0.0136	0.00426	mg/kg	1		03/25/21 14:41
Bromobenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
Bromochloromethane	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,2,3-Trichloropropane	0.00109 U	0.00218	0.000677	mg/kg	1		03/25/21 14:41
1,2,4-Trimethylbenzene	0.0273 U	0.0546	0.0164	mg/kg	1		03/25/21 14:41
1,2-Dibromo-3-chloropropane	0.0545 U	0.109	0.0339	mg/kg	1		03/25/21 14:41
1,2-Dichlorobenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,2-Dichloroethane	0.00109 U	0.00218	0.000764	mg/kg	1		03/25/21 14:41
1,3,5-Trimethylbenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,3-Dichlorobenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,4-Dichlorobenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
2,2-Dichloropropane	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,1,1-Trichloroethane	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,1,1,2-Tetrachloroethane	0.00109 U	0.00218	0.000677	mg/kg	1		03/25/21 14:41
2-Chlorotoluene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,1-Dichloroethane	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
1,1-Dichloroethene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
2-Hexanone	0.0545 U	0.109	0.0339	mg/kg	1		03/25/21 14:41
1,2,3-Trichlorobenzene	0.0273 U	0.0546	0.0164	mg/kg	1		03/25/21 14:41
Bromodichloromethane	0.00109 U	0.00218	0.000677	mg/kg	1		03/25/21 14:41
Bromoform	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
Bromomethane	0.0109 U	0.0218	0.00677	mg/kg	1		03/25/21 14:41
Carbon disulfide	0.0545 U	0.109	0.0339	mg/kg	1		03/25/21 14:41
Carbon tetrachloride	0.00680 U	0.0136	0.00426	mg/kg	1		03/25/21 14:41
Chlorobenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41

Print Date: 04/06/2021 1:12:10PM

J flagging is activated





Results of **SBIW19-2**

Client Sample ID: **SBIW19-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171005  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:10  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.1  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.109 U	0.218	0.0677	mg/kg	1		03/25/21 14:41
Chloroform	0.00218 U	0.00437	0.00109	mg/kg	1		03/25/21 14:41
Chloromethane	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
cis-1,2-Dichloroethene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
cis-1,3-Dichloropropene	0.00680 U	0.0136	0.00426	mg/kg	1		03/25/21 14:41
Dibromochloromethane	0.00273 U	0.00546	0.00164	mg/kg	1		03/25/21 14:41
Dibromomethane	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
Dichlorodifluoromethane	0.0273 U	0.0546	0.0164	mg/kg	1		03/25/21 14:41
Ethylbenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
Freon-113	0.0545 U	0.109	0.0339	mg/kg	1		03/25/21 14:41
Hexachlorobutadiene	0.0109 U	0.0218	0.00677	mg/kg	1		03/25/21 14:41
Isopropylbenzene (Cumene)	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
Methylene chloride	0.0545 U	0.109	0.0339	mg/kg	1		03/25/21 14:41
Methyl-t-butyl ether	0.0545 U	0.109	0.0339	mg/kg	1		03/25/21 14:41
Naphthalene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
n-Butylbenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
n-Propylbenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
o-Xylene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
P & M -Xylene	0.0273 U	0.0546	0.0164	mg/kg	1		03/25/21 14:41
sec-Butylbenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
Styrene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
tert-Butylbenzene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
Tetrachloroethene	0.00680 U	0.0136	0.00426	mg/kg	1		03/25/21 14:41
Toluene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
trans-1,2-Dichloroethene	0.0137 U	0.0273	0.00852	mg/kg	1		03/25/21 14:41
trans-1,3-Dichloropropene	0.00680 U	0.0136	0.00426	mg/kg	1		03/25/21 14:41
Trichloroethene	0.00273 U	0.00546	0.00164	mg/kg	1		03/25/21 14:41
Trichlorofluoromethane	0.0273 U	0.0546	0.0164	mg/kg	1		03/25/21 14:41
Vinyl acetate	0.0545 U	0.109	0.0339	mg/kg	1		03/25/21 14:41
Vinyl chloride	0.000437 U	0.000874	0.000273	mg/kg	1		03/25/21 14:41
Xylenes (total)	0.0410 U	0.0819	0.0249	mg/kg	1		03/25/21 14:41
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	99.7	71-136		%	1		03/25/21 14:41
4-Bromofluorobenzene (surr)	96.1	55-151		%	1		03/25/21 14:41
Toluene-d8 (surr)	99.4	85-116		%	1		03/25/21 14:41

## Results of SBIW19-2

Client Sample ID: **SBIW19-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171005  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:10  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.1  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/25/21 14:41  
Container ID: 1211171005-D

Prep Batch: VXX36901  
Prep Method: SW5035A  
Prep Date/Time: 03/15/21 13:10  
Prep Initial Wt./Vol.: 51.399 g  
Prep Extract Vol: 26.9809 mL



**Results of SBIW19-2**

Client Sample ID: **SBIW19-2**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171005  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:10  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.1  
Location:

**Results by Waters Department**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Ammonia-N	3.49	1.20	0.377	mg/kg	1		03/18/21 16:49

**Batch Information**

Analytical Batch: WDA4952  
Analytical Method: SM21 4500-NH3 G  
Analyst: EWW  
Analytical Date/Time: 03/18/21 16:49  
Container ID: 1211171005-A

Prep Batch: WXX13648  
Prep Method: METHOD  
Prep Date/Time: 03/18/21 10:27  
Prep Initial Wt./Vol.: 1.0424 g  
Prep Extract Vol: 6 mL

### Results of Trip Blank 3

Client Sample ID: **Trip Blank 3**  
 Client Project ID: **103311-011 Cordova SREB UIC**  
 Lab Sample ID: 1211171006  
 Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):  
 Location:

### Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.02 J	2.46	0.738	mg/kg	1		03/22/21 18:22
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	97.3	50-150		%	1		03/22/21 18:22

### Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 18:22  
 Container ID: 1211171006-A

Prep Batch: VXX36890  
 Prep Method: SW5035A  
 Prep Date/Time: 03/15/21 13:05  
 Prep Initial Wt./Vol.: 50.782 g  
 Prep Extract Vol: 25 mL



### Results of Trip Blank 3

Client Sample ID: **Trip Blank 3**  
 Client Project ID: **103311-011 Cordova SREB UIC**  
 Lab Sample ID: 1211171006  
 Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00985 U	0.0197	0.00610	mg/kg	1		03/25/21 13:55
1,1,1-Trichloroethane	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
1,1,2,2-Tetrachloroethane	0.000985 U	0.00197	0.000610	mg/kg	1		03/25/21 13:55
1,1,2-Trichloroethane	0.000394 U	0.000788	0.000246	mg/kg	1		03/25/21 13:55
1,1-Dichloroethane	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
1,1-Dichloroethene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
1,1-Dichloropropene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
1,2,3-Trichlorobenzene	0.0246 U	0.0492	0.0148	mg/kg	1		03/25/21 13:55
1,2,3-Trichloropropane	0.000985 U	0.00197	0.000610	mg/kg	1		03/25/21 13:55
1,2,4-Trichlorobenzene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
1,2,4-Trimethylbenzene	0.0246 U	0.0492	0.0148	mg/kg	1		03/25/21 13:55
1,2-Dibromo-3-chloropropane	0.0493 U	0.0985	0.0305	mg/kg	1		03/25/21 13:55
1,2-Dibromoethane	0.000492 U	0.000985	0.000394	mg/kg	1		03/25/21 13:55
1,2-Dichlorobenzene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
1,2-Dichloroethane	0.000985 U	0.00197	0.000689	mg/kg	1		03/25/21 13:55
1,2-Dichloropropane	0.00492 U	0.00985	0.00305	mg/kg	1		03/25/21 13:55
1,3,5-Trimethylbenzene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
1,3-Dichlorobenzene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
1,3-Dichloropropane	0.00492 U	0.00985	0.00305	mg/kg	1		03/25/21 13:55
1,4-Dichlorobenzene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
2,2-Dichloropropane	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
2-Butanone (MEK)	0.123 U	0.246	0.0768	mg/kg	1		03/25/21 13:55
2-Chlorotoluene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
2-Hexanone	0.0493 U	0.0985	0.0305	mg/kg	1		03/25/21 13:55
4-Chlorotoluene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
4-Isopropyltoluene	0.0493 U	0.0985	0.0246	mg/kg	1		03/25/21 13:55
4-Methyl-2-pentanone (MIBK)	0.123 U	0.246	0.0768	mg/kg	1		03/25/21 13:55
Acetone	0.123 U	0.246	0.0768	mg/kg	1		03/25/21 13:55
Benzene	0.00615 U	0.0123	0.00384	mg/kg	1		03/25/21 13:55
Bromobenzene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
Bromochloromethane	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
Bromodichloromethane	0.000985 U	0.00197	0.000610	mg/kg	1		03/25/21 13:55
Bromoform	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55
Bromomethane	0.00985 U	0.0197	0.00610	mg/kg	1		03/25/21 13:55
Carbon disulfide	0.0493 U	0.0985	0.0305	mg/kg	1		03/25/21 13:55
Carbon tetrachloride	0.00615 U	0.0123	0.00384	mg/kg	1		03/25/21 13:55
Chlorobenzene	0.0123 U	0.0246	0.00768	mg/kg	1		03/25/21 13:55



Results of Trip Blank 3

Client Sample ID: Trip Blank 3
Client Project ID: 103311-011 Cordova SREB UIC
Lab Sample ID: 1211171006
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of Trip Blank 3**

Client Sample ID: **Trip Blank 3**  
Client Project ID: **103311-011 Cordova SREB UIC**  
Lab Sample ID: 1211171006  
Lab Project ID: 1211171

Collection Date: 03/15/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/25/21 13:55  
Container ID: 1211171006-A

Prep Batch: VXX36901  
Prep Method: SW5035A  
Prep Date/Time: 03/15/21 13:05  
Prep Initial Wt./Vol.: 50.782 g  
Prep Extract Vol: 25 mL

## Method Blank

Blank ID: MB for HBN 1817087 [MXX/34046]  
 Blank Lab ID: 1603704

Matrix: Soil/Solid (dry weight)

QC for Samples:  
 1211171001, 1211171002, 1211171003, 1211171004, 1211171005

## Results by SW6020B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Arsenic	0.500U	1.00	0.310	mg/kg
Barium	0.150U	0.300	0.0940	mg/kg
Cadmium	0.100U	0.200	0.0620	mg/kg
Chromium	0.500U	1.00	0.310	mg/kg
Lead	0.100U	0.200	0.0620	mg/kg
Mercury	0.150U	0.300	0.100	mg/kg
Selenium	1.00U	2.00	0.620	mg/kg
Silver	0.250U	0.500	0.150	mg/kg

## Batch Information

Analytical Batch: MMS11047  
 Analytical Method: SW6020B  
 Instrument: Perkin Elmer Nexlon P5  
 Analyst: ACF  
 Analytical Date/Time: 3/24/2021 1:53:12PM

Prep Batch: MXX34046  
 Prep Method: SW3050B  
 Prep Date/Time: 3/23/2021 12:00:47PM  
 Prep Initial Wt./Vol.: 1 g  
 Prep Extract Vol: 50 mL



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [MXX34046]  
 Blank Spike Lab ID: 1603705  
 Date Analyzed: 03/24/2021 13:57

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171004, 1211171005

## Results by SW6020B

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
Arsenic	50	51.9	104	(82-118)
Barium	50	50.4	101	(86-116)
Cadmium	5	5.05	101	(84-116)
Chromium	20	20.9	104	(83-119)
Lead	50	54.3	109	(84-118)
Mercury	0.5	0.527	105	(74-126)
Selenium	50	53.7	107	(80-119)
Silver	5	5.40	108	(83-118)

## Batch Information

Analytical Batch: **MMS11047**  
 Analytical Method: **SW6020B**  
 Instrument: **Perkin Elmer Nexlon P5**  
 Analyst: **ACF**

Prep Batch: **MXX34046**  
 Prep Method: **SW3050B**  
 Prep Date/Time: **03/23/2021 12:00**  
 Spike Init Wt./Vol.: 50 mg/kg Extract Vol: 50 mL  
 Dupe Init Wt./Vol.: Extract Vol:



### Matrix Spike Summary

Original Sample ID: 1603706  
MS Sample ID: 1603707 MS  
MSD Sample ID: 1603708 MSD

Analysis Date: 03/24/2021 14:01  
Analysis Date: 03/24/2021 14:05  
Analysis Date: 03/24/2021 14:10  
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171004, 1211171005

### Results by SW6020B

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Arsenic	4.21	49.9	56.5	105	48.0	55.9	108	82-118	1.04	(< 20 )
Barium	78.7	49.9	126	95	48.0	142	131 *	86-116	11.60	(< 20 )
Cadmium	0.0675J	4.99	4.99	99	4.80	4.93	101	84-116	1.38	(< 20 )
Chromium	30.1	19.9	53.9	119	19.2	51.7	112	83-119	4.29	(< 20 )
Lead	6.04	49.9	56.5	101	48.0	55.3	103	84-118	2.16	(< 20 )
Mercury	0.140U	0.499	.531	107	0.480	0.497	104	74-126	6.61	(< 20 )
Selenium	0.935U	49.9	53	106	48.0	52.5	109	80-119	1.00	(< 20 )
Silver	0.233U	4.99	5.05	101	4.80	4.88	102	83-118	3.34	(< 20 )

### Batch Information

Analytical Batch: MMS11047  
Analytical Method: SW6020B  
Instrument: Perkin Elmer Nexlon P5  
Analyst: ACF  
Analytical Date/Time: 3/24/2021 2:05:54PM

Prep Batch: MXX34046  
Prep Method: Soils/Solids Digest for Metals by ICP-MS  
Prep Date/Time: 3/23/2021 12:00:47PM  
Prep Initial Wt./Vol.: 1.00g  
Prep Extract Vol: 50.00mL

Print Date: 04/06/2021 1:12:18PM

## Bench Spike Summary

Original Sample ID: 1603706  
 MS Sample ID: 1603709 BND  
 MSD Sample ID:

Analysis Date: 03/24/2021 14:01  
 Analysis Date: 03/24/2021 14:14  
 Analysis Date:  
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171004, 1211171005

## Results by SW6020B

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Barium	78.7	233	316	102				75-125		

## Batch Information

Analytical Batch: MMS11047  
 Analytical Method: SW6020B  
 Instrument: Perkin Elmer Nexlon P5  
 Analyst: ACF  
 Analytical Date/Time: 3/24/2021 2:14:00PM

Prep Batch: MXX34046  
 Prep Method: Soils/Solids Digest for Metals by ICP-MS  
 Prep Date/Time: 3/23/2021 12:00:47PM  
 Prep Initial Wt./Vol.: 1.07g  
 Prep Extract Vol: 50.00mL

## Method Blank

Blank ID: MB for HBN 1816933 [SPT/11232]

Blank Lab ID: 1603155

QC for Samples:

1211171001, 1211171002, 1211171003, 1211171004, 1211171005

Matrix: Soil/Solid (dry weight)

## Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

## Batch Information

Analytical Batch: SPT11232

Analytical Method: SM21 2540G

Instrument:

Analyst: IVM

Analytical Date/Time: 3/17/2021 6:00:00PM

## Duplicate Sample Summary

Original Sample ID: 1211172002

Duplicate Sample ID: 1603158

QC for Samples:

1211171001, 1211171002, 1211171003, 1211171004, 1211171005

Analysis Date: 03/17/2021 18:00

Matrix: Soil/Solid (dry weight)

## Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	84.7	85.3	%	0.70	(< 15 )

## Batch Information

Analytical Batch: SPT11232

Analytical Method: SM21 2540G

Instrument:

Analyst: IVM

## Method Blank

Blank ID: MB for HBN 1817085 [VXX/36890]  
Blank Lab ID: 1603696

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211171001, 1211171002, 1211171003, 1211171004, 1211171005, 1211171006

## Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.945J	2.50	0.750	mg/kg
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	94.8	50-150		%

## Batch Information

Analytical Batch: VFC15525  
Analytical Method: AK101  
Instrument: Agilent 7890A PID/FID  
Analyst: MDT  
Analytical Date/Time: 3/22/2021 10:30:00PM

Prep Batch: VXX36890  
Prep Method: SW5035A  
Prep Date/Time: 3/22/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [VXX36890]  
 Blank Spike Lab ID: 1603697  
 Date Analyzed: 03/22/2021 21:55

Spike Duplicate ID: LCSD for HBN 1211171 [VXX36890]  
 Spike Duplicate Lab ID: 1603698  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171004, 1211171005, 1211171006

## Results by AK101

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	14.2	113	12.5	14.0	112	( 60-120 )	1.40	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	1.25		100	1.25		99	( 50-150 )	1.10	
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## Batch Information

Analytical Batch: **VFC15525**  
 Analytical Method: **AK101**  
 Instrument: **Agilent 7890A PID/FID**  
 Analyst: **MDT**

Prep Batch: **VXX36890**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **03/22/2021 06:00**  
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL



### Method Blank

Blank ID: MB for HBN 1817225 [VXX/36901]  
Blank Lab ID: 1604277

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211171001, 1211171002, 1211171003, 1211171005, 1211171006

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.0100U	0.0200	0.00620	mg/kg
1,1,1-Trichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1,2,2-Tetrachloroethane	0.00100U	0.00200	0.000620	mg/kg
1,1,2-Trichloroethane	0.000400U	0.000800	0.000250	mg/kg
1,1-Dichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloropropene	0.0125U	0.0250	0.00780	mg/kg
1,2,3-Trichlorobenzene	0.0250U	0.0500	0.0150	mg/kg
1,2,3-Trichloropropane	0.00100U	0.00200	0.000620	mg/kg
1,2,4-Trichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2,4-Trimethylbenzene	0.0250U	0.0500	0.0150	mg/kg
1,2-Dibromo-3-chloropropane	0.0500U	0.100	0.0310	mg/kg
1,2-Dibromoethane	0.000500U	0.00100	0.000400	mg/kg
1,2-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2-Dichloroethane	0.00100U	0.00200	0.000700	mg/kg
1,2-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,3,5-Trimethylbenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,4-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
2,2-Dichloropropane	0.0125U	0.0250	0.00780	mg/kg
2-Butanone (MEK)	0.125U	0.250	0.0780	mg/kg
2-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
2-Hexanone	0.0500U	0.100	0.0310	mg/kg
4-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
4-Isopropyltoluene	0.0500U	0.100	0.0250	mg/kg
4-Methyl-2-pentanone (MIBK)	0.125U	0.250	0.0780	mg/kg
Acetone	0.125U	0.250	0.0780	mg/kg
Benzene	0.00625U	0.0125	0.00390	mg/kg
Bromobenzene	0.0125U	0.0250	0.00780	mg/kg
Bromochloromethane	0.0125U	0.0250	0.00780	mg/kg
Bromodichloromethane	0.00100U	0.00200	0.000620	mg/kg
Bromoform	0.0125U	0.0250	0.00780	mg/kg
Bromomethane	0.0100U	0.0200	0.00620	mg/kg
Carbon disulfide	0.0500U	0.100	0.0310	mg/kg
Carbon tetrachloride	0.00625U	0.0125	0.00390	mg/kg
Chlorobenzene	0.0125U	0.0250	0.00780	mg/kg
Chloroethane	0.100U	0.200	0.0620	mg/kg

Print Date: 04/06/2021 1:12:30PM



## Method Blank

Blank ID: MB for HBN 1817225 [VXX/36901]  
 Blank Lab ID: 1604277

Matrix: Soil/Solid (dry weight)

QC for Samples:  
 1211171001, 1211171002, 1211171003, 1211171005, 1211171006

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloroform	0.00200U	0.00400	0.00100	mg/kg
Chloromethane	0.0125U	0.0250	0.00780	mg/kg
cis-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
cis-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Dibromochloromethane	0.00250U	0.00500	0.00150	mg/kg
Dibromomethane	0.0125U	0.0250	0.00780	mg/kg
Dichlorodifluoromethane	0.0250U	0.0500	0.0150	mg/kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/kg
Freon-113	0.0500U	0.100	0.0310	mg/kg
Hexachlorobutadiene	0.0100U	0.0200	0.00620	mg/kg
Isopropylbenzene (Cumene)	0.0125U	0.0250	0.00780	mg/kg
Methylene chloride	0.0500U	0.100	0.0310	mg/kg
Methyl-t-butyl ether	0.0500U	0.100	0.0310	mg/kg
Naphthalene	0.0125U	0.0250	0.00780	mg/kg
n-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
n-Propylbenzene	0.0125U	0.0250	0.00780	mg/kg
o-Xylene	0.0125U	0.0250	0.00780	mg/kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/kg
sec-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Styrene	0.0125U	0.0250	0.00780	mg/kg
tert-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Tetrachloroethene	0.00625U	0.0125	0.00390	mg/kg
Toluene	0.0125U	0.0250	0.00780	mg/kg
trans-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
trans-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Trichloroethene	0.00250U	0.00500	0.00150	mg/kg
Trichlorofluoromethane	0.0250U	0.0500	0.0150	mg/kg
Vinyl acetate	0.0500U	0.100	0.0310	mg/kg
Vinyl chloride	0.000400U	0.000800	0.000250	mg/kg
Xylenes (total)	0.0375U	0.0750	0.0228	mg/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	102	71-136		%
4-Bromofluorobenzene (surr)	97.2	55-151		%
Toluene-d8 (surr)	98.7	85-116		%

## Method Blank

Blank ID: MB for HBN 1817225 [VXX/36901]  
Blank Lab ID: 1604277

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211171001, 1211171002, 1211171003, 1211171005, 1211171006

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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### Batch Information

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: JMG  
Analytical Date/Time: 3/25/2021 10:41:00AM

Prep Batch: VXX36901  
Prep Method: SW5035A  
Prep Date/Time: 3/25/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 04/06/2021 1:12:30PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [VXX36901]

Blank Spike Lab ID: 1604278

Date Analyzed: 03/25/2021 10:57

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171005, 1211171006

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
1,1,1,2-Tetrachloroethane	0.750	0.811	108	(78-125)
1,1,1-Trichloroethane	0.750	0.787	105	(73-130)
1,1,2,2-Tetrachloroethane	0.750	0.800	107	(70-124)
1,1,2-Trichloroethane	0.750	0.764	102	(78-121)
1,1-Dichloroethane	0.750	0.789	105	(76-125)
1,1-Dichloroethene	0.750	0.783	104	(70-131)
1,1-Dichloropropene	0.750	0.783	104	(76-125)
1,2,3-Trichlorobenzene	0.750	0.785	105	(66-130)
1,2,3-Trichloropropane	0.750	0.769	103	(73-125)
1,2,4-Trichlorobenzene	0.750	0.782	104	(67-129)
1,2,4-Trimethylbenzene	0.750	0.792	106	(75-123)
1,2-Dibromo-3-chloropropane	0.750	0.823	110	(61-132)
1,2-Dibromoethane	0.750	0.795	106	(78-122)
1,2-Dichlorobenzene	0.750	0.785	105	(78-121)
1,2-Dichloroethane	0.750	0.741	99	(73-128)
1,2-Dichloropropane	0.750	0.786	105	(76-123)
1,3,5-Trimethylbenzene	0.750	0.792	106	(73-124)
1,3-Dichlorobenzene	0.750	0.790	105	(77-121)
1,3-Dichloropropane	0.750	0.785	105	(77-121)
1,4-Dichlorobenzene	0.750	0.795	106	(75-120)
2,2-Dichloropropane	0.750	0.797	106	(67-133)
2-Butanone (MEK)	2.25	2.49	111	(51-148)
2-Chlorotoluene	0.750	0.784	104	(75-122)
2-Hexanone	2.25	2.46	109	(53-145)
4-Chlorotoluene	0.750	0.772	103	(72-124)
4-Isopropyltoluene	0.750	0.793	106	(73-127)
4-Methyl-2-pentanone (MIBK)	2.25	2.40	107	(65-135)
Acetone	2.25	2.18	97	(36-164)
Benzene	0.750	0.755	101	(77-121)
Bromobenzene	0.750	0.802	107	(78-121)
Bromochloromethane	0.750	0.774	103	(78-125)
Bromodichloromethane	0.750	0.835	111	(75-127)
Bromoform	0.750	0.751	100	(67-132)
Bromomethane	0.750	0.717	96	(53-143)

Print Date: 04/06/2021 1:12:32PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [VXX36901]

Blank Spike Lab ID: 1604278

Date Analyzed: 03/25/2021 10:57

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171005, 1211171006

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
Carbon disulfide	1.13	1.24	110	(63-132)
Carbon tetrachloride	0.750	0.811	108	(70-135)
Chlorobenzene	0.750	0.770	103	(79-120)
Chloroethane	0.750	0.738	98	(59-139)
Chloroform	0.750	0.764	102	(78-123)
Chloromethane	0.750	0.696	93	(50-136)
cis-1,2-Dichloroethene	0.750	0.761	101	(77-123)
cis-1,3-Dichloropropene	0.750	0.834	111	(74-126)
Dibromochloromethane	0.750	0.771	103	(74-126)
Dibromomethane	0.750	0.791	105	(78-125)
Dichlorodifluoromethane	0.750	0.760	101	(29-149)
Ethylbenzene	0.750	0.776	103	(76-122)
Freon-113	1.13	1.16	103	(66-136)
Hexachlorobutadiene	0.750	0.806	107	(61-135)
Isopropylbenzene (Cumene)	0.750	0.779	104	(68-134)
Methylene chloride	0.750	0.762	102	(70-128)
Methyl-t-butyl ether	1.13	1.17	104	(73-125)
Naphthalene	0.750	0.770	103	(62-129)
n-Butylbenzene	0.750	0.831	111	(70-128)
n-Propylbenzene	0.750	0.800	107	(73-125)
o-Xylene	0.750	0.762	102	(77-123)
P & M -Xylene	1.50	1.50	100	(77-124)
sec-Butylbenzene	0.750	0.793	106	(73-126)
Styrene	0.750	0.796	106	(76-124)
tert-Butylbenzene	0.750	0.776	103	(73-125)
Tetrachloroethene	0.750	0.763	102	(73-128)
Toluene	0.750	0.750	100	(77-121)
trans-1,2-Dichloroethene	0.750	0.768	102	(74-125)
trans-1,3-Dichloropropene	0.750	0.835	111	(71-130)
Trichloroethene	0.750	0.782	104	(77-123)
Trichlorofluoromethane	0.750	0.770	103	(62-140)
Vinyl acetate	0.750	0.832	111	(50-151)
Vinyl chloride	0.750	0.746	99	(56-135)
Xylenes (total)	2.25	2.26	100	(78-124)

Print Date: 04/06/2021 1:12:32PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [VXX36901]  
 Blank Spike Lab ID: 1604278  
 Date Analyzed: 03/25/2021 10:57

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171005, 1211171006

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	0.750		99	( 71-136 )
4-Bromofluorobenzene (surr)	0.750		96	( 55-151 )
Toluene-d8 (surr)	0.750		99	( 85-116 )

## Batch Information

Analytical Batch: **VMS20618**  
 Analytical Method: **SW8260D**  
 Instrument: **VRA Agilent GC/MS 7890B/5977A**  
 Analyst: **JMG**

Prep Batch: **VXX36901**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **03/25/2021 06:00**  
 Spike Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: Extract Vol:



### Matrix Spike Summary

Original Sample ID: 1211252001  
 MS Sample ID: 1604279 MS  
 MSD Sample ID: 1604280 MSD

Analysis Date: 03/25/2021 16:45  
 Analysis Date: 03/25/2021 12:22  
 Analysis Date: 03/25/2021 12:38  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171005, 1211171006

### Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	0.0153U	0.808	0.870	108	0.808	0.859	106	78-125	1.20	(< 20)
1,1,1-Trichloroethane	0.0191U	0.808	0.837	104	0.808	0.813	101	73-130	2.90	(< 20)
1,1,2,2-Tetrachloroethane	0.00153U	0.808	0.862	107	0.808	0.882	109	70-124	2.30	(< 20)
1,1,2-Trichloroethane	0.000610U	0.808	0.875	108	0.808	0.849	105	78-121	3.00	(< 20)
1,1-Dichloroethane	0.0191U	0.808	0.842	104	0.808	0.781	97	76-125	7.50	(< 20)
1,1-Dichloroethene	0.0191U	0.808	0.826	102	0.808	0.819	101	70-131	0.88	(< 20)
1,1-Dichloropropene	0.0191U	0.808	0.826	102	0.808	0.810	100	76-125	1.90	(< 20)
1,2,3-Trichlorobenzene	0.0382U	0.808	0.898	111	0.808	1.01	125	66-130	11.80	(< 20)
1,2,3-Trichloropropane	0.00153U	0.808	0.810	100	0.808	0.841	104	73-125	3.70	(< 20)
1,2,4-Trichlorobenzene	0.0191U	0.808	0.877	109	0.808	0.923	114	67-129	5.10	(< 20)
1,2,4-Trimethylbenzene	0.297	0.808	1.01	89	0.808	1.06	94	75-123	4.00	(< 20)
1,2-Dibromo-3-chloropropane	0.0765U	0.808	0.934	116	0.808	0.936	116	61-132	0.20	(< 20)
1,2-Dibromoethane	0.000765U	0.808	0.860	107	0.808	0.860	106	78-122	0.06	(< 20)
1,2-Dichlorobenzene	0.0191U	0.808	0.822	102	0.808	0.839	104	78-121	2.00	(< 20)
1,2-Dichloroethane	0.00153U	0.808	0.801	99	0.808	0.784	97	73-128	2.10	(< 20)
1,2-Dichloropropane	0.00765U	0.808	0.870	108	0.808	0.830	103	76-123	4.80	(< 20)
1,3,5-Trimethylbenzene	0.102	0.808	0.881	96	0.808	0.901	99	73-124	2.20	(< 20)
1,3-Dichlorobenzene	0.0191U	0.808	0.828	103	0.808	0.839	104	77-121	1.40	(< 20)
1,3-Dichloropropane	0.00765U	0.808	0.842	104	0.808	0.833	103	77-121	1.00	(< 20)
1,4-Dichlorobenzene	0.0191U	0.808	0.828	103	0.808	0.887	110	75-120	6.90	(< 20)
2,2-Dichloropropane	0.0191U	0.808	0.849	105	0.808	0.839	104	67-133	1.10	(< 20)
2-Butanone (MEK)	0.191U	2.43	2.71	112	2.43	2.68	111	51-148	0.62	(< 20)
2-Chlorotoluene	0.0191U	0.808	0.810	100	0.808	0.831	103	75-122	2.50	(< 20)
2-Hexanone	0.0765U	2.43	2.68	111	2.43	2.66	110	53-145	0.72	(< 20)
4-Chlorotoluene	0.0191U	0.808	0.793	98	0.808	0.847	105	72-124	6.70	(< 20)
4-Isopropyltoluene	0.0699J	0.808	0.884	101	0.808	0.900	103	73-127	1.80	(< 20)
4-Methyl-2-pentanone (MIBK)	0.191U	2.43	2.79	115	2.43	2.63	109	65-135	5.70	(< 20)
Acetone	0.191U	2.43	2.35	97	2.43	2.40	99	36-164	1.90	(< 20)
Benzene	0.00955U	0.808	0.803	99	0.808	0.790	98	77-121	1.60	(< 20)
Bromobenzene	0.0191U	0.808	0.832	103	0.808	0.841	104	78-121	1.00	(< 20)
Bromochloromethane	0.0191U	0.808	0.837	104	0.808	0.828	103	78-125	1.00	(< 20)
Bromodichloromethane	0.00153U	0.808	0.922	114	0.808	0.886	110	75-127	4.00	(< 20)
Bromoform	0.0191U	0.808	0.808	100	0.808	0.838	104	67-132	3.80	(< 20)
Bromomethane	0.0153U	0.808	0.799	99	0.808	0.813	101	53-143	1.60	(< 20)
Carbon disulfide	0.0765U	1.21	1.31	108	1.21	1.30	108	63-132	0.23	(< 20)
Carbon tetrachloride	0.00955U	0.808	0.865	107	0.808	0.849	105	70-135	1.80	(< 20)
Chlorobenzene	0.0191U	0.808	0.814	101	0.808	0.819	101	79-120	0.69	(< 20)

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### Matrix Spike Summary

Original Sample ID: 1211252001  
 MS Sample ID: 1604279 MS  
 MSD Sample ID: 1604280 MSD

Analysis Date: 03/25/2021 16:45  
 Analysis Date: 03/25/2021 12:22  
 Analysis Date: 03/25/2021 12:38  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171005, 1211171006

### Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloroethane	0.153U	0.808	0.809	100	0.808	0.787	97	59-139	2.80	(< 20)
Chloroform	0.00306U	0.808	0.815	101	0.808	0.800	99	78-123	1.80	(< 20)
Chloromethane	0.0191U	0.808	0.752	93	0.808	0.732	91	50-136	2.80	(< 20)
cis-1,2-Dichloroethene	0.0191U	0.808	0.809	100	0.808	0.803	99	77-123	0.87	(< 20)
cis-1,3-Dichloropropene	0.00955U	0.808	0.917	113	0.808	0.884	109	74-126	3.60	(< 20)
Dibromochloromethane	0.00382U	0.808	0.832	103	0.808	0.827	102	74-126	0.65	(< 20)
Dibromomethane	0.0191U	0.808	0.884	109	0.808	0.849	105	78-125	3.90	(< 20)
Dichlorodifluoromethane	0.0382U	0.808	0.755	93	0.808	0.716	89	29-149	5.30	(< 20)
Ethylbenzene	0.0195J	0.808	0.841	102	0.808	0.817	99	76-122	2.80	(< 20)
Freon-113	0.0765U	1.21	1.22	100	1.21	1.21	100	66-136	0.67	(< 20)
Hexachlorobutadiene	0.0153U	0.808	0.922	114	0.808	0.961	119	61-135	4.10	(< 20)
Isopropylbenzene (Cumene)	0.0168J	0.808	0.821	100	0.808	0.828	100	68-134	0.85	(< 20)
Methylene chloride	0.0765U	0.808	0.815	101	0.808	0.817	101	70-128	0.30	(< 20)
Methyl-t-butyl ether	0.0765U	1.21	1.26	104	1.21	1.18	97	73-125	6.80	(< 20)
Naphthalene	0.0283J	0.808	0.892	107	0.808	0.963	116	62-129	7.60	(< 20)
n-Butylbenzene	0.0191U	0.808	0.939	116	0.808	0.983	122	70-128	4.60	(< 20)
n-Propylbenzene	0.0523	0.808	0.844	98	0.808	0.864	100	73-125	2.20	(< 20)
o-Xylene	0.0611	0.808	0.848	97	0.808	0.854	98	77-123	0.82	(< 20)
P & M -Xylene	0.112	1.62	1.67	97	1.62	1.63	94	77-124	2.50	(< 20)
sec-Butylbenzene	0.0286J	0.808	0.849	102	0.808	0.881	106	73-126	3.60	(< 20)
Styrene	0.0191U	0.808	0.826	102	0.808	0.838	104	76-124	1.50	(< 20)
tert-Butylbenzene	0.0191U	0.808	0.795	99	0.808	0.850	105	73-125	6.60	(< 20)
Tetrachloroethene	0.00955U	0.808	0.835	103	0.808	0.794	98	73-128	5.00	(< 20)
Toluene	0.0191U	0.808	0.798	99	0.808	0.790	98	77-121	1.00	(< 20)
trans-1,2-Dichloroethene	0.0191U	0.808	0.877	109	0.808	0.822	102	74-125	6.40	(< 20)
trans-1,3-Dichloropropene	0.00955U	0.808	0.933	116	0.808	0.904	112	71-130	3.10	(< 20)
Trichloroethene	0.00382U	0.808	0.855	106	0.808	0.817	101	77-123	4.50	(< 20)
Trichlorofluoromethane	0.0382U	0.808	0.977	121	0.808	0.956	118	62-140	2.20	(< 20)
Vinyl acetate	0.0765U	0.808	0.945	117	0.808	0.900	111	50-151	4.90	(< 20)
Vinyl chloride	0.000610U	0.808	0.781	97	0.808	0.765	95	56-135	2.10	(< 20)
Xylenes (total)	0.173	2.43	2.51	97	2.43	2.49	95	78-124	1.40	(< 20)
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		0.808	0.804	100	0.808	0.800	99	71-136	0.47	
4-Bromofluorobenzene (surr)		1.35	0.941	70	1.35	0.952	71	55-151	1.10	
Toluene-d8 (surr)		0.808	0.795	98	0.808	0.801	99	85-116	0.74	

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### Matrix Spike Summary

Original Sample ID: 1211252001  
MS Sample ID: 1604279 MS  
MSD Sample ID: 1604280 MSD

Analysis Date:  
Analysis Date: 03/25/2021 12:22  
Analysis Date: 03/25/2021 12:38  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171005, 1211171006

### Results by SW8260D

Parameter	Sample	Matrix Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD.CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			

### Batch Information

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: JMG  
Analytical Date/Time: 3/25/2021 12:22:00PM

Prep Batch: VXX36901  
Prep Method: Vol. Extraction SW8260 Field Extracted L  
Prep Date/Time: 3/25/2021 6:00:00AM  
Prep Initial Wt./Vol.: 56.90g  
Prep Extract Vol: 25.00mL

Print Date: 04/06/2021 1:12:34PM





### Method Blank

Blank ID: MB for HBN 1817310 [VXX/36913]

Blank Lab ID: 1604558

QC for Samples:

1211171004

Matrix: Soil/Solid (dry weight)

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.0100U	0.0200	0.00620	mg/kg
1,1,1-Trichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1,2,2-Tetrachloroethane	0.00100U	0.00200	0.000620	mg/kg
1,1,2-Trichloroethane	0.000400U	0.000800	0.000250	mg/kg
1,1-Dichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloropropene	0.0125U	0.0250	0.00780	mg/kg
1,2,3-Trichlorobenzene	0.0250U	0.0500	0.0150	mg/kg
1,2,3-Trichloropropane	0.00100U	0.00200	0.000620	mg/kg
1,2,4-Trichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2,4-Trimethylbenzene	0.0250U	0.0500	0.0150	mg/kg
1,2-Dibromo-3-chloropropane	0.0500U	0.100	0.0310	mg/kg
1,2-Dibromoethane	0.000500U	0.00100	0.000400	mg/kg
1,2-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2-Dichloroethane	0.00100U	0.00200	0.000700	mg/kg
1,2-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,3,5-Trimethylbenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,4-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
2,2-Dichloropropane	0.0125U	0.0250	0.00780	mg/kg
2-Butanone (MEK)	0.125U	0.250	0.0780	mg/kg
2-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
2-Hexanone	0.0500U	0.100	0.0310	mg/kg
4-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
4-Isopropyltoluene	0.0500U	0.100	0.0250	mg/kg
4-Methyl-2-pentanone (MIBK)	0.125U	0.250	0.0780	mg/kg
Acetone	0.125U	0.250	0.0780	mg/kg
Benzene	0.00625U	0.0125	0.00390	mg/kg
Bromobenzene	0.0125U	0.0250	0.00780	mg/kg
Bromochloromethane	0.0125U	0.0250	0.00780	mg/kg
Bromodichloromethane	0.00100U	0.00200	0.000620	mg/kg
Bromoform	0.0125U	0.0250	0.00780	mg/kg
Bromomethane	0.0100U	0.0200	0.00620	mg/kg
Carbon disulfide	0.0500U	0.100	0.0310	mg/kg
Carbon tetrachloride	0.00625U	0.0125	0.00390	mg/kg
Chlorobenzene	0.0125U	0.0250	0.00780	mg/kg
Chloroethane	0.100U	0.200	0.0620	mg/kg

Print Date: 04/06/2021 1:12:35PM



### Method Blank

Blank ID: MB for HBN 1817310 [VXX/36913]

Blank Lab ID: 1604558

QC for Samples:

1211171004

Matrix: Soil/Solid (dry weight)

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloroform	0.00200U	0.00400	0.00100	mg/kg
Chloromethane	0.0125U	0.0250	0.00780	mg/kg
cis-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
cis-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Dibromochloromethane	0.00250U	0.00500	0.00150	mg/kg
Dibromomethane	0.0125U	0.0250	0.00780	mg/kg
Dichlorodifluoromethane	0.0250U	0.0500	0.0150	mg/kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/kg
Freon-113	0.0500U	0.100	0.0310	mg/kg
Hexachlorobutadiene	0.0100U	0.0200	0.00620	mg/kg
Isopropylbenzene (Cumene)	0.0125U	0.0250	0.00780	mg/kg
Methylene chloride	0.0500U	0.100	0.0310	mg/kg
Methyl-t-butyl ether	0.0500U	0.100	0.0310	mg/kg
Naphthalene	0.0125U	0.0250	0.00780	mg/kg
n-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
n-Propylbenzene	0.0125U	0.0250	0.00780	mg/kg
o-Xylene	0.0125U	0.0250	0.00780	mg/kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/kg
sec-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Styrene	0.0125U	0.0250	0.00780	mg/kg
tert-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Tetrachloroethene	0.00625U	0.0125	0.00390	mg/kg
Toluene	0.0125U	0.0250	0.00780	mg/kg
trans-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
trans-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Trichloroethene	0.00250U	0.00500	0.00150	mg/kg
Trichlorofluoromethane	0.0250U	0.0500	0.0150	mg/kg
Vinyl acetate	0.0500U	0.100	0.0310	mg/kg
Vinyl chloride	0.000400U	0.000800	0.000250	mg/kg
Xylenes (total)	0.0375U	0.0750	0.0228	mg/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	103	71-136		%
4-Bromofluorobenzene (surr)	96.6	55-151		%
Toluene-d8 (surr)	98.4	85-116		%

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## Method Blank

Blank ID: MB for HBN 1817310 [VXX/36913]  
Blank Lab ID: 1604558

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211171004

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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### Batch Information

Analytical Batch: VMS20622  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: JMG  
Analytical Date/Time: 3/26/2021 12:00:00PM

Prep Batch: VXX36913  
Prep Method: SW5035A  
Prep Date/Time: 3/26/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 04/06/2021 1:12:35PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [VXX36913]  
 Blank Spike Lab ID: 1604559  
 Date Analyzed: 03/26/2021 12:16

Spike Duplicate ID: LCSD for HBN 1211171  
 [VXX36913]  
 Spike Duplicate Lab ID: 1604560  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171004

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	0.750	0.788	105	0.750	0.784	105	( 78-125 )	0.51	(< 20 )
1,1,1-Trichloroethane	0.750	0.775	103	0.750	0.777	104	( 73-130 )	0.19	(< 20 )
1,1,2,2-Tetrachloroethane	0.750	0.793	106	0.750	0.796	106	( 70-124 )	0.35	(< 20 )
1,1,2-Trichloroethane	0.750	0.759	101	0.750	0.754	101	( 78-121 )	0.69	(< 20 )
1,1-Dichloroethane	0.750	0.739	99	0.750	0.734	98	( 76-125 )	0.78	(< 20 )
1,1-Dichloroethene	0.750	0.759	101	0.750	0.778	104	( 70-131 )	2.50	(< 20 )
1,1-Dichloropropene	0.750	0.773	103	0.750	0.762	102	( 76-125 )	1.40	(< 20 )
1,2,3-Trichlorobenzene	0.750	0.924	123	0.750	0.960	128	( 66-130 )	3.80	(< 20 )
1,2,3-Trichloropropane	0.750	0.769	102	0.750	0.771	103	( 73-125 )	0.32	(< 20 )
1,2,4-Trichlorobenzene	0.750	0.838	112	0.750	0.846	113	( 67-129 )	0.89	(< 20 )
1,2,4-Trimethylbenzene	0.750	0.783	104	0.750	0.766	102	( 75-123 )	2.20	(< 20 )
1,2-Dibromo-3-chloropropane	0.750	0.845	113	0.750	0.832	111	( 61-132 )	1.60	(< 20 )
1,2-Dibromoethane	0.750	0.776	104	0.750	0.787	105	( 78-122 )	1.40	(< 20 )
1,2-Dichlorobenzene	0.750	0.762	102	0.750	0.764	102	( 78-121 )	0.30	(< 20 )
1,2-Dichloroethane	0.750	0.737	98	0.750	0.739	99	( 73-128 )	0.20	(< 20 )
1,2-Dichloropropane	0.750	0.776	103	0.750	0.769	103	( 76-123 )	0.87	(< 20 )
1,3,5-Trimethylbenzene	0.750	0.776	103	0.750	0.769	102	( 73-124 )	0.91	(< 20 )
1,3-Dichlorobenzene	0.750	0.791	105	0.750	0.771	103	( 77-121 )	2.50	(< 20 )
1,3-Dichloropropane	0.750	0.778	104	0.750	0.774	103	( 77-121 )	0.58	(< 20 )
1,4-Dichlorobenzene	0.750	0.787	105	0.750	0.771	103	( 75-120 )	2.00	(< 20 )
2,2-Dichloropropane	0.750	0.788	105	0.750	0.785	105	( 67-133 )	0.35	(< 20 )
2-Butanone (MEK)	2.25	2.54	113	2.25	2.49	111	( 51-148 )	1.80	(< 20 )
2-Chlorotoluene	0.750	0.782	104	0.750	0.756	101	( 75-122 )	3.30	(< 20 )
2-Hexanone	2.25	2.45	109	2.25	2.42	107	( 53-145 )	1.50	(< 20 )
4-Chlorotoluene	0.750	0.765	102	0.750	0.746	99	( 72-124 )	2.50	(< 20 )
4-Isopropyltoluene	0.750	0.777	104	0.750	0.756	101	( 73-127 )	2.70	(< 20 )
4-Methyl-2-pentanone (MIBK)	2.25	2.40	107	2.25	2.40	107	( 65-135 )	0.07	(< 20 )
Acetone	2.25	2.15	95	2.25	2.22	99	( 36-164 )	3.50	(< 20 )
Benzene	0.750	0.749	100	0.750	0.738	98	( 77-121 )	1.50	(< 20 )
Bromobenzene	0.750	0.780	104	0.750	0.776	103	( 78-121 )	0.45	(< 20 )
Bromochloromethane	0.750	0.772	103	0.750	0.780	104	( 78-125 )	1.10	(< 20 )
Bromodichloromethane	0.750	0.820	109	0.750	0.824	110	( 75-127 )	0.43	(< 20 )
Bromoform	0.750	0.742	99	0.750	0.752	100	( 67-132 )	1.40	(< 20 )
Bromomethane	0.750	0.663	88	0.750	0.712	95	( 53-143 )	7.20	(< 20 )

Print Date: 04/06/2021 1:12:37PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [VXX36913]  
 Blank Spike Lab ID: 1604559  
 Date Analyzed: 03/26/2021 12:16

Spike Duplicate ID: LCSD for HBN 1211171 [VXX36913]  
 Spike Duplicate Lab ID: 1604560  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171004

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon disulfide	1.13	1.19	106	1.13	1.24	110	( 63-132 )	4.20	(< 20 )
Carbon tetrachloride	0.750	0.803	107	0.750	0.799	107	( 70-135 )	0.44	(< 20 )
Chlorobenzene	0.750	0.756	101	0.750	0.747	100	( 79-120 )	1.20	(< 20 )
Chloroethane	0.750	0.738	98	0.750	0.748	100	( 59-139 )	1.30	(< 20 )
Chloroform	0.750	0.756	101	0.750	0.753	100	( 78-123 )	0.36	(< 20 )
Chloromethane	0.750	0.680	91	0.750	0.712	95	( 50-136 )	4.60	(< 20 )
cis-1,2-Dichloroethene	0.750	0.750	100	0.750	0.760	101	( 77-123 )	1.30	(< 20 )
cis-1,3-Dichloropropene	0.750	0.757	101	0.750	0.771	103	( 74-126 )	1.80	(< 20 )
Dibromochloromethane	0.750	0.759	101	0.750	0.758	101	( 74-126 )	0.10	(< 20 )
Dibromomethane	0.750	0.790	105	0.750	0.795	106	( 78-125 )	0.63	(< 20 )
Dichlorodifluoromethane	0.750	0.752	100	0.750	0.775	103	( 29-149 )	3.00	(< 20 )
Ethylbenzene	0.750	0.755	101	0.750	0.742	99	( 76-122 )	1.70	(< 20 )
Freon-113	1.13	1.12	100	1.13	1.15	102	( 66-136 )	2.70	(< 20 )
Hexachlorobutadiene	0.750	0.776	103	0.750	0.775	103	( 61-135 )	0.16	(< 20 )
Isopropylbenzene (Cumene)	0.750	0.749	100	0.750	0.754	100	( 68-134 )	0.63	(< 20 )
Methylene chloride	0.750	0.740	99	0.750	0.771	103	( 70-128 )	4.10	(< 20 )
Methyl-t-butyl ether	1.13	1.12	100	1.13	1.12	99	( 73-125 )	0.51	(< 20 )
Naphthalene	0.750	0.829	111	0.750	0.834	111	( 62-129 )	0.60	(< 20 )
n-Butylbenzene	0.750	0.785	105	0.750	0.779	104	( 70-128 )	0.74	(< 20 )
n-Propylbenzene	0.750	0.775	103	0.750	0.764	102	( 73-125 )	1.50	(< 20 )
o-Xylene	0.750	0.745	99	0.750	0.747	100	( 77-123 )	0.23	(< 20 )
P & M -Xylene	1.50	1.46	97	1.50	1.46	97	( 77-124 )	0.03	(< 20 )
sec-Butylbenzene	0.750	0.781	104	0.750	0.756	101	( 73-126 )	3.30	(< 20 )
Styrene	0.750	0.776	104	0.750	0.771	103	( 76-124 )	0.68	(< 20 )
tert-Butylbenzene	0.750	0.761	101	0.750	0.746	100	( 73-125 )	2.00	(< 20 )
Tetrachloroethene	0.750	0.751	100	0.750	0.748	100	( 73-128 )	0.37	(< 20 )
Toluene	0.750	0.739	99	0.750	0.732	98	( 77-121 )	1.00	(< 20 )
trans-1,2-Dichloroethene	0.750	0.745	99	0.750	0.764	102	( 74-125 )	2.60	(< 20 )
trans-1,3-Dichloropropene	0.750	0.779	104	0.750	0.788	105	( 71-130 )	1.10	(< 20 )
Trichloroethene	0.750	0.772	103	0.750	0.768	102	( 77-123 )	0.58	(< 20 )
Trichlorofluoromethane	0.750	0.889	118	0.750	0.912	122	( 62-140 )	2.60	(< 20 )
Vinyl acetate	0.750	0.478	64	0.750	0.564	75	( 50-151 )	16.40	(< 20 )
Vinyl chloride	0.750	0.722	96	0.750	0.742	99	( 56-135 )	2.80	(< 20 )
Xylenes (total)	2.25	2.21	98	2.25	2.21	98	( 78-124 )	0.06	(< 20 )

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [VXX36913]  
 Blank Spike Lab ID: 1604559  
 Date Analyzed: 03/26/2021 12:16

Spike Duplicate ID: LCSD for HBN 1211171 [VXX36913]  
 Spike Duplicate Lab ID: 1604560  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171004

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	0.750		100	0.750		100	( 71-136 )	0.20	
4-Bromofluorobenzene (surr)	0.750		95	0.750		97	( 55-151 )	1.60	
Toluene-d8 (surr)	0.750		98	0.750		99	( 85-116 )	0.41	

## Batch Information

Analytical Batch: VMS20622  
 Analytical Method: SW8260D  
 Instrument: VRA Agilent GC/MS 7890B/5977A  
 Analyst: JMG

Prep Batch: VXX36913  
 Prep Method: SW5035A  
 Prep Date/Time: 03/26/2021 06:00  
 Spike Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL



### Method Blank

Blank ID: MB for HBN 1816952 [WXX/13648]  
Blank Lab ID: 1603230

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211171001, 1211171003, 1211171004, 1211171005

### Results by SM21 4500-NH3 G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Ammonia-N	0.385J	1.20	0.378	mg/kg

### Batch Information

Analytical Batch: WDA4952  
Analytical Method: SM21 4500-NH3 G  
Instrument: Discrete Analyzer 2  
Analyst: EWW  
Analytical Date/Time: 3/18/2021 1:26:22PM

Prep Batch: WXX13648  
Prep Method: METHOD  
Prep Date/Time: 3/18/2021 10:27:00AM  
Prep Initial Wt./Vol.: 1 g  
Prep Extract Vol: 6 mL

Print Date: 04/06/2021 1:12:40PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [WXX13648]  
Blank Spike Lab ID: 1603231  
Date Analyzed: 03/18/2021 13:28

Spike Duplicate ID: LCSD for HBN 1211171 [WXX13648]  
Spike Duplicate Lab ID: 1603232  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171003, 1211171004, 1211171005

### Results by SM21 4500-NH3 G

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Ammonia-N	6	6.65	111	6	6.61	110	( 75-125 )	0.65	(< 25 )

### Batch Information

Analytical Batch: WDA4952  
Analytical Method: SM21 4500-NH3 G  
Instrument: Discrete Analyzer 2  
Analyst: EWW

Prep Batch: WXX13648  
Prep Method: METHOD  
Prep Date/Time: 03/18/2021 10:27  
Spike Init Wt./Vol.: 6 mg/kg Extract Vol: 6 mL  
Dupe Init Wt./Vol.: 6 mg/kg Extract Vol: 6 mL

Print Date: 04/06/2021 1:12:42PM



## Matrix Spike Summary

Original Sample ID: 1211171001  
 MS Sample ID: 1603233 MS  
 MSD Sample ID: 1603234 MSD

Analysis Date: 03/18/2021 15:01  
 Analysis Date: 03/18/2021 15:03  
 Analysis Date: 03/18/2021 15:04  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171003, 1211171004, 1211171005

## Results by SM21 4500-NH3 G

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Ammonia-N	1340	6.62	1640	4580 *	6.54	1471	2030 *	75-125	10.90	(< 25 )

## Batch Information

Analytical Batch: WDA4952  
 Analytical Method: SM21 4500-NH3 G  
 Instrument: Discrete Analyzer 2  
 Analyst: EWW  
 Analytical Date/Time: 3/18/2021 3:03:18PM

Prep Batch: WXX13648  
 Prep Method: Ammonia by SM20 4500F prep (S)  
 Prep Date/Time: 3/18/2021 10:27:00AM  
 Prep Initial Wt./Vol.: 1.03g  
 Prep Extract Vol: 6.00mL



### Method Blank

Blank ID: MB for HBN 1817067 [XXX/44542]  
Blank Lab ID: 1603608

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211171001, 1211171002, 1211171003, 1211171004, 1211171005

### Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/kg
<b>Surrogates</b>				
5a Androstane (surr)	95	60-120		%

### Batch Information

Analytical Batch: XFC15880  
Analytical Method: AK102  
Instrument: Agilent 7890B R  
Analyst: IVM  
Analytical Date/Time: 3/23/2021 11:16:00AM

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 3/22/2021 3:09:40PM  
Prep Initial Wt./Vol.: 30 g  
Prep Extract Vol: 5 mL

Print Date: 04/06/2021 1:12:45PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [XXX44542]  
 Blank Spike Lab ID: 1603609  
 Date Analyzed: 03/23/2021 11:26

Spike Duplicate ID: LCSD for HBN 1211171 [XXX44542]  
 Spike Duplicate Lab ID: 1603610  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171004, 1211171005

## Results by AK102

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Diesel Range Organics	667	752	113	667	746	112	( 75-125 )	0.87	(< 20 )	
<b>Surrogates</b>										
5a Androstane (surr)	16.7		115	16.7		114	( 60-120 )	0.89		

## Batch Information

Analytical Batch: **XFC15880**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **IVM**

Prep Batch: **XXX44542**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **03/22/2021 15:09**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

## Method Blank

Blank ID: MB for HBN 1817067 [XXX/44542]

Blank Lab ID: 1603608

QC for Samples:

1211171001, 1211171002, 1211171003, 1211171004, 1211171005

Matrix: Soil/Solid (dry weight)

## Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	50.0U	100	43.0	mg/kg
<b>Surrogates</b>				
n-Triacontane-d62 (surr)	93.9	60-120		%

## Batch Information

Analytical Batch: XFC15880

Analytical Method: AK103

Instrument: Agilent 7890B R

Analyst: IVM

Analytical Date/Time: 3/23/2021 11:16:00AM

Prep Batch: XXX44542

Prep Method: SW3550C

Prep Date/Time: 3/22/2021 3:09:40PM

Prep Initial Wt./Vol.: 30 g

Prep Extract Vol: 5 mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [XXX44542]  
Blank Spike Lab ID: 1603609  
Date Analyzed: 03/23/2021 11:26

Spike Duplicate ID: LCSD for HBN 1211171 [XXX44542]  
Spike Duplicate Lab ID: 1603610  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171004, 1211171005

### Results by AK103

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	667	746	112	667	739	111	( 60-120 )	1.00	(< 20 )
<b>Surrogates</b>									
n-Triacontane-d62 (surr)	16.7		108	16.7		105	( 60-120 )	3.00	

### Batch Information

Analytical Batch: **XFC15880**  
Analytical Method: **AK103**  
Instrument: **Agilent 7890B R**  
Analyst: **IVM**

Prep Batch: **XXX44542**  
Prep Method: **SW3550C**  
Prep Date/Time: **03/22/2021 15:09**  
Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 04/06/2021 1:12:52PM

**Method Blank**

Blank ID: MB for HBN 1817186 [XXX/44556]

Blank Lab ID: 1604097

QC for Samples:

1211171001, 1211171002

Matrix: Soil/Solid (dry weight)

**Results by 8270D SIM (PAH)**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
2-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthylene	0.0125U	0.0250	0.00625	mg/kg
Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo(a)Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo[a]pyrene	0.0125U	0.0250	0.00625	mg/kg
Benzo[b]Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Benzo[g,h,i]perylene	0.0125U	0.0250	0.00625	mg/kg
Benzo[k]fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Chrysene	0.0125U	0.0250	0.00625	mg/kg
Dibenzo[a,h]anthracene	0.0125U	0.0250	0.00625	mg/kg
Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Fluorene	0.0125U	0.0250	0.00625	mg/kg
Indeno[1,2,3-c,d] pyrene	0.0125U	0.0250	0.00625	mg/kg
Naphthalene	0.0100U	0.0200	0.00500	mg/kg
Phenanthrene	0.0125U	0.0250	0.00625	mg/kg
Pyrene	0.0125U	0.0250	0.00625	mg/kg
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	72.1	58-103		%
Fluoranthene-d10 (surr)	71	54-113		%

**Batch Information**

Analytical Batch: XMS12541  
 Analytical Method: 8270D SIM (PAH)  
 Instrument: SVA Agilent 780/5975 GC/MS  
 Analyst: CDM  
 Analytical Date/Time: 3/29/2021 6:29:00PM

Prep Batch: XXX44556  
 Prep Method: SW3550C  
 Prep Date/Time: 3/26/2021 8:52:49AM  
 Prep Initial Wt./Vol.: 22.5 g  
 Prep Extract Vol: 5 mL

Print Date: 04/06/2021 1:12:54PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [XXX44556]  
 Blank Spike Lab ID: 1604098  
 Date Analyzed: 03/29/2021 18:49

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002

## Results by 8270D SIM (PAH)

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	0.111	0.0888	80	(43-111)
2-Methylnaphthalene	0.111	0.0906	82	(39-114)
Acenaphthene	0.111	0.0913	82	(44-111)
Acenaphthylene	0.111	0.0956	86	(39-116)
Anthracene	0.111	0.0960	86	(50-114)
Benzo(a)Anthracene	0.111	0.0905	81	(54-122)
Benzo[a]pyrene	0.111	0.0999	90	(50-125)
Benzo[b]Fluoranthene	0.111	0.105	94	(53-128)
Benzo[g,h,i]perylene	0.111	0.102	92	(49-127)
Benzo[k]fluoranthene	0.111	0.0977	88	(56-123)
Chrysene	0.111	0.0941	85	(57-118)
Dibenzo[a,h]anthracene	0.111	0.111	100	(50-129)
Fluoranthene	0.111	0.0994	90	(55-119)
Fluorene	0.111	0.0978	88	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.115	103	(49-130)
Naphthalene	0.111	0.0888	80	(38-111)
Phenanthrene	0.111	0.0926	83	(49-113)
Pyrene	0.111	0.0896	81	(55-117)

## Surrogates

2-Methylnaphthalene-d10 (surr)	0.111		72	(58-103)
Fluoranthene-d10 (surr)	0.111		72	(54-113)

## Batch Information

Analytical Batch: XMS12541  
 Analytical Method: 8270D SIM (PAH)  
 Instrument: SVA Agilent 780/5975 GC/MS  
 Analyst: CDM

Prep Batch: XXX44556  
 Prep Method: SW3550C  
 Prep Date/Time: 03/26/2021 08:52  
 Spike Init Wt./Vol.: 0.111 mg/Kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: Extract Vol:



### Matrix Spike Summary

Original Sample ID: 1211252005  
MS Sample ID: 1604100 MS  
MSD Sample ID: 1604101 MSD

Analysis Date: 03/29/2021 21:12  
Analysis Date: 03/29/2021 21:33  
Analysis Date: 03/29/2021 21:53  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002

### Results by 8270D SIM (PAH)

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0136U	0.122	0.0933	77	0.122	0.0962	79	43-111	3.00	(< 20)
2-Methylnaphthalene	0.0136U	0.122	0.0955	79	0.122	0.0973	80	39-114	1.80	(< 20)
Acenaphthene	0.0136U	0.122	0.0943	78	0.122	0.0963	79	44-111	2.00	(< 20)
Acenaphthylene	0.0136U	0.122	0.0987	81	0.122	0.101	83	39-116	2.10	(< 20)
Anthracene	0.0136U	0.122	0.0958	79	0.122	0.0976	81	50-114	1.90	(< 20)
Benzo(a)Anthracene	0.0136U	0.122	0.0916	75	0.122	0.0927	76	54-122	1.20	(< 20)
Benzo(a)pyrene	0.0136U	0.122	0.0996	82	0.122	0.0999	82	50-125	0.35	(< 20)
Benzo(b)Fluoranthene	0.0136U	0.122	0.103	85	0.122	0.104	86	53-128	0.89	(< 20)
Benzo(g,h,i)perylene	0.0136U	0.122	0.0903	74	0.122	0.0884	73	49-127	2.10	(< 20)
Benzo(k)fluoranthene	0.0136U	0.122	0.0981	81	0.122	0.0977	81	56-123	0.42	(< 20)
Chrysene	0.0136U	0.122	0.0941	77	0.122	0.0961	79	57-118	2.10	(< 20)
Dibenzo(a,h)anthracene	0.0136U	0.122	0.105	87	0.122	0.103	85	50-129	2.00	(< 20)
Fluoranthene	0.0136U	0.122	0.101	83	0.122	0.102	84	55-119	1.50	(< 20)
Fluorene	0.0136U	0.122	0.0976	80	0.122	0.102	84	47-114	4.60	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0136U	0.122	0.108	89	0.122	0.107	88	49-130	0.61	(< 20)
Naphthalene	0.0109U	0.122	0.0962	79	0.122	0.0978	81	38-111	1.60	(< 20)
Phenanthrene	0.0136U	0.122	0.0924	76	0.122	0.0943	78	49-113	2.10	(< 20)
Pyrene	0.0136U	0.122	0.0911	75	0.122	0.0926	76	55-117	1.50	(< 20)
<b>Surrogates</b>										
2-Methylnaphthalene-d10 (surr)		0.122	0.0823	68	0.122	0.0849	70	58-103	3.10	
Fluoranthene-d10 (surr)		0.122	0.0801	66	0.122	0.0814	67	54-113	1.70	

### Batch Information

Analytical Batch: XMS12541  
Analytical Method: 8270D SIM (PAH)  
Instrument: SVA Agilent 780/5975 GC/MS  
Analyst: CDM  
Analytical Date/Time: 3/29/2021 9:33:00PM

Prep Batch: XXX44556  
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml  
Prep Date/Time: 3/26/2021 8:52:49AM  
Prep Initial Wt./Vol.: 22.50g  
Prep Extract Vol: 5.00mL

Print Date: 04/06/2021 1:12:59PM





### Method Blank

Blank ID: MB for HBN 1817190 [XXX/44558]

Matrix: Soil/Solid (dry weight)

Blank Lab ID: 1604110

QC for Samples:

1211171001, 1211171002, 1211171003, 1211171004, 1211171005

### Results by SW8270D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,2,4-Trichlorobenzene	0.125U	0.250	0.0780	mg/kg
1,2-Dichlorobenzene	0.125U	0.250	0.0780	mg/kg
1,3-Dichlorobenzene	0.125U	0.250	0.0780	mg/kg
1,4-Dichlorobenzene	0.125U	0.250	0.0780	mg/kg
1-Chloronaphthalene	0.125U	0.250	0.0780	mg/kg
1-Methylnaphthalene	0.125U	0.250	0.0780	mg/kg
2,4,5-Trichlorophenol	0.125U	0.250	0.0780	mg/kg
2,4,6-Trichlorophenol	0.125U	0.250	0.0780	mg/kg
2,4-Dichlorophenol	0.125U	0.250	0.0780	mg/kg
2,4-Dimethylphenol	0.125U	0.250	0.0780	mg/kg
2,4-Dinitrophenol	1.50U	3.00	0.940	mg/kg
2,4-Dinitrotoluene	0.125U	0.250	0.0780	mg/kg
2,6-Dichlorophenol	0.125U	0.250	0.0780	mg/kg
2,6-Dinitrotoluene	0.125U	0.250	0.0780	mg/kg
2-Chloronaphthalene	0.125U	0.250	0.0780	mg/kg
2-Chlorophenol	0.125U	0.250	0.0780	mg/kg
2-Methyl-4,6-dinitrophenol	1.00U	2.00	0.620	mg/kg
2-Methylnaphthalene	0.125U	0.250	0.0780	mg/kg
2-Methylphenol (o-Cresol)	0.125U	0.250	0.0780	mg/kg
2-Nitroaniline	0.125U	0.250	0.0780	mg/kg
2-Nitrophenol	0.125U	0.250	0.0780	mg/kg
3&4-Methylphenol (p&m-Cresol)	0.500U	1.00	0.310	mg/kg
3,3-Dichlorobenzidine	0.250U	0.500	0.150	mg/kg
3-Nitroaniline	0.250U	0.500	0.150	mg/kg
4-Bromophenyl-phenylether	0.125U	0.250	0.0780	mg/kg
4-Chloro-3-methylphenol	0.125U	0.250	0.0780	mg/kg
4-Chloroaniline	0.500U	1.00	0.310	mg/kg
4-Chlorophenyl-phenylether	0.125U	0.250	0.0780	mg/kg
4-Nitroaniline	1.50U	3.00	0.940	mg/kg
4-Nitrophenol	1.00U	2.00	0.620	mg/kg
Acenaphthene	0.125U	0.250	0.0780	mg/kg
Acenaphthylene	0.125U	0.250	0.0780	mg/kg
Aniline	1.00U	2.00	0.620	mg/kg
Anthracene	0.125U	0.250	0.0780	mg/kg
Azobenzene	0.125U	0.250	0.0780	mg/kg
Benzo(a)Anthracene	0.125U	0.250	0.0780	mg/kg
Benzo[a]pyrene	0.125U	0.250	0.0780	mg/kg
Benzo[b]Fluoranthene	0.125U	0.250	0.0780	mg/kg

Print Date: 04/06/2021 1:13:00PM

## Method Blank

Blank ID: MB for HBN 1817190 [XXX/44558]

Matrix: Soil/Solid (dry weight)

Blank Lab ID: 1604110

QC for Samples:

1211171001, 1211171002, 1211171003, 1211171004, 1211171005

## Results by SW8270D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzo[g,h,i]perylene	0.125U	0.250	0.0780	mg/kg
Benzo[k]fluoranthene	0.125U	0.250	0.0780	mg/kg
Benzoic acid	0.750U	1.50	0.470	mg/kg
Benzyl alcohol	0.125U	0.250	0.0780	mg/kg
Bis(2chloro1methylethyl)Ether	0.125U	0.250	0.0780	mg/kg
Bis(2-Chloroethoxy)methane	0.125U	0.250	0.0780	mg/kg
Bis(2-Chloroethyl)ether	0.125U	0.250	0.0780	mg/kg
bis(2-Ethylhexyl)phthalate	0.125U	0.250	0.0780	mg/kg
Butylbenzylphthalate	0.125U	0.250	0.0780	mg/kg
Carbazole	0.125U	0.250	0.0780	mg/kg
Chrysene	0.125U	0.250	0.0780	mg/kg
Dibenzo[a,h]anthracene	0.125U	0.250	0.0780	mg/kg
Dibenzofuran	0.125U	0.250	0.0780	mg/kg
Diethylphthalate	0.125U	0.250	0.0780	mg/kg
Dimethylphthalate	0.125U	0.250	0.0780	mg/kg
Di-n-butylphthalate	0.125U	0.250	0.0780	mg/kg
di-n-Octylphthalate	0.250U	0.500	0.150	mg/kg
Fluoranthene	0.125U	0.250	0.0780	mg/kg
Fluorene	0.125U	0.250	0.0780	mg/kg
Hexachlorobenzene	0.125U	0.250	0.0780	mg/kg
Hexachlorobutadiene	0.125U	0.250	0.0780	mg/kg
Hexachlorocyclopentadiene	0.350U	0.700	0.200	mg/kg
Hexachloroethane	0.125U	0.250	0.0780	mg/kg
Indeno[1,2,3-c,d] pyrene	0.125U	0.250	0.0780	mg/kg
Isophorone	0.125U	0.250	0.0780	mg/kg
Naphthalene	0.125U	0.250	0.0780	mg/kg
Nitrobenzene	0.125U	0.250	0.0780	mg/kg
N-Nitrosodimethylamine	0.125U	0.250	0.0780	mg/kg
N-Nitroso-di-n-propylamine	0.125U	0.250	0.0780	mg/kg
N-Nitrosodiphenylamine	0.125U	0.250	0.0780	mg/kg
Pentachlorophenol	1.00U	2.00	0.620	mg/kg
Phenanthrene	0.125U	0.250	0.0780	mg/kg
Phenol	0.125U	0.250	0.0780	mg/kg
Pyrene	0.125U	0.250	0.0780	mg/kg
<b>Surrogates</b>				
2,4,6-Tribromophenol (surr)	88.1	35-125		%
2-Fluorobiphenyl (surr)	80.9	44-115		%
2-Fluorophenol (surr)	68	35-115		%

Print Date: 04/06/2021 1:13:00PM

## Method Blank

Blank ID: MB for HBN 1817190 [XXX/44558]

Blank Lab ID: 1604110

QC for Samples:

1211171001, 1211171002, 1211171003, 1211171004, 1211171005

Matrix: Soil/Solid (dry weight)

## Results by SW8270D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrobenzene-d5 (surr)	75.9	37-122		%
Phenol-d6 (surr)	79.1	33-122		%
Terphenyl-d14 (surr)	101	54-127		%

## Batch Information

Analytical Batch: XMS12548  
Analytical Method: SW8270D  
Instrument: HP 6890/5973 SSA  
Analyst: NRB  
Analytical Date/Time: 4/3/2021 9:55:00AM

Prep Batch: XXX44558  
Prep Method: SW3550C  
Prep Date/Time: 3/26/2021 11:22:42AM  
Prep Initial Wt./Vol.: 22.5 g  
Prep Extract Vol: 1 mL

Print Date: 04/06/2021 1:13:00PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [XXX44558]  
 Blank Spike Lab ID: 1604111  
 Date Analyzed: 04/03/2021 10:12

Spike Duplicate ID: LCSD for HBN 1211171  
 [XXX44558]  
 Spike Duplicate Lab ID: 1604112  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171004, 1211171005

## Results by SW8270D

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trichlorobenzene	4.44	2.95	66	4.44	3.08	69	( 34-118 )	4.60	(< 20 )
1,2-Dichlorobenzene	4.44	2.79	63	4.44	2.84	64	( 33-117 )	1.70	(< 20 )
1,3-Dichlorobenzene	4.44	2.66	60	4.44	2.77	62	( 30-115 )	3.80	(< 20 )
1,4-Dichlorobenzene	4.44	2.70	61	4.44	2.81	63	( 31-115 )	4.00	(< 20 )
1-Chloronaphthalene	1.78	1.39	78	1.78	1.49	84	( 48-115 )	6.80	(< 20 )
1-Methylnaphthalene	4.44	3.29	74	4.44	3.29	74	( 40-119 )	0.07	(< 20 )
2,4,5-Trichlorophenol	4.44	3.91	88	4.44	4.07	92	( 41-124 )	3.90	(< 20 )
2,4,6-Trichlorophenol	4.44	3.77	85	4.44	3.87	87	( 39-126 )	2.60	(< 20 )
2,4-Dichlorophenol	4.44	3.50	79	4.44	3.58	81	( 40-122 )	2.40	(< 20 )
2,4-Dimethylphenol	4.44	3.72	84	4.44	3.83	86	( 30-127 )	2.90	(< 20 )
2,4-Dinitrophenol	8	8.61	108	8	7.34	92	( 62-113 )	16.00	(< 20 )
2,4-Dinitrotoluene	4.44	3.71	84	4.44	3.25	73	( 48-126 )	13.40	(< 20 )
2,6-Dichlorophenol	1.78	1.39	78	1.78	1.43	80	( 41-117 )	2.90	(< 20 )
2,6-Dinitrotoluene	4.44	3.52	79	4.44	3.29	74	( 46-124 )	6.60	(< 20 )
2-Chloronaphthalene	4.44	3.24	73	4.44	3.41	77	( 41-114 )	5.20	(< 20 )
2-Chlorophenol	4.44	3.23	73	4.44	3.35	75	( 34-121 )	3.70	(< 20 )
2-Methyl-4,6-dinitrophenol	8	8.77	110	8	8.36	104	( 29-132 )	4.90	(< 20 )
2-Methylnaphthalene	4.44	2.89	65	4.44	2.93	66	( 38-122 )	1.40	(< 20 )
2-Methylphenol (o-Cresol)	4.44	3.54	80	4.44	3.62	82	( 32-122 )	2.20	(< 20 )
2-Nitroaniline	4.44	3.90	88	4.44	3.81	86	( 44-127 )	2.40	(< 20 )
2-Nitrophenol	4.44	3.28	74	4.44	3.38	76	( 36-123 )	3.10	(< 20 )
3&4-Methylphenol (p&m-Cresol)	6.22	5.61	90	6.22	5.76	93	( 34-119 )	2.60	(< 20 )
3,3-Dichlorobenzidine	4.44	4.03	91	4.44	3.79	85	( 22-121 )	6.20	(< 20 )
3-Nitroaniline	4.44	4.07	92	4.44	3.64	82	( 33-119 )	11.00	(< 20 )
4-Bromophenyl-phenylether	4.44	4.04	91	4.44	4.25	96	( 46-124 )	5.10	(< 20 )
4-Chloro-3-methylphenol	4.44	4.05	91	4.44	3.92	88	( 45-122 )	3.40	(< 20 )
4-Chloroaniline	4.44	3.34	75	4.44	3.32	75	( 17-106 )	0.61	(< 20 )
4-Chlorophenyl-phenylether	4.44	3.94	89	4.44	3.85	87	( 45-121 )	2.30	(< 20 )
4-Nitroaniline	4.44	4.29	97	4.44	3.62	81	( 77-120 )	16.90	(< 20 )
4-Nitrophenol	6.22	6.39	103	6.22	5.62	90	( 30-132 )	12.80	(< 20 )
Acenaphthene	4.44	3.61	81	4.44	3.67	83	( 40-123 )	1.70	(< 20 )
Acenaphthylene	4.44	3.42	77	4.44	3.48	78	( 32-132 )	1.80	(< 20 )
Aniline	4.44	2.77	62	4.44	2.92	66	( 24-89 )	5.50	(< 20 )
Anthracene	4.44	3.95	89	4.44	3.99	90	( 47-123 )	1.10	(< 20 )

Print Date: 04/06/2021 1:13:03PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [XXX44558]  
 Blank Spike Lab ID: 1604111  
 Date Analyzed: 04/03/2021 10:12

Spike Duplicate ID: LCSD for HBN 1211171  
 [XXX44558]  
 Spike Duplicate Lab ID: 1604112  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171004, 1211171005

## Results by SW8270D

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Azobenzene	4.44	4.27	96	4.44	4.66	105	( 39-125 )	8.80	(< 20 )
Benzo(a)Anthracene	4.44	4.29	97	4.44	4.24	95	( 49-126 )	1.20	(< 20 )
Benzo[a]pyrene	4.44	3.35	76	4.44	3.29	74	( 45-129 )	1.80	(< 20 )
Benzo[b]Fluoranthene	4.44	3.15	71	4.44	2.82	64	( 45-132 )	10.90	(< 20 )
Benzo[g,h,i]perylene	4.44	3.27	74	4.44	3.81	86	( 43-134 )	15.30	(< 20 )
Benzo[k]fluoranthene	4.44	2.98	67	4.44	2.92	66	( 47-132 )	2.10	(< 20 )
Benzoic acid	6.22	6.66	107	6.22	6.12	98	( 53-124 )	8.40	(< 20 )
Benzyl alcohol	4.44	3.47	78	4.44	3.58	81	( 29-122 )	3.30	(< 20 )
Bis(2chloro1methylethyl)Ether	4.44	2.90	65	4.44	2.99	67	( 33-131 )	3.10	(< 20 )
Bis(2-Chloroethoxy)methane	4.44	3.61	81	4.44	3.71	83	( 36-121 )	2.70	(< 20 )
Bis(2-Chloroethyl)ether	4.44	3.09	69	4.44	3.20	72	( 31-120 )	3.70	(< 20 )
bis(2-Ethylhexyl)phthalate	4.44	4.66	105	4.44	4.76	107	( 51-133 )	2.10	(< 20 )
Butylbenzylphthalate	4.44	4.56	103	4.44	4.56	103	( 48-132 )	0.04	(< 20 )
Carbazole	4.44	4.28	96	4.44	4.01	90	( 50-123 )	6.40	(< 20 )
Chrysene	4.44	4.31	97	4.44	4.26	96	( 50-124 )	1.00	(< 20 )
Dibenzo[a,h]anthracene	4.44	3.37	76	4.44	3.93	88	( 45-134 )	15.30	(< 20 )
Dibenzofuran	4.44	3.41	77	4.44	3.42	77	( 44-120 )	0.31	(< 20 )
Diethylphthalate	4.44	4.09	92	4.44	3.89	88	( 50-124 )	5.10	(< 20 )
Dimethylphthalate	4.44	4.31	97	4.44	4.14	93	( 48-124 )	4.00	(< 20 )
Di-n-butylphthalate	4.44	4.39	99	4.44	4.20	95	( 51-128 )	4.20	(< 20 )
di-n-Octylphthalate	4.44	4.67	105	4.44	4.85	109	( 45-140 )	3.90	(< 20 )
Fluoranthene	4.44	4.25	96	4.44	3.74	84	( 50-127 )	12.90	(< 20 )
Fluorene	4.44	3.94	89	4.44	3.86	87	( 43-125 )	2.00	(< 20 )
Hexachlorobenzene	4.44	3.74	84	4.44	3.81	86	( 45-122 )	2.00	(< 20 )
Hexachlorobutadiene	4.44	3.29	74	4.44	3.46	78	( 32-123 )	4.80	(< 20 )
Hexachlorocyclopentadiene	4.44	2.51	57	4.44	2.76	62	( 34-74 )	9.30	(< 20 )
Hexachloroethane	4.44	2.82	63	4.44	2.88	65	( 28-117 )	2.00	(< 20 )
Indeno[1,2,3-c,d] pyrene	4.44	3.30	74	4.44	3.81	86	( 45-133 )	14.40	(< 20 )
Isophorone	4.44	3.58	81	4.44	3.54	80	( 30-122 )	1.10	(< 20 )
Naphthalene	4.44	3.15	71	4.44	3.24	73	( 35-123 )	3.00	(< 20 )
Nitrobenzene	4.44	3.15	71	4.44	3.24	73	( 34-122 )	2.80	(< 20 )
N-Nitrosodimethylamine	4.44	3.05	69	4.44	3.25	73	( 23-120 )	6.50	(< 20 )
N-Nitroso-di-n-propylamine	4.44	4.01	90	4.44	4.05	91	( 36-120 )	1.10	(< 20 )
N-Nitrosodiphenylamine	4.44	3.02	68	4.44	3.20	72	( 38-127 )	5.70	(< 20 )

Print Date: 04/06/2021 1:13:03PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211171 [XXX44558]  
 Blank Spike Lab ID: 1604111  
 Date Analyzed: 04/03/2021 10:12

Spike Duplicate ID: LCSD for HBN 1211171  
 [XXX44558]  
 Spike Duplicate Lab ID: 1604112  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211171001, 1211171002, 1211171003, 1211171004, 1211171005

## Results by SW8270D

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Pentachlorophenol	6.22	5.83	94	6.22	5.43	87	( 25-133 )	7.10	(< 20 )
Phenanthrene	4.44	4.02	91	4.44	4.13	93	( 50-121 )	2.60	(< 20 )
Phenol	4.44	3.45	78	4.44	3.59	81	( 34-121 )	3.90	(< 20 )
Pyrene	4.44	4.41	99	4.44	4.83	109	( 47-127 )	9.00	(< 20 )
<b>Surrogates</b>									
2,4,6-Tribromophenol (surr)	8.89		95	8.89		96	( 35-125 )	0.38	
2-Fluorobiphenyl (surr)	4.44		77	4.44		81	( 44-115 )	4.60	
2-Fluorophenol (surr)	8.89		67	8.89		70	( 35-115 )	3.70	
Nitrobenzene-d5 (surr)	4.44		80	4.44		83	( 37-122 )	4.00	
Phenol-d6 (surr)	8.89		78	8.89		82	( 33-122 )	4.10	
Terphenyl-d14 (surr)	4.44		97	4.44		106	( 54-127 )	9.00	

## Batch Information

Analytical Batch: XMS12548  
 Analytical Method: SW8270D  
 Instrument: HP 6890/5973 SSA  
 Analyst: NRB

Prep Batch: XXX44558  
 Prep Method: SW3550C  
 Prep Date/Time: 03/26/2021 11:22  
 Spike Init Wt./Vol.: 4.44 mg/kg Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 4.44 mg/kg Extract Vol: 1 mL

## Dawkins, Jennifer A (Fairbanks)

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**From:** Dawkins, Jennifer A (Fairbanks)  
**Sent:** Thursday, March 18, 2021 11:23 AM  
**To:** Dawkins, Jennifer A (Fairbanks)  
**Subject:** 1211171 Change Order

Sample SBIW20-1 has limited volume. Please run this sample in order of priority: DRO/RRO, Glycol, Ammonia, SVOC, PAH, Total Metals, per client. The priority list on the COC applies to the other samples.

Thanks,  
Jen

**Jennifer A-B Dawkins**  
**Environment, Health & Safety**  
Fairbanks Client Services  
Project Manager - Alaska  
**SGS**  
3180 Peger Rd. Ste. 190  
Fairbanks, AK 99709  
907-474-8656  
907-322-8444  
[jennifer.dawkins@sgs.com](mailto:jennifer.dawkins@sgs.com)

## **Dawkins, Jennifer A (Fairbanks)**

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**From:** Dawkins, Jennifer A (Fairbanks)  
**Sent:** Thursday, April 1, 2021 9:16 AM  
**To:** Dawkins, Jennifer A (Fairbanks)  
**Subject:** 1211171 Change Order

TCLP Metals (taken off Hold) can be cancelled, per client.

**Jennifer A-B Dawkins**  
**Environment, Health & Safety**  
Fairbanks Client Services  
Project Manager - Alaska  
**SGS**  
3180 Peger Rd. Ste. 190  
Fairbanks, AK 99709  
907-474-8656  
907-322-8444  
[jennifer.dawkins@sgs.com](mailto:jennifer.dawkins@sgs.com)



P#338928JA

1211171

# CHAIN-OF-CUSTODY

**SHANNON & WILSON, INC.**  
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS  
 2355 Hill Road  
 Fairbanks, AK 99709  
 (907) 479-0600  
 www.shannonwilson.com

Laboratory S&S Page 1 of 1  
 Attn: Jan Dawkins  
 (reservative if used)

Quote No: \_\_\_\_\_  
 J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
 Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers					Remarks/Matrix Composition/Grab? Sample Containers		
				GRS (PWR)	DRP (AWD)	PHH (GALD)	SWK (872)	METS (60208)		ETHYLENE GLYCOL	AMMONIA
SBTW20-1	(1A)	1335	3/15/12	X	X	X	X	X	X	4	Soil *high PID
SBTW20-101	(2A)	1325		X	X	X	X	X	X	3	*high PID
SBTW20-2	(1A)	1340		X	X	X	X	X	X	4	*high PID
SBTW19-1	(10A)	1305		X	X	X	X	X	X	4	
SBTW19-2	(11A)	1310		X	X	X	X	X	X	4	
Thp Blank 3	(6A)			X						1	

Project Information	Sample Receipt	Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Number: 103311-011	Total No. of Containers: 20	Signature: <u>Dana Fave</u>	Signature: _____	Signature: _____
Name: <u>Cardona SREBUIC</u>	COC Seats/Intact? Y/N/N/A	Printed Name: <u>Dana Fave</u>	Printed Name: _____	Printed Name: _____
Contact: <u>VEW</u>	Received Good Cond./Cold	Company: <u>Shannon &amp; Wilson, Inc.</u>	Company: _____	Company: _____
Ongoing Project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Temp: _____	Time: <u>9:00</u>	Time: _____	Time: _____
Sampler: <u>DHE + RLU</u>	Delivery Method: <u>Goldstreak</u>	Date: <u>3/15/12</u>	Date: _____	Date: _____
Notes: Had remaining sample volume for TCL metals trip blank remained in cooler with samples at all times				
Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report Yellow - w/shipment - for consignee files Pink - Shannon & Wilson - job file				

Metals: As, Ba, Cd, Cr, Pb, Hg, Se, Ag  
 Priority list: DRP, SWK, metals, PTH, ethylene glycol, ammonia, TCL metals

027 CDV 7436 4846

*Alert*

*Big Cooler*

027-7436 4846 3/17

Shipper's Name and Address <b>Shannon and Wilson Inc</b> 2355 Hill Rd Fairbanks, AK 99712 USA  Tel: 907-479-0600	Shipper's Account Number <b>27400200733</b>  Customer's ID Number <b>10926</b>	Not Negotiable  <b>Air Waybill</b> Issued By <i>Alaska.</i> <b>AIR CARGO</b>  P.O. BOX 68900 SEATTLE, WA 98168 800-225-2752 ALASKACARGO.COM
--	--	---

Consignee's Name and Address <b>SGS North America</b> 200 W Potter Drive Anchorage, AK 99518 USA  Tel: 907-562-2343	Consignee's Account Number <b>27400215947</b>	Also Notify <b>N</b>  Tel:
---	--	-------------------------------------

Issuing Carrier's Agent and City  Agent's IATA Code  Account No.	Accounting Information <b>Shannon and Wilson Inc</b> 2355 Hill Rd Fairbanks, AK 99712 USA  SRN/103311009 GoldStreak	10926
Airport of Departure (Addr. of First Carrier) and Requested Routing <b>Cordova</b>		

To By First Carrier <b>ANC Alaska Airlines</b>	To / By	To / By	Currency <b>USD PP X</b>	WT/VAL <b>X</b>	Other <b>X</b>	Declared Value For Carriage <b>NVD</b>	Declared Value For Customs <b>NCV</b>
Airport of Destination <b>Anchorage</b>	Flight/Date <b>AS 061/16</b>	Flight/Date	Amount of Insurance <b>XXX</b>				

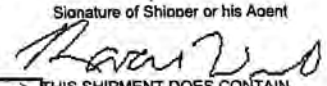
Handling Information

**DANGEROUS GOODS IN EXCEPTED QUANTITIES DGD AND NOTOC NOT REQUIRED**  
**DOT-SP-15368, 3 BOXES EXCEPTED QUANTITIES, 2 BOX JUST SAMPLES**

SCI

No of Pieces	Gross Weight	kg	lb	Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (Incl. Dimensions or Volume)
5	194.0	L	C		194.0		AS AGREED	SOIL & WATER SAMPLES  Dims: 24 x 13 x 14 x 5
5	194.0						AS AGREED	REQ GSX Volume: 12.639

Prepaid <b>AS AGREED</b>	Weight Charge Collect	Other Charges <b>XBC 10.00</b>
Valuation Charge		
Tax		

Total Other Charges Due Agent	Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. I consent to the inspection of this cargo.
Total Other Charges Due Carrier	Signature of Shipper or his Agent <b>For: Shannon and Wilson Inc</b> 
Total Prepaid <b>AS AGREED</b>	<input type="checkbox"/> THIS SHIPMENT DOES NOT CONTAIN DANGEROUS GOODS <input checked="" type="checkbox"/> THIS SHIPMENT DOES CONTAIN DANGEROUS GOODS

Executed On (Date) <b>16 Mar 2021 10:43</b>	at (Place) <b>Cordova</b>	Signature of Issuing Carrier or its Agent <b>Alaska Airlines</b>
--	------------------------------	---

**Alert Expeditors Inc.**

**#411511**

Citywide Delivery • 440-3351  
8421 Flamingo Drive • Anchorage, Alaska 99502


Date 3-17-21  
From Shannon-Wilson

To SGS Labs Inc

Collect  Prepay  Advance Charges

Job # CDV PO# AS 7436-454

Sample - X5  
5 at 194 LBS

Shipped Signature 

Received By: \_\_\_\_\_

Total Charge



e-Sample Receipt Form

SGS Workorder #:

1211171



1 2 1 1 1 7 1

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
<b>Chain of Custody / Temperature Requirements</b>		N/A	Exemption permitted if sampler hand carries/delivers.	
Were Custody Seals intact? Note # & location	Yes	2F		
COC accompanied samples?	Yes			
DOD: Were samples received in COC corresponding coolers?	N/A			
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required				
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1	@ 5.5 °C	Therm. ID: D45
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
*if >6°C, were samples collected <8 hours ago?		N/A		
If <0°C, were sample containers ice free?		N/A		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
<b>Holding Time / Documentation / Sample Condition Requirements</b>		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes			
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes			
**Note: If times differ <1hr, record details & login per COC. ***Note: If sample information on containers differs from COC, SGS will default to COC information				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes			
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A	***Exemption permitted for metals (e.g, 200.8/6020B).	
<b>Volatile / LL-Hg Requirements</b>				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A			
Were all soil VOAs field extracted with MeOH+BFB?	Yes			
<b>Note to Client:</b> Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				



## Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1211171001-A	No Preservative Required	OK			
1211171001-B	No Preservative Required	OK			
1211171001-C	No Preservative Required	OK			
1211171001-D	Methanol field pres. 4 C	OK			
1211171002-A	No Preservative Required	OK			
1211171002-B	No Preservative Required	OK			
1211171002-C	Methanol field pres. 4 C	OK			
1211171003-A	No Preservative Required	OK			
1211171003-B	No Preservative Required	OK			
1211171003-C	No Preservative Required	OK			
1211171003-D	Methanol field pres. 4 C	OK			
1211171004-A	No Preservative Required	OK			
1211171004-B	No Preservative Required	OK			
1211171004-C	No Preservative Required	OK			
1211171004-D	Methanol field pres. 4 C	OK			
1211171005-A	No Preservative Required	OK			
1211171005-B	No Preservative Required	OK			
1211171005-C	No Preservative Required	OK			
1211171005-D	Methanol field pres. 4 C	OK			
1211171006-A	Methanol field pres. 4 C	OK			
1211171007-A	No Preservative Required	OK			
1211171008-A	No Preservative Required	OK			
1211171009-A	No Preservative Required	OK			
1211171010-A	No Preservative Required	OK			
1211171011-A	No Preservative Required	OK			

### Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.



1049 - 28th Street SE  
Grand Rapids, MI 49508  
Ph: 616/248-4900  
Toll Free: 800/362-LABS  
Fax: 616/248-4904

March 29, 2021

Julie Shumway  
SGS North America Inc  
200 W. Potter Drive  
Anchorage, AK 99518

TEL: (907) 562-2343  
FAX (907) 561-5301  
RE: 1211171

Dear Julie Shumway:

Order No.: 2103099

BIO-CHEM Laboratories, Inc. received 4 samples on 3/22/2021 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

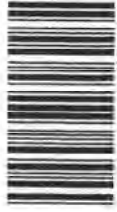
If you have any questions regarding these tests results, please feel free to call.

Please note that unless otherwise instructed, residual samples will be held for sixty (60) days from the original report date. At that time, all non-hazardous samples will be disposed of in accordance with federal, state and local regulations and ordinances, and hazardous samples shall be returned to you. Please contact the laboratory within thirty (30) days if other arrangements for sample retention need to be made.

Sincerely,

Cindy Euwema  
Office Manager

SGS North America Inc.  
CHAIN OF CUSTODY RECORD

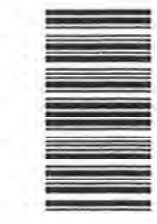


Locations Nationwide  
 Alaska Florida  
 New Jersey Colorado 2103099  
 Texas North Carolina  
 Virginia Louisiana  
 www.us.sgs.com

CLIENT: SGS North America Inc. - Alaska Division CONTACT: Julie Shumway PHONE NO: (907) 562-2343 PROJECT NAME: 1211171 PWSID#: NPDL#: E-MAIL: Julie.Shumway@sgs.com REPORTS TO: Julie Shumway Env.Alaska.ReflabTeam@sgs.com INVOICE TO: SGS - Alaska QUOTE #: P.O. #: 657847		SGS Reference: Additional Comments: All soils report out in dry weight unless		Page 1 of 1							
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE	#	Preservative Used:	MS	MSD	SGS lab #	Location ID	
01	SBIW20-2	03/15/2021	13:40:00	SO	1	NONE			1211171003		
02	SBIW19-1	03/15/2021	13:05:00	SO	1	Ethylene Glycol 8015M			1211171004		
03	SBIW19-2	03/15/2021	13:10:00	SO	1				1211171005		
Relinquished By: (1) <i>[Signature]</i> Received By: Received By: Date: 3/18/21 Time: 1024 Relinquished By: (2) <i>[Signature]</i> Received By: Received By: Date: Date: Time: Time: Relinquished By: (3) Received By: Received By: Date: Date: Time: Time:											
Relinquished By: (4) Received By: Received By: Date: Date: Time: Time:					DOD Project? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Report to DL (J Flags)? YES <input checked="" type="checkbox"/> If J- Report as DULODILOQ. YES <input checked="" type="checkbox"/> Cooler ID: Requested Turnaround Time and-or Special Instructions: Temp Blank °C: Chain of Custody Seal: (Circle) INTACT <input checked="" type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input type="checkbox"/>						

Received For Laboratory By: *[Signature]*  
 3-22-21 8:05 am  
 http://www.sgs.com/terms\_and\_conditions.htm  
 [ X ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301  
 [ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

Locations Nationwide  
 Alaska Florida  
 New Jersey Colorado  
 Texas North Carolina  
 Virginia Louisiana  
 www.us.sgs.com



SGS North America Inc. - Alaska Division  
 CHAIN OF CUSTODY RECORD

2103099  
 212

CLIENT: SGS North America Inc. - Alaska Division		SGS Reference: <b>Bio-Chem</b>		Page 1 of 1					
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless					
PROJECT NAME: 1211171		PWSID#: _____							
REPORTS TO: Julie Shumway		NPDL#: _____							
E-MAIL: Julie.Shumway@sgs.com		Env.Alaska.Ref.LabTeam@sgs.com							
INVOICE TO: SGS - Alaska		QUOTE #: _____							
P.O. #: 657847									
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	#	Preservative Used:	MSD	SGS lab #	Location ID
04	SBIW20-1	3/15/2021	13:35	SO	1	NONE		1211171001	
	SBIW20-2	03/15/2021	13:40:00	SO	1	Ethylene Glycol 8015M		1211171003	JS
	SBIW19-1	03/15/2021	13:05:00	SO	1			1211171004	JS
	SBIW19-2	03/15/2021	13:10:00	SO	1			1211171005	JS
Relinquished By: (1) <i>Julie Shumway</i>		Date	3/22/21	Time	09:54	Received By:			
Relinquished By: (2)		Date		Time		Received By:			
Relinquished By: (3)		Date		Time		Received By:			
Relinquished By: (4)		Date		Time		Received For Laboratory By:			
				Fed Ex		Candy		3-23-21 1:00 Ewing	
DOD Project?		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Data Deliverable Requirements:		Level 2 + XML DV		Chain of Custody Seal: (Circle)	
Report to DL (J Flags)?		YES <input checked="" type="checkbox"/>		Cooler ID:		Requested Turnaround Time and/or Special Instructions:		Temp Blank °C: 2.40	
If J-Report as DL/LOD/LOQ.								or Ambient [ ]	
INTACT		BROKEN		ABSENT					

http://www.sgs.com/terms and conditions.htm

[X] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301  
 [ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557





Cindy Euwema &lt;ceuwema@bio-chem.com&gt;

---

**WO#1211171-received 3/22/21**

2 messages

---

**Cindy Euwema** <ceuwema@bio-chem.com>  
To: Julie Shumway <julie.shumway@sgs.com>

Mon, Mar 22, 2021 at 9:57 AM

Hi Julie,

We just received these samples this morning, so the samples are ambient from sitting over the weekend. Let us know if you would still like us to analyze the samples as soon as we receive the other sample tomorrow.

Thanks,

Cindy Euwema  
Bio-Chem Laboratories, Inc.  
1049 28th St SE  
Grand Rapids, MI 49508  
Phone: (616) 248-4900  
Toll Free: (800) 362-5227  
Fax: (616) 248-4904  
email: ceuwema@bio-chem.com

This email is for the intended recipient only. If you have received it in error, please let us know by reply and then delete it from your system; access, disclosure, copying, distribution or release on any of it by anyone else is prohibited. If you, as intended recipient, have received this email incorrectly, please notify the sender (via email) immediately.

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 **03096coc.pdf**  
673K

---

**Shumway, Julie (Anchorage)** <Julie.Shumway@sgs.com>  
To: Cindy Euwema <ceuwema@bio-chem.com>  
Cc: "Dawkins, Jennifer A (Fairbanks)" <Jennifer.Dawkins@sgs.com>

Mon, Mar 22, 2021 at 2:03 PM

Cindy,

I'm packing up sample #1 right now and when you receive it client would like to proceed with entire WO. They do no mind the ambient Temp. Please include this email in report.

Kindest regards,

Julie

Julie Shumway

**Business Development**

SGS Environment, Health and Safety

---

**CLIENT:** SGS North America Inc  
**Project:** 1211171  
**Lab Order:** 2103099

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date</b>	<b>Date Received</b>
2103099-01A	SBIW20-2	Soil	3/15/2021	3/22/2021
2103099-02A	SBIW19-1	Soil	3/15/2021	3/22/2021
2103099-03A	SBIW19-2	Soil	3/15/2021	3/22/2021
2103099-04A	SBIW20-1	Soil	3/15/2021	3/23/2021

---

**CLIENT:** SGS North America Inc  
**Project:** 1211171  
**Lab Order:** 2103099

**CASE NARRATIVE**

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Samples are routinely analyzed using methods outlined in the following references:

- (SW) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Ed.
- (E) Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020.
- (A) Standard Methods for the Examination of Water and Wastewater, APHA, 18th Ed.
- (D) Annual Book of ASTM Standards.

Specific methods utilized for this project are provided in the analytical report and are identified by the reference document abbreviation ( ) followed by the method number.

All QA/QC and sample analyses met method, laboratory and/or regulatory data quality objectives unless otherwise specified below.

---

No data qualifications required and there are no "J" Flags to report.

**CLIENT:** SGS North America Inc**Project Number:** 1211171**Lab Order:** 2103099**Client Sample ID:** SBIW20-2**Project:** 1211171**Collection Date:** 3/15/2021**Lab Sample ID:** 2103099-01A**Matrix:** SOIL

Analyses	Method Ref.	Result	Q	PQL	Units	DF	Analyst	Date
<b>Alcohols by GC/FID</b>								
1. Ethylene Glycol	SW8015B	< 10		10	mg/Kg-dry	1	LEB	3/24/2021

**Definitions:** PQL - Practical Quantitation Limit  
DF - Dilution Factor

**Qualifiers (Q):** J - Detected below PQL but above MDL: Estimated  
S - Spike Recovery Outside Acceptance Limits  
B - Analyte detected in associated Method Blank  
N - See case narrative for explanation

**CLIENT:** SGS North America Inc

**Project Number:** 1211171

**Lab Order:** 2103099

**Client Sample ID:** SBIW19-1

**Project:** 1211171

**Collection Date:** 3/15/2021

**Lab Sample ID:** 2103099-02A

**Matrix:** SOIL

Analyses	Method Ref.	Result	Q	PQL	Units	DF	Analyst	Date
<b>Alcohols by GC/FID</b>								
1. Ethylene Glycol	SW8015B	< 10		10	mg/Kg-dry	1	LEB	3/24/2021

**Definitions:** PQL - Practical Quantitation Limit  
DF - Dilution Factor

**Qualifiers (Q):** J - Detected below PQL but above MDL: Estimated  
S - Spike Recovery Outside Acceptance Limits  
B - Analyte detected in associated Method Blank  
N - See case narrative for explanation

**CLIENT:** SGS North America Inc**Project Number:** 1211171**Lab Order:** 2103099**Client Sample ID:** SBIW19-2**Project:** 1211171**Collection Date:** 3/15/2021**Lab Sample ID:** 2103099-03A**Matrix:** SOIL

Analyses	Method Ref.	Result	Q	PQL	Units	DF	Analyst	Date
<b>Alcohols by GC/FID</b>								
1. Ethylene Glycol	SW8015B	< 10		10	mg/Kg-dry	1	LEB	3/24/2021

**Definitions:** PQL - Practical Quantitation Limit  
DF - Dilution Factor**Qualifiers (Q):** J - Detected below PQL but above MDL: Estimated  
S - Spike Recovery Outside Acceptance Limits  
B - Analyte detected in associated Method Blank  
N - See case narrative for explanation

CLIENT: SGS North America Inc

Project Number: 1211171

Lab Order: 2103099

Client Sample ID: SBIW20-1

Project: 1211171

Collection Date: 3/15/2021

Lab Sample ID: 2103099-04A

Matrix: SOIL

Analyses	Method Ref.	Result	Q	PQL	Units	DF	Analyst	Date
<b>Alcohols by GC/FID</b>								
1. Ethylene Glycol	SW8015B	< 10		10	mg/Kg-dry	1	LEB	3/24/2021

**Definitions:** PQL - Practical Quantitation Limit  
DF - Dilution Factor

**Qualifiers (Q):** J - Detected below PQL but above MDL: Estimated  
S - Spike Recovery Outside Acceptance Limits  
B - Analyte detected in associated Method Blank  
N - See case narrative for explanation

**Lab Order:** 2103099

**Client:** SGS North America Inc

**Project:** 1211171

## ANALYTICAL DETAIL REPORT

Sample ID	Client Sample ID	Matrix	Test Name	Date Sampled	TCLP/SPLP Date	Prep Date	QC Batch	Analysis Date	Analytical Batch
2103099-01A	SBIW20-2	Soil	Alcohols by GC/FID	3/15/2021		3/23/2021	46184	3/24/2021	GC_B_FID_210324A
2103099-02A	SBIW19-1	Soil	Alcohols by GC/FID	3/15/2021		3/23/2021	46184	3/24/2021	GC_B_FID_210324A
2103099-03A	SBIW19-2	Soil	Alcohols by GC/FID	3/15/2021		3/23/2021	46184	3/24/2021	GC_B_FID_210324A
2103099-04A	SBIW20-1	Soil	Alcohols by GC/FID	3/15/2021		3/23/2021	46184	3/24/2021	GC_B_FID_210324A



CLIENT: SGS North America Inc  
 Work Order: 2103099  
 Project: 1211171

**ANALYTICAL QC SUMMARY REPORT**

TestCode: ALCOHOL\_S

Sample ID: MB-46184	SampType: MBLK	TestCode: ALCOHOL_S	Units: mg/Kg-dry	Prep Date: 3/23/2021	Run ID: GC_B_FID_210324A						
Client ID: ZZZZZ	Batch ID: 46184	TestNo: SW8015B	(SW8015B)	Analysis Date: 3/24/2021	SeqNo: 1141400						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylene Glycol	< 10	10	50	0	133	69.4	128	0	0	0	S

Sample ID: LCS-46184	SampType: LCS	TestCode: ALCOHOL_S	Units: mg/Kg-dry	Prep Date: 3/23/2021	Run ID: GC_B_FID_210324A						
Client ID: ZZZZZ	Batch ID: 46184	TestNo: SW8015B	(SW8015B)	Analysis Date: 3/24/2021	SeqNo: 1141401						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylene Glycol	66.31	10	50	0	133	69.4	128	0	0	0	S

Sample ID: 2103099-01AMS	SampType: MS	TestCode: ALCOHOL_S	Units: mg/Kg-dry	Prep Date: 3/23/2021	Run ID: GC_B_FID_210324A						
Client ID: SBIW20-2	Batch ID: 46184	TestNo: SW8015B	(SW8015B)	Analysis Date: 3/24/2021	SeqNo: 1141406						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylene Glycol	95.95	10	101.5	0	94.5	65.6	129	0	0	0	

Sample ID: 2103099-01AMSD	SampType: MSD	TestCode: ALCOHOL_S	Units: mg/Kg-dry	Prep Date: 3/23/2021	Run ID: GC_B_FID_210324A						
Client ID: SBIW20-2	Batch ID: 46184	TestNo: SW8015B	(SW8015B)	Analysis Date: 3/24/2021	SeqNo: 1141407						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylene Glycol	122.2	10	101.5	0	120	65.6	129	95.95	24.1	20	

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

**Laboratory Data Review Checklist**

Completed By:

Michael Jaramillo

Title:

Senior Chemist

Date:

4/6/21

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1211171

Laboratory Report Date:

4/6/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

ADEC File Number:

2215.38.035

Hazard Identification Number:

27304

1211171

Laboratory Report Date:

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CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all the submitted sample analyses?

Yes  No  N/A  Comments:

The contract laboratory, SGS North America, Inc. (SGS), in Anchorage, AK performed the gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), volatile organic compound (VOC), semi-volatile range organic (SVOC), polynuclear aromatic hydrocarbon (PAH), Resource Conservation and Recovery Act (RCRA) metals, and ammonia analyses. The laboratory is certified by the ADEC Contaminated Sites Program for the requested analyses.

The analysis of ethylene glycol was subcontracted to Bio-Chem of Grand Rapids, MI.

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

The analysis for ethylene glycol is not certified by the ADEC Contaminated Sites Program.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

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3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

The sample cooler received by SGS were within the acceptable temperature range. However, one of the two sample coolers shipped to Bio-Chem via FedEx was received at ambient temperature due to weather delays which resulted in the sample cooler sitting in the Grand Rapids, MI FedEx facility over the weekend. This cooler contained samples *SBIW19-1*, *SBIW19-2*, and *SBIW20-2* for ethylene glycol analysis. The laboratory was directed to perform the requested analysis. However, due to the gross temperature exceedance, the instability of the target analyte, and the non-detect results for these samples, the sample results are considered unusable and reported as 'R' in the analytical database.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

The laboratory report noted that samples were received in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

See above.

e. Data quality or usability affected?

Comments:

Data quality and usability were affected; see above.

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4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

Ethylene glycol samples were using method SW8015M by Bio-Chem of Grand Rapids, MI.

Samples *SBIW20-1* and *SBIW20-101* had elevated limits of quantitation (LOQs) for PAH analysis by method SW8270D SIM due to sample dilution. The samples were diluted due to the dark color of the extracts. Data quality was not affected.

Samples *SBIW19-1*, *SBIW20-1*, and *SBIW20-101* had elevated LOQs for SVOC analysis by method SW8270D due to sample dilution. The samples were diluted due to the dark color of the extracts. In addition, sample *SWIW19-1* was diluted due to matrix interference with the internal standards for this analysis. Data quality is not affected.

The continuing calibration verification (CCV) sample associated with analytical batch VMS20622 for VOC analysis by method SW8260D had a low recovery for vinyl acetate for sample *SBIW19-1*. Sample *SBIW19-1* was reanalyzed outside of the method recognized hold time to confirm the initial sample results. The initial sample results were confirmed, and the in-hold data is used for reporting purposes. The analyte was not detected, and the result is considered estimated and flagged 'UJ' in the analytical database.

The matrix spike (MS) and matrix spike duplicate (MSD) associated with preparation batch WXX13648 had recovery failures for ammonia by method 4500NH3-G. Refer to the LCS for accuracy requirements and Section 6.c. for further assessment.

The MSD associated with preparation batch MXX34046 had a recovery failure for barium. However, the post digestion spike was successful. Refer to Section 6.c. for further assessment.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

Sample *SBIW19-1* was reanalyzed for VOC analysis due to the low CCV failure for vinyl acetate. The initial sample result was confirmed and used for reporting purposes.

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d. What is the effect on data quality/usability according to the case narrative?

Comments:

The laboratory does not specify an effect on the data quality/usability. However, the vinyl acetate result for sample *SBIW19-1* is affected by the low CCV failure and flagged 'UJ' in the analytical database. Refer to subsequent sections for further assessment of remaining QC failures.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

Analytical sensitivity was evaluated to verify that LODs met the applicable DEC Cleanup Level. The LODs for non-detect results were below the applicable DEC cleanup levels, with the following exceptions. Mercury, naphthalene (PAH analysis), and several VOC and SVOC analytes had LODs for non-detect results greater than the DEC Cleanup Levels in one or more project sample. We cannot assess if these analytes are present in the samples at concentrations greater than the DEC Cleanup Level but less than the LOD.

e. Data quality or usability affected?

Yes  No  N/A

See above.

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6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

However, GRO and ammonia were detected at estimated concentrations below the LOQs in the method blank samples associated with preparation batches VXX36890 and WXX13648, respectively.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Samples are considered affected if they are associated with the same preparation batch and have detections within ten times the method blank detection. All project samples requested for GRO and ammonia analyses are associated with the preparation batch containing the method blank detections for these analytes.  
  
GRO was detected at estimated concentrations in project samples *SBIW19-1*, *SBIW19-2*, *SBIW20-1*, and *SBIW20-101* and the trip blank within ten times the method blank detection. The sample results are considered non-detect and are flagged 'UB' at the LOQ in the analytical database.  
  
Ammonia was detected in the project sample *SBIW19-2* at a concentration more than five times but less than ten times the method blank detection. The sample result is considered estimated, biased high, and is flagged 'JH' in the analytical database.  
  
The remaining samples did not have detections for these analytes or had detections greater than ten times the associated method blank detections.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

v. Data quality or usability affected?

Comments:

Yes; see above.

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b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

An LCS was reported for VOC (for preparation batch VXX36901), PAH, and glycol analyses. Refer to Section 6.c. for assessment of laboratory precision.

LCS/LCSD samples were reported for GRO, DRO, RRO, VOC (for preparation batch VXX36913) and SVOC analyses.

- ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

An LCS was reported for metals analysis. Refer to Section 6.c. for assessment of laboratory precision.

LCS/LCSD samples were reported for ammonia analysis.

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

The ethylene glycol LCS associated with preparation batch 46184 had a high recovery failure for ethylene glycol.

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Ethylene glycol was not detected in the project samples. Project samples are not affected by the high LCS recovery failure for this analyte.



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vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability are not affected; see above.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

MS/MSD samples were reported for VOC (for preparation batch VXX36901), PAH, and glycol analyses.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

MS/MSD samples were reported for metals and ammonia analyses.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

The metals MSD associated with preparation batch MXX34046 had a high recovery failure for barium. The initial concentration was greater than the spiking concentration and the bench spike was within acceptance limits. The data quality is not affected by the MSD recovery failure for barium.

The ammonia MS and MSD associated with preparation batch WXX13648 had high recovery failures for ammonia. The initial concentration was greater than the spiking concentration. The data quality is not affected by the MS and MSD recovery failures for ammonia.

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- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  Comments:

The ethylene glycol MS/MSD associated with preparation batch 46184 had an RPD failure for ethylene glycol. The parent sample *SBIW20-2* did not have a detection for this analyte. Due to a gross temperature exceedance, the sample results are considered unusable and further qualification is not required.

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A; see above.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability are not affected; see above.

- d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

- i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

- iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

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iv. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes  No  N/A  Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Trip blank results were below the LOQ; however, GRO was detected in the trip blank sample TB-3. The detection for GRO in the trip blank and associated project samples were previously attributed to a method blank detection. Refer to Section 6.a. for applied qualifiers to the data.

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; see above.

v. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

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ii. Submitted blind to lab?

Yes  No  N/A  Comments:

Field duplicate sample pair *SBIW20-1/SBIW20-101* was submitted with this work order.

iii. Precision – All relative percent differences (RPD) less than specified project objectives?  
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration  
 $R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

The field-duplicate RPDs were greater than the recommended DQO of 50% for DRO, RRO, styrene, pyrene (PAH analysis), and bis(2-ethylhexyl)phthalate. The sample results are considered estimated and are flagged 'J' in the analytical database.

In addition, toluene was detected in the primary sample above the LOQ but not detected in the field duplicate sample. This is considered a precision failure and the results are flagged 'J' for the detected result and 'UJ' for the non-detect result.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability are affected; see above.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Project samples were not collected with reusable sampling equipment. An equipment blank was not required for this project sample set.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Project samples were not collected with reusable sampling equipment. An equipment blank was not required for this project sample set.

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ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; project samples were not collected with reusable sampling equipment. An equipment blank was not required for this project sample set.

iii. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

Other data flags or qualifiers were not required.



## Laboratory Report of Analysis

To: Shannon & Wilson-Fairbanks  
5430 Fairbanks Street, Suite 3  
Anchorage, AK 99518  
907-479-0600

Report Number: **1211172**

Client Project: **103311-009 Cordova SREB**

Dear Valerie Webb,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jennifer at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,  
SGS North America Inc.

Stephen C. Ede

2021.04.01

15:45:06 -08'00'

Jennifer Dawkins  
Project Manager  
Jennifer.Dawkins@sgs.com

Date

### Case Narrative

SGS Client: **Shannon & Wilson-Fairbanks**  
SGS Project: **1211172**  
Project Name/Site: **103311-009 Cordova SREB**  
Project Contact: **Valerie Webb**

Refer to sample receipt form for information on sample condition.

**SB12-1 (1211172025) PS**

8270D SIM - PAH Sample extracted outside of hold time. Out of hold data reported.

**1211203001(1603925MSD) (1603924) MSD**

8260D - MSD RPD for trichlorofluoromethane does not meet QC criteria. This analyte is less than the LOQ in the parent sample.

\*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 04/01/2021 3:16:12PM

## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.





### Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
SBMW1-1	1211172001	03/11/2021	03/17/2021	Soil/Solid (dry weight)
SBMW1-2	1211172002	03/11/2021	03/17/2021	Soil/Solid (dry weight)
SBMW2-1	1211172003	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SBMW2-2	1211172004	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SBMW3-1	1211172005	03/11/2021	03/17/2021	Soil/Solid (dry weight)
SBMW3-101	1211172006	03/11/2021	03/17/2021	Soil/Solid (dry weight)
SBMW3-2	1211172007	03/11/2021	03/17/2021	Soil/Solid (dry weight)
SBMW4-1	1211172008	03/13/2021	03/17/2021	Soil/Solid (dry weight)
SBMW4-2	1211172009	03/13/2021	03/17/2021	Soil/Solid (dry weight)
SBTWP5-1	1211172010	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SBTWP5-2	1211172011	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SBTWP5-102	1211172012	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SBTWP6-1	1211172013	03/13/2021	03/17/2021	Soil/Solid (dry weight)
SBTWP6-101	1211172014	03/13/2021	03/17/2021	Soil/Solid (dry weight)
SBTWP6-2	1211172015	03/13/2021	03/17/2021	Soil/Solid (dry weight)
SBTWP7-1	1211172016	03/13/2021	03/17/2021	Soil/Solid (dry weight)
SBTWP7-2	1211172017	03/13/2021	03/17/2021	Soil/Solid (dry weight)
SBMW4-101	1211172018	03/13/2021	03/17/2021	Soil/Solid (dry weight)
SB9-1	1211172019	03/11/2021	03/17/2021	Soil/Solid (dry weight)
SB9-2	1211172020	03/11/2021	03/17/2021	Soil/Solid (dry weight)
SB10-1	1211172021	03/10/2021	03/17/2021	Soil/Solid (dry weight)
SB10-2	1211172022	03/10/2021	03/17/2021	Soil/Solid (dry weight)
SB11-1	1211172023	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SB11-2	1211172024	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SB12-1	1211172025	03/10/2021	03/17/2021	Soil/Solid (dry weight)
SB12-2	1211172026	03/10/2021	03/17/2021	Soil/Solid (dry weight)
SB13-1	1211172027	03/10/2021	03/17/2021	Soil/Solid (dry weight)
SB13-2	1211172028	03/10/2021	03/17/2021	Soil/Solid (dry weight)
SB14-1	1211172029	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SB14-2	1211172030	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SB15-1	1211172031	03/11/2021	03/17/2021	Soil/Solid (dry weight)
SB15-2	1211172032	03/11/2021	03/17/2021	Soil/Solid (dry weight)
SB16-1	1211172033	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SB16-2	1211172034	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SB17-1	1211172035	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SB17-2	1211172036	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SB18-1	1211172037	03/12/2021	03/17/2021	Soil/Solid (dry weight)
SB18-2	1211172038	03/12/2021	03/17/2021	Soil/Solid (dry weight)
Trip Blank (TB-1)	1211172039	03/10/2021	03/17/2021	Soil/Solid (dry weight)

Print Date: 04/01/2021 3:16:16PM

### Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
Trip Blank (TB-2)	1211172040	03/10/2021	03/17/2021	Soil/Solid (dry weight)

<u>Method</u>	<u>Method Description</u>
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
AK103	Diesel/Residual Range Organics
AK102	Diesel/Residual Range Organics
AK101	Gasoline Range Organics (S)
SM21 2540G	Percent Solids SM2540G
SW8260D	VOC 8260 (S) Field Extracted

Print Date: 04/01/2021 3:16:16PM

### Detectable Results Summary

Client Sample ID: **SBMW1-1**

Lab Sample ID: 1211172001

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	219	mg/kg
Residual Range Organics	2330	mg/kg

**Volatile GC/MS**

Chloroform	0.00211J	mg/kg
Toluene	0.00978J	mg/kg
Vinyl chloride	0.00291	mg/kg

Client Sample ID: **SBMW2-1**

Lab Sample ID: 1211172003

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	178	mg/kg
Residual Range Organics	2030	mg/kg

Client Sample ID: **SBMW2-2**

Lab Sample ID: 1211172004

**Volatile GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.00534J	mg/kg
o-Xylene	0.0148J	mg/kg
P & M -Xylene	0.0292J	mg/kg
Toluene	0.0292	mg/kg
Xylenes (total)	0.0440J	mg/kg

Client Sample ID: **SBMW3-1**

Lab Sample ID: 1211172005

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	59.9	mg/kg
Residual Range Organics	673	mg/kg

Client Sample ID: **SBMW3-101**

Lab Sample ID: 1211172006

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	49.1	mg/kg
Residual Range Organics	535	mg/kg

Client Sample ID: **SBMW4-1**

Lab Sample ID: 1211172008

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	29.9	mg/kg
Residual Range Organics	248	mg/kg

Client Sample ID: **SBTWP5-1**

Lab Sample ID: 1211172010

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	34.1	mg/kg
Residual Range Organics	348	mg/kg

Client Sample ID: **SBTWP5-102**

Lab Sample ID: 1211172012

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	7.74J	mg/kg

Client Sample ID: **SBTWP6-1**

Lab Sample ID: 1211172013

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	203	mg/kg
Residual Range Organics	2240	mg/kg

### Detectable Results Summary

Client Sample ID: **SBTWP6-101**

Lab Sample ID: 1211172014

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	163	mg/kg
Residual Range Organics	1780	mg/kg

Client Sample ID: **SBTWP6-2**

Lab Sample ID: 1211172015

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	6.69J	mg/kg

Client Sample ID: **SBTWP7-1**

Lab Sample ID: 1211172016

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	8.53J	mg/kg

Client Sample ID: **SBTWP7-2**

Lab Sample ID: 1211172017

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	7.99J	mg/kg

Client Sample ID: **SBMW4-101**

Lab Sample ID: 1211172018

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	27.8	mg/kg
Residual Range Organics	254	mg/kg
4-Isopropyltoluene	0.0429J	mg/kg

**Volatile GC/MS**

Client Sample ID: **SB9-1**

Lab Sample ID: 1211172019

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	12.2J	mg/kg
Residual Range Organics	52.6J	mg/kg

Client Sample ID: **SB9-2**

Lab Sample ID: 1211172020

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	8.09J	mg/kg

Client Sample ID: **SB10-1**

Lab Sample ID: 1211172021

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	7.90J	mg/kg

**Volatile Fuels**

Gasoline Range Organics	0.895J	mg/kg
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**Volatile GC/MS**

Toluene	0.0174J	mg/kg
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Client Sample ID: **SB10-2**

Lab Sample ID: 1211172022

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	7.04J	mg/kg

**Volatile Fuels**

Gasoline Range Organics	0.650J	mg/kg
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Client Sample ID: **SB11-1**

Lab Sample ID: 1211172023

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	11.4J	mg/kg

**Volatile Fuels**

Gasoline Range Organics	0.824J	mg/kg
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Client Sample ID: **SB11-2**

Lab Sample ID: 1211172024

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	8.19J	mg/kg

**Volatile Fuels**

Gasoline Range Organics	0.773J	mg/kg
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### Detectable Results Summary

Client Sample ID: **SB12-1**  
 Lab Sample ID: 1211172025  
**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	38.9	mg/kg
Residual Range Organics	387	mg/kg

Client Sample ID: **SB12-2**  
 Lab Sample ID: 1211172026  
**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.796J	mg/kg

Client Sample ID: **SB13-1**  
 Lab Sample ID: 1211172027  
**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	78.6	mg/kg
Residual Range Organics	926	mg/kg
Gasoline Range Organics	1.19J	mg/kg
o-Xylene	0.0111J	mg/kg
P & M -Xylene	0.0305J	mg/kg
Xylenes (total)	0.0417J	mg/kg

**Volatile Fuels**  
**Volatile GC/MS**

Client Sample ID: **SB13-2**  
 Lab Sample ID: 1211172028  
**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.736J	mg/kg

Client Sample ID: **SB14-1**  
 Lab Sample ID: 1211172029  
**Volatile Fuels**  
**Volatile GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	1.04J	mg/kg
Toluene	0.0171J	mg/kg

Client Sample ID: **SB14-2**  
 Lab Sample ID: 1211172030  
**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.716J	mg/kg

Client Sample ID: **SB15-1**  
 Lab Sample ID: 1211172031  
**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	55.0	mg/kg
Residual Range Organics	724	mg/kg
Gasoline Range Organics	0.655J	mg/kg

**Volatile Fuels**

Client Sample ID: **SB15-2**  
 Lab Sample ID: 1211172032  
**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.770J	mg/kg

Client Sample ID: **SB16-1**  
 Lab Sample ID: 1211172033  
**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	13.0J	mg/kg
Residual Range Organics	124	mg/kg
Gasoline Range Organics	0.875J	mg/kg

**Volatile Fuels**

Client Sample ID: **SB16-2**  
 Lab Sample ID: 1211172034  
**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.764J	mg/kg

### Detectable Results Summary

Client Sample ID: **SB17-2**  
 Lab Sample ID: 1211172036

**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.613J	mg/kg

Client Sample ID: **SB18-1**  
 Lab Sample ID: 1211172037

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	17.0J	mg/kg
Residual Range Organics	148	mg/kg

**Volatile Fuels**

Gasoline Range Organics	1.09J	mg/kg
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**Volatile GC/MS**

Benzene	0.00515J	mg/kg
Ethylbenzene	0.00957J	mg/kg
o-Xylene	0.0118J	mg/kg
P & M -Xylene	0.0373J	mg/kg
Toluene	0.0444	mg/kg
Xylenes (total)	0.0491J	mg/kg

Client Sample ID: **SB18-2**  
 Lab Sample ID: 1211172038

**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.769J	mg/kg

Client Sample ID: **Trip Blank (TB-1)**  
 Lab Sample ID: 1211172039

**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.774J	mg/kg

Client Sample ID: **Trip Blank (TB-2)**  
 Lab Sample ID: 1211172040

**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.840J	mg/kg



Results of **SBMW1-1**

Client Sample ID: **SBMW1-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172001  
Lab Project ID: 1211172

Collection Date: 03/11/21 14:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	219	21.6	6.70	mg/kg	1		03/23/21 14:33

**Surrogates**

5a Androstane (surr)	73.3	50-150		%	1		03/23/21 14:33
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:33  
Container ID: 1211172001-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.044 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	2330	108	46.5	mg/kg	1		03/23/21 14:33

**Surrogates**

n-Triacontane-d62 (surr)	103	50-150		%	1		03/23/21 14:33
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:33  
Container ID: 1211172001-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.044 g  
Prep Extract Vol: 5 mL

## Results of SBMW1-1

Client Sample ID: **SBMW1-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172001  
 Lab Project ID: 1211172

Collection Date: 03/11/21 14:15  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):92.4  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.32 U	2.64	0.793	mg/kg	1		03/19/21 16:42
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	81.3	50-150		%	1		03/19/21 16:42

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 03/19/21 16:42  
 Container ID: 1211172001-A

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/11/21 14:15  
 Prep Initial Wt./Vol.: 60.706 g  
 Prep Extract Vol: 29.6383 mL





Results of **SBMW1-1**

Client Sample ID: **SBMW1-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172001  
Lab Project ID: 1211172

Collection Date: 03/11/21 14:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0106 U	0.0211	0.00655	mg/kg	1		03/18/21 15:30
1,1,1-Trichloroethane	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
1,1,2,2-Tetrachloroethane	0.00105 U	0.00211	0.000655	mg/kg	1		03/18/21 15:30
1,1,2-Trichloroethane	0.000423 U	0.000846	0.000264	mg/kg	1		03/18/21 15:30
1,1-Dichloroethane	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
1,1-Dichloroethene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
1,1-Dichloropropene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
1,2,3-Trichlorobenzene	0.0265 U	0.0529	0.0159	mg/kg	1		03/18/21 15:30
1,2,3-Trichloropropane	0.00105 U	0.00211	0.000655	mg/kg	1		03/18/21 15:30
1,2,4-Trichlorobenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
1,2,4-Trimethylbenzene	0.0265 U	0.0529	0.0159	mg/kg	1		03/18/21 15:30
1,2-Dibromo-3-chloropropane	0.0530 U	0.106	0.0328	mg/kg	1		03/18/21 15:30
1,2-Dibromoethane	0.000530 U	0.00106	0.000423	mg/kg	1		03/18/21 15:30
1,2-Dichlorobenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
1,2-Dichloroethane	0.00105 U	0.00211	0.000740	mg/kg	1		03/18/21 15:30
1,2-Dichloropropane	0.00530 U	0.0106	0.00328	mg/kg	1		03/18/21 15:30
1,3,5-Trimethylbenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
1,3-Dichlorobenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
1,3-Dichloropropane	0.00530 U	0.0106	0.00328	mg/kg	1		03/18/21 15:30
1,4-Dichlorobenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
2,2-Dichloropropane	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
2-Butanone (MEK)	0.132 U	0.264	0.0825	mg/kg	1		03/18/21 15:30
2-Chlorotoluene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
2-Hexanone	0.0530 U	0.106	0.0328	mg/kg	1		03/18/21 15:30
4-Chlorotoluene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
4-Isopropyltoluene	0.0530 U	0.106	0.0264	mg/kg	1		03/18/21 15:30
4-Methyl-2-pentanone (MIBK)	0.132 U	0.264	0.0825	mg/kg	1		03/18/21 15:30
Acetone	0.132 U	0.264	0.0825	mg/kg	1		03/18/21 15:30
Benzene	0.00660 U	0.0132	0.00412	mg/kg	1		03/18/21 15:30
Bromobenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
Bromochloromethane	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
Bromodichloromethane	0.00105 U	0.00211	0.000655	mg/kg	1		03/18/21 15:30
Bromoform	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
Bromomethane	0.0106 U	0.0211	0.00655	mg/kg	1		03/18/21 15:30
Carbon disulfide	0.0530 U	0.106	0.0328	mg/kg	1		03/18/21 15:30
Carbon tetrachloride	0.00660 U	0.0132	0.00412	mg/kg	1		03/18/21 15:30
Chlorobenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30



**Results of SBMW1-1**

Client Sample ID: **SBMW1-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172001  
 Lab Project ID: 1211172

Collection Date: 03/11/21 14:15  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):92.4  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.106 U	0.211	0.0655	mg/kg	1		03/18/21 15:30
Chloroform	0.00211 J	0.00423	0.00106	mg/kg	1		03/18/21 15:30
Chloromethane	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
cis-1,2-Dichloroethene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
cis-1,3-Dichloropropene	0.00660 U	0.0132	0.00412	mg/kg	1		03/18/21 15:30
Dibromochloromethane	0.00265 U	0.00529	0.00159	mg/kg	1		03/18/21 15:30
Dibromomethane	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
Dichlorodifluoromethane	0.0265 U	0.0529	0.0159	mg/kg	1		03/18/21 15:30
Ethylbenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
Freon-113	0.0530 U	0.106	0.0328	mg/kg	1		03/18/21 15:30
Hexachlorobutadiene	0.0106 U	0.0211	0.00655	mg/kg	1		03/18/21 15:30
Isopropylbenzene (Cumene)	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
Methylene chloride	0.0530 U	0.106	0.0328	mg/kg	1		03/18/21 15:30
Methyl-t-butyl ether	0.0530 U	0.106	0.0328	mg/kg	1		03/18/21 15:30
Naphthalene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
n-Butylbenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
n-Propylbenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
o-Xylene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
P & M -Xylene	0.0265 U	0.0529	0.0159	mg/kg	1		03/18/21 15:30
sec-Butylbenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
Styrene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
tert-Butylbenzene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
Tetrachloroethene	0.00660 U	0.0132	0.00412	mg/kg	1		03/18/21 15:30
Toluene	0.00978 J	0.0264	0.00825	mg/kg	1		03/18/21 15:30
trans-1,2-Dichloroethene	0.0132 U	0.0264	0.00825	mg/kg	1		03/18/21 15:30
trans-1,3-Dichloropropene	0.00660 U	0.0132	0.00412	mg/kg	1		03/18/21 15:30
Trichloroethene	0.00265 U	0.00529	0.00159	mg/kg	1		03/18/21 15:30
Trichlorofluoromethane	0.0265 U	0.0529	0.0159	mg/kg	1		03/18/21 15:30
Vinyl acetate	0.0530 U	0.106	0.0328	mg/kg	1		03/18/21 15:30
Vinyl chloride	0.00291	0.000846	0.000264	mg/kg	1		03/18/21 15:30
Xylenes (total)	0.0396 U	0.0793	0.0241	mg/kg	1		03/18/21 15:30
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/18/21 15:30
4-Bromofluorobenzene (surr)	81.3	55-151		%	1		03/18/21 15:30
Toluene-d8 (surr)	93.7	85-116		%	1		03/18/21 15:30



Results of **SBMW1-1**

Client Sample ID: **SBMW1-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172001  
Lab Project ID: 1211172

Collection Date: 03/11/21 14:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.4  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 15:30  
Container ID: 1211172001-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 14:15  
Prep Initial Wt./Vol.: 60.706 g  
Prep Extract Vol: 29.6383 mL



Results of **SBMW1-2**

Client Sample ID: **SBMW1-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172002  
Lab Project ID: 1211172

Collection Date: 03/11/21 15:10  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):84.7  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	11.7 U	23.4	7.25	mg/kg	1		03/23/21 13:05

**Surrogates**

5a Androstane (surr)	97.8	50-150		%	1		03/23/21 13:05
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:05  
Container ID: 1211172002-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.271 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	58.5 U	117	50.3	mg/kg	1		03/23/21 13:05

**Surrogates**

n-Triacontane-d62 (surr)	95.8	50-150		%	1		03/23/21 13:05
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:05  
Container ID: 1211172002-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.271 g  
Prep Extract Vol: 5 mL



Results of **SBMW1-2**

Client Sample ID: **SBMW1-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172002  
Lab Project ID: 1211172

Collection Date: 03/11/21 15:10  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):84.7  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.59 U	3.18	0.954	mg/kg	1		03/19/21 17:00
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	95.1	50-150		%	1		03/19/21 17:00

**Batch Information**

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 17:00  
Container ID: 1211172002-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 15:10  
Prep Initial Wt./Vol.: 64.756 g  
Prep Extract Vol: 34.8923 mL



**Results of SBMW1-2**

Client Sample ID: **SBMW1-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172002  
 Lab Project ID: 1211172

Collection Date: 03/11/21 15:10  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):84.7  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0127 U	0.0254	0.00789	mg/kg	1		03/18/21 15:45
1,1,1-Trichloroethane	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
1,1,2,2-Tetrachloroethane	0.00127 U	0.00254	0.000789	mg/kg	1		03/18/21 15:45
1,1,2-Trichloroethane	0.000510 U	0.00102	0.000318	mg/kg	1		03/18/21 15:45
1,1-Dichloroethane	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
1,1-Dichloroethene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
1,1-Dichloropropene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
1,2,3-Trichlorobenzene	0.0318 U	0.0636	0.0191	mg/kg	1		03/18/21 15:45
1,2,3-Trichloropropane	0.00127 U	0.00254	0.000789	mg/kg	1		03/18/21 15:45
1,2,4-Trichlorobenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
1,2,4-Trimethylbenzene	0.0318 U	0.0636	0.0191	mg/kg	1		03/18/21 15:45
1,2-Dibromo-3-chloropropane	0.0635 U	0.127	0.0394	mg/kg	1		03/18/21 15:45
1,2-Dibromoethane	0.000635 U	0.00127	0.000509	mg/kg	1		03/18/21 15:45
1,2-Dichlorobenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
1,2-Dichloroethane	0.00127 U	0.00254	0.000890	mg/kg	1		03/18/21 15:45
1,2-Dichloropropane	0.00635 U	0.0127	0.00394	mg/kg	1		03/18/21 15:45
1,3,5-Trimethylbenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
1,3-Dichlorobenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
1,3-Dichloropropane	0.00635 U	0.0127	0.00394	mg/kg	1		03/18/21 15:45
1,4-Dichlorobenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
2,2-Dichloropropane	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
2-Butanone (MEK)	0.159 U	0.318	0.0992	mg/kg	1		03/18/21 15:45
2-Chlorotoluene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
2-Hexanone	0.0635 U	0.127	0.0394	mg/kg	1		03/18/21 15:45
4-Chlorotoluene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
4-Isopropyltoluene	0.0635 U	0.127	0.0318	mg/kg	1		03/18/21 15:45
4-Methyl-2-pentanone (MIBK)	0.159 U	0.318	0.0992	mg/kg	1		03/18/21 15:45
Acetone	0.159 U	0.318	0.0992	mg/kg	1		03/18/21 15:45
Benzene	0.00795 U	0.0159	0.00496	mg/kg	1		03/18/21 15:45
Bromobenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
Bromochloromethane	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
Bromodichloromethane	0.00127 U	0.00254	0.000789	mg/kg	1		03/18/21 15:45
Bromoform	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
Bromomethane	0.0127 U	0.0254	0.00789	mg/kg	1		03/18/21 15:45
Carbon disulfide	0.0635 U	0.127	0.0394	mg/kg	1		03/18/21 15:45
Carbon tetrachloride	0.00795 U	0.0159	0.00496	mg/kg	1		03/18/21 15:45
Chlorobenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45



**Results of SBMW1-2**

Client Sample ID: **SBMW1-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172002  
 Lab Project ID: 1211172

Collection Date: 03/11/21 15:10  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):84.7  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.127 U	0.254	0.0789	mg/kg	1		03/18/21 15:45
Chloroform	0.00255 U	0.00509	0.00127	mg/kg	1		03/18/21 15:45
Chloromethane	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
cis-1,2-Dichloroethene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
cis-1,3-Dichloropropene	0.00795 U	0.0159	0.00496	mg/kg	1		03/18/21 15:45
Dibromochloromethane	0.00318 U	0.00636	0.00191	mg/kg	1		03/18/21 15:45
Dibromomethane	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
Dichlorodifluoromethane	0.0318 U	0.0636	0.0191	mg/kg	1		03/18/21 15:45
Ethylbenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
Freon-113	0.0635 U	0.127	0.0394	mg/kg	1		03/18/21 15:45
Hexachlorobutadiene	0.0127 U	0.0254	0.00789	mg/kg	1		03/18/21 15:45
Isopropylbenzene (Cumene)	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
Methylene chloride	0.0635 U	0.127	0.0394	mg/kg	1		03/18/21 15:45
Methyl-t-butyl ether	0.0635 U	0.127	0.0394	mg/kg	1		03/18/21 15:45
Naphthalene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
n-Butylbenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
n-Propylbenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
o-Xylene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
P & M -Xylene	0.0318 U	0.0636	0.0191	mg/kg	1		03/18/21 15:45
sec-Butylbenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
Styrene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
tert-Butylbenzene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
Tetrachloroethene	0.00795 U	0.0159	0.00496	mg/kg	1		03/18/21 15:45
Toluene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
trans-1,2-Dichloroethene	0.0159 U	0.0318	0.00992	mg/kg	1		03/18/21 15:45
trans-1,3-Dichloropropene	0.00795 U	0.0159	0.00496	mg/kg	1		03/18/21 15:45
Trichloroethene	0.00318 U	0.00636	0.00191	mg/kg	1		03/18/21 15:45
Trichlorofluoromethane	0.0318 U	0.0636	0.0191	mg/kg	1		03/18/21 15:45
Vinyl acetate	0.0635 U	0.127	0.0394	mg/kg	1		03/18/21 15:45
Vinyl chloride	0.000510 U	0.00102	0.000318	mg/kg	1		03/18/21 15:45
Xylenes (total)	0.0477 U	0.0954	0.0290	mg/kg	1		03/18/21 15:45
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/18/21 15:45
4-Bromofluorobenzene (surr)	94.1	55-151		%	1		03/18/21 15:45
Toluene-d8 (surr)	93.7	85-116		%	1		03/18/21 15:45

## Results of **SBMW1-2**

Client Sample ID: **SBMW1-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172002  
Lab Project ID: 1211172

Collection Date: 03/11/21 15:10  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):84.7  
Location:

## Results by **Volatile GC/MS**

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 15:45  
Container ID: 1211172002-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 15:10  
Prep Initial Wt./Vol.: 64.756 g  
Prep Extract Vol: 34.8923 mL





Results of **SBMW2-1**

Client Sample ID: **SBMW2-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172003  
Lab Project ID: 1211172

Collection Date: 03/12/21 12:37  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):89.1  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	178	22.4	6.93	mg/kg	1		03/23/21 15:23

**Surrogates**

5a Androstane (surr)	89.4	50-150		%	1		03/23/21 15:23
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 15:23  
Container ID: 1211172003-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.125 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	2030	112	48.1	mg/kg	1		03/23/21 15:23

**Surrogates**

n-Triacontane-d62 (surr)	110	50-150		%	1		03/23/21 15:23
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 15:23  
Container ID: 1211172003-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.125 g  
Prep Extract Vol: 5 mL

## Results of SBMW2-1

Client Sample ID: **SBMW2-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172003  
 Lab Project ID: 1211172

Collection Date: 03/12/21 12:37  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):89.1  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.39 U	2.77	0.832	mg/kg	1		03/19/21 17:18
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	81.1	50-150		%	1		03/19/21 17:18

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 03/19/21 17:18  
 Container ID: 1211172003-A

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/12/21 12:37  
 Prep Initial Wt./Vol.: 64.956 g  
 Prep Extract Vol: 32.0883 mL



Results of **SBMW2-1**

Client Sample ID: **SBMW2-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172003  
Lab Project ID: 1211172

Collection Date: 03/12/21 12:37  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):89.1  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0111 U	0.0222	0.00688	mg/kg	1		03/18/21 16:00
1,1,1-Trichloroethane	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
1,1,2,2-Tetrachloroethane	0.00111 U	0.00222	0.000688	mg/kg	1		03/18/21 16:00
1,1,2-Trichloroethane	0.000443 U	0.000887	0.000277	mg/kg	1		03/18/21 16:00
1,1-Dichloroethane	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
1,1-Dichloroethene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
1,1-Dichloropropene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
1,2,3-Trichlorobenzene	0.0278 U	0.0555	0.0166	mg/kg	1		03/18/21 16:00
1,2,3-Trichloropropane	0.00111 U	0.00222	0.000688	mg/kg	1		03/18/21 16:00
1,2,4-Trichlorobenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
1,2,4-Trimethylbenzene	0.0278 U	0.0555	0.0166	mg/kg	1		03/18/21 16:00
1,2-Dibromo-3-chloropropane	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 16:00
1,2-Dibromoethane	0.000555 U	0.00111	0.000444	mg/kg	1		03/18/21 16:00
1,2-Dichlorobenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
1,2-Dichloroethane	0.00111 U	0.00222	0.000776	mg/kg	1		03/18/21 16:00
1,2-Dichloropropane	0.00555 U	0.0111	0.00344	mg/kg	1		03/18/21 16:00
1,3,5-Trimethylbenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
1,3-Dichlorobenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
1,3-Dichloropropane	0.00555 U	0.0111	0.00344	mg/kg	1		03/18/21 16:00
1,4-Dichlorobenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
2,2-Dichloropropane	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
2-Butanone (MEK)	0.139 U	0.277	0.0865	mg/kg	1		03/18/21 16:00
2-Chlorotoluene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
2-Hexanone	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 16:00
4-Chlorotoluene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
4-Isopropyltoluene	0.0555 U	0.111	0.0277	mg/kg	1		03/18/21 16:00
4-Methyl-2-pentanone (MIBK)	0.139 U	0.277	0.0865	mg/kg	1		03/18/21 16:00
Acetone	0.139 U	0.277	0.0865	mg/kg	1		03/18/21 16:00
Benzene	0.00695 U	0.0139	0.00433	mg/kg	1		03/18/21 16:00
Bromobenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
Bromochloromethane	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
Bromodichloromethane	0.00111 U	0.00222	0.000688	mg/kg	1		03/18/21 16:00
Bromoform	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
Bromomethane	0.0111 U	0.0222	0.00688	mg/kg	1		03/18/21 16:00
Carbon disulfide	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 16:00
Carbon tetrachloride	0.00695 U	0.0139	0.00433	mg/kg	1		03/18/21 16:00
Chlorobenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00



Results of **SBMW2-1**

Client Sample ID: **SBMW2-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172003  
Lab Project ID: 1211172

Collection Date: 03/12/21 12:37  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):89.1  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.111 U	0.222	0.0688	mg/kg	1		03/18/21 16:00
Chloroform	0.00222 U	0.00444	0.00111	mg/kg	1		03/18/21 16:00
Chloromethane	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
cis-1,2-Dichloroethene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
cis-1,3-Dichloropropene	0.00695 U	0.0139	0.00433	mg/kg	1		03/18/21 16:00
Dibromochloromethane	0.00278 U	0.00555	0.00166	mg/kg	1		03/18/21 16:00
Dibromomethane	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
Dichlorodifluoromethane	0.0278 U	0.0555	0.0166	mg/kg	1		03/18/21 16:00
Ethylbenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
Freon-113	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 16:00
Hexachlorobutadiene	0.0111 U	0.0222	0.00688	mg/kg	1		03/18/21 16:00
Isopropylbenzene (Cumene)	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
Methylene chloride	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 16:00
Methyl-t-butyl ether	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 16:00
Naphthalene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
n-Butylbenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
n-Propylbenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
o-Xylene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
P & M -Xylene	0.0278 U	0.0555	0.0166	mg/kg	1		03/18/21 16:00
sec-Butylbenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
Styrene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
tert-Butylbenzene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
Tetrachloroethene	0.00695 U	0.0139	0.00433	mg/kg	1		03/18/21 16:00
Toluene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
trans-1,2-Dichloroethene	0.0138 U	0.0277	0.00865	mg/kg	1		03/18/21 16:00
trans-1,3-Dichloropropene	0.00695 U	0.0139	0.00433	mg/kg	1		03/18/21 16:00
Trichloroethene	0.00278 U	0.00555	0.00166	mg/kg	1		03/18/21 16:00
Trichlorofluoromethane	0.0278 U	0.0555	0.0166	mg/kg	1		03/18/21 16:00
Vinyl acetate	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 16:00
Vinyl chloride	0.000443 U	0.000887	0.000277	mg/kg	1		03/18/21 16:00
Xylenes (total)	0.0416 U	0.0832	0.0253	mg/kg	1		03/18/21 16:00
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/18/21 16:00
4-Bromofluorobenzene (surr)	88.4	55-151		%	1		03/18/21 16:00
Toluene-d8 (surr)	94.7	85-116		%	1		03/18/21 16:00

## Results of SBMW2-1

Client Sample ID: **SBMW2-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172003  
Lab Project ID: 1211172

Collection Date: 03/12/21 12:37  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):89.1  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 16:00  
Container ID: 1211172003-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 12:37  
Prep Initial Wt./Vol.: 64.956 g  
Prep Extract Vol: 32.0883 mL



Results of **SBMW2-2**

Client Sample ID: **SBMW2-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172004  
Lab Project ID: 1211172

Collection Date: 03/12/21 13:22  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.9 U	21.8	6.77	mg/kg	1		03/23/21 13:14

**Surrogates**

5a Androstane (surr)	99	50-150		%	1		03/23/21 13:14
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:14  
Container ID: 1211172004-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.368 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	54.5 U	109	47.0	mg/kg	1		03/23/21 13:14

**Surrogates**

n-Triacontane-d62 (surr)	97.4	50-150		%	1		03/23/21 13:14
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:14  
Container ID: 1211172004-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.368 g  
Prep Extract Vol: 5 mL

## Results of SBMW2-2

Client Sample ID: **SBMW2-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172004  
 Lab Project ID: 1211172

Collection Date: 03/12/21 13:22  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):90.4  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.22 U	2.43	0.729	mg/kg	1		03/19/21 17:36
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	100	50-150		%	1		03/19/21 17:36

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 03/19/21 17:36  
 Container ID: 1211172004-A

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/12/21 13:22  
 Prep Initial Wt./Vol.: 72.708 g  
 Prep Extract Vol: 31.9509 mL



Results of **SBMW2-2**

Client Sample ID: **SBMW2-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172004  
Lab Project ID: 1211172

Collection Date: 03/12/21 13:22  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00970 U	0.0194	0.00603	mg/kg	1		03/18/21 16:16
1,1,1-Trichloroethane	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
1,1,2,2-Tetrachloroethane	0.000970 U	0.00194	0.000603	mg/kg	1		03/18/21 16:16
1,1,2-Trichloroethane	0.000389 U	0.000777	0.000243	mg/kg	1		03/18/21 16:16
1,1-Dichloroethane	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
1,1-Dichloroethene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
1,1-Dichloropropene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
1,2,3-Trichlorobenzene	0.0243 U	0.0486	0.0146	mg/kg	1		03/18/21 16:16
1,2,3-Trichloropropane	0.000970 U	0.00194	0.000603	mg/kg	1		03/18/21 16:16
1,2,4-Trichlorobenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
1,2,4-Trimethylbenzene	0.0243 U	0.0486	0.0146	mg/kg	1		03/18/21 16:16
1,2-Dibromo-3-chloropropane	0.0486 U	0.0972	0.0301	mg/kg	1		03/18/21 16:16
1,2-Dibromoethane	0.000486 U	0.000972	0.000389	mg/kg	1		03/18/21 16:16
1,2-Dichlorobenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
1,2-Dichloroethane	0.000970 U	0.00194	0.000680	mg/kg	1		03/18/21 16:16
1,2-Dichloropropane	0.00486 U	0.00972	0.00301	mg/kg	1		03/18/21 16:16
1,3,5-Trimethylbenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
1,3-Dichlorobenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
1,3-Dichloropropane	0.00486 U	0.00972	0.00301	mg/kg	1		03/18/21 16:16
1,4-Dichlorobenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
2,2-Dichloropropane	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
2-Butanone (MEK)	0.122 U	0.243	0.0758	mg/kg	1		03/18/21 16:16
2-Chlorotoluene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
2-Hexanone	0.0486 U	0.0972	0.0301	mg/kg	1		03/18/21 16:16
4-Chlorotoluene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
4-Isopropyltoluene	0.0486 U	0.0972	0.0243	mg/kg	1		03/18/21 16:16
4-Methyl-2-pentanone (MIBK)	0.122 U	0.243	0.0758	mg/kg	1		03/18/21 16:16
Acetone	0.122 U	0.243	0.0758	mg/kg	1		03/18/21 16:16
Benzene	0.00534 J	0.0121	0.00379	mg/kg	1		03/18/21 16:16
Bromobenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
Bromochloromethane	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
Bromodichloromethane	0.000970 U	0.00194	0.000603	mg/kg	1		03/18/21 16:16
Bromoform	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
Bromomethane	0.00970 U	0.0194	0.00603	mg/kg	1		03/18/21 16:16
Carbon disulfide	0.0486 U	0.0972	0.0301	mg/kg	1		03/18/21 16:16
Carbon tetrachloride	0.00605 U	0.0121	0.00379	mg/kg	1		03/18/21 16:16
Chlorobenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16





Results of **SBMW2-2**

Client Sample ID: **SBMW2-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172004  
Lab Project ID: 1211172

Collection Date: 03/12/21 13:22  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0970 U	0.194	0.0603	mg/kg	1		03/18/21 16:16
Chloroform	0.00194 U	0.00389	0.000972	mg/kg	1		03/18/21 16:16
Chloromethane	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
cis-1,2-Dichloroethene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
cis-1,3-Dichloropropene	0.00605 U	0.0121	0.00379	mg/kg	1		03/18/21 16:16
Dibromochloromethane	0.00243 U	0.00486	0.00146	mg/kg	1		03/18/21 16:16
Dibromomethane	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
Dichlorodifluoromethane	0.0243 U	0.0486	0.0146	mg/kg	1		03/18/21 16:16
Ethylbenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
Freon-113	0.0486 U	0.0972	0.0301	mg/kg	1		03/18/21 16:16
Hexachlorobutadiene	0.00970 U	0.0194	0.00603	mg/kg	1		03/18/21 16:16
Isopropylbenzene (Cumene)	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
Methylene chloride	0.0486 U	0.0972	0.0301	mg/kg	1		03/18/21 16:16
Methyl-t-butyl ether	0.0486 U	0.0972	0.0301	mg/kg	1		03/18/21 16:16
Naphthalene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
n-Butylbenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
n-Propylbenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
o-Xylene	0.0148 J	0.0243	0.00758	mg/kg	1		03/18/21 16:16
P & M -Xylene	0.0292 J	0.0486	0.0146	mg/kg	1		03/18/21 16:16
sec-Butylbenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
Styrene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
tert-Butylbenzene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
Tetrachloroethene	0.00605 U	0.0121	0.00379	mg/kg	1		03/18/21 16:16
Toluene	0.0292	0.0243	0.00758	mg/kg	1		03/18/21 16:16
trans-1,2-Dichloroethene	0.0121 U	0.0243	0.00758	mg/kg	1		03/18/21 16:16
trans-1,3-Dichloropropene	0.00605 U	0.0121	0.00379	mg/kg	1		03/18/21 16:16
Trichloroethene	0.00243 U	0.00486	0.00146	mg/kg	1		03/18/21 16:16
Trichlorofluoromethane	0.0243 U	0.0486	0.0146	mg/kg	1		03/18/21 16:16
Vinyl acetate	0.0486 U	0.0972	0.0301	mg/kg	1		03/18/21 16:16
Vinyl chloride	0.000389 U	0.000777	0.000243	mg/kg	1		03/18/21 16:16
Xylenes (total)	0.0440 J	0.0729	0.0222	mg/kg	1		03/18/21 16:16
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/18/21 16:16
4-Bromofluorobenzene (surr)	96.7	55-151		%	1		03/18/21 16:16
Toluene-d8 (surr)	94.5	85-116		%	1		03/18/21 16:16



Results of **SBMW2-2**

Client Sample ID: **SBMW2-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172004  
Lab Project ID: 1211172

Collection Date: 03/12/21 13:22  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.4  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 16:16  
Container ID: 1211172004-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 13:22  
Prep Initial Wt./Vol.: 72.708 g  
Prep Extract Vol: 31.9509 mL



Results of **SBMW3-1**

Client Sample ID: **SBMW3-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172005  
Lab Project ID: 1211172

Collection Date: 03/11/21 10:02  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.9  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	59.9	23.8	7.37	mg/kg	1		03/23/21 14:43

**Surrogates**

5a Androstane (surr)	81.3	50-150		%	1		03/23/21 14:43
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:43  
Container ID: 1211172005-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.083 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	673	119	51.1	mg/kg	1		03/23/21 14:43

**Surrogates**

n-Triacontane-d62 (surr)	81.6	50-150		%	1		03/23/21 14:43
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:43  
Container ID: 1211172005-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.083 g  
Prep Extract Vol: 5 mL



Results of **SBMW3-1**

Client Sample ID: **SBMW3-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172005  
Lab Project ID: 1211172

Collection Date: 03/11/21 10:02  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.9  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.68 U	3.36	1.01	mg/kg	1		03/19/21 17:53
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	81.1	50-150		%	1		03/19/21 17:53

**Batch Information**

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 17:53  
Container ID: 1211172005-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 10:02  
Prep Initial Wt./Vol.: 61.907 g  
Prep Extract Vol: 34.9548 mL



Results of **SBMW3-1**

Client Sample ID: **SBMW3-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172005  
Lab Project ID: 1211172

Collection Date: 03/11/21 10:02  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.9  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0135 U	0.0269	0.00834	mg/kg	1		03/18/21 16:31
1,1,1-Trichloroethane	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
1,1,2,2-Tetrachloroethane	0.00135 U	0.00269	0.000834	mg/kg	1		03/18/21 16:31
1,1,2-Trichloroethane	0.000540 U	0.00108	0.000336	mg/kg	1		03/18/21 16:31
1,1-Dichloroethane	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
1,1-Dichloroethene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
1,1-Dichloropropene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
1,2,3-Trichlorobenzene	0.0336 U	0.0673	0.0202	mg/kg	1		03/18/21 16:31
1,2,3-Trichloropropane	0.00135 U	0.00269	0.000834	mg/kg	1		03/18/21 16:31
1,2,4-Trichlorobenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
1,2,4-Trimethylbenzene	0.0336 U	0.0673	0.0202	mg/kg	1		03/18/21 16:31
1,2-Dibromo-3-chloropropane	0.0675 U	0.135	0.0417	mg/kg	1		03/18/21 16:31
1,2-Dibromoethane	0.000675 U	0.00135	0.000538	mg/kg	1		03/18/21 16:31
1,2-Dichlorobenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
1,2-Dichloroethane	0.00135 U	0.00269	0.000942	mg/kg	1		03/18/21 16:31
1,2-Dichloropropane	0.00675 U	0.0135	0.00417	mg/kg	1		03/18/21 16:31
1,3,5-Trimethylbenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
1,3-Dichlorobenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
1,3-Dichloropropane	0.00675 U	0.0135	0.00417	mg/kg	1		03/18/21 16:31
1,4-Dichlorobenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
2,2-Dichloropropane	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
2-Butanone (MEK)	0.168 U	0.336	0.105	mg/kg	1		03/18/21 16:31
2-Chlorotoluene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
2-Hexanone	0.0675 U	0.135	0.0417	mg/kg	1		03/18/21 16:31
4-Chlorotoluene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
4-Isopropyltoluene	0.0675 U	0.135	0.0336	mg/kg	1		03/18/21 16:31
4-Methyl-2-pentanone (MIBK)	0.168 U	0.336	0.105	mg/kg	1		03/18/21 16:31
Acetone	0.168 U	0.336	0.105	mg/kg	1		03/18/21 16:31
Benzene	0.00840 U	0.0168	0.00525	mg/kg	1		03/18/21 16:31
Bromobenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
Bromochloromethane	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
Bromodichloromethane	0.00135 U	0.00269	0.000834	mg/kg	1		03/18/21 16:31
Bromoform	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
Bromomethane	0.0135 U	0.0269	0.00834	mg/kg	1		03/18/21 16:31
Carbon disulfide	0.0675 U	0.135	0.0417	mg/kg	1		03/18/21 16:31
Carbon tetrachloride	0.00840 U	0.0168	0.00525	mg/kg	1		03/18/21 16:31
Chlorobenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31



Results of **SBMW3-1**

Client Sample ID: **SBMW3-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172005  
Lab Project ID: 1211172

Collection Date: 03/11/21 10:02  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.9  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.135 U	0.269	0.0834	mg/kg	1		03/18/21 16:31
Chloroform	0.00269 U	0.00538	0.00135	mg/kg	1		03/18/21 16:31
Chloromethane	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
cis-1,2-Dichloroethene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
cis-1,3-Dichloropropene	0.00840 U	0.0168	0.00525	mg/kg	1		03/18/21 16:31
Dibromochloromethane	0.00336 U	0.00673	0.00202	mg/kg	1		03/18/21 16:31
Dibromomethane	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
Dichlorodifluoromethane	0.0336 U	0.0673	0.0202	mg/kg	1		03/18/21 16:31
Ethylbenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
Freon-113	0.0675 U	0.135	0.0417	mg/kg	1		03/18/21 16:31
Hexachlorobutadiene	0.0135 U	0.0269	0.00834	mg/kg	1		03/18/21 16:31
Isopropylbenzene (Cumene)	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
Methylene chloride	0.0675 U	0.135	0.0417	mg/kg	1		03/18/21 16:31
Methyl-t-butyl ether	0.0675 U	0.135	0.0417	mg/kg	1		03/18/21 16:31
Naphthalene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
n-Butylbenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
n-Propylbenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
o-Xylene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
P & M -Xylene	0.0336 U	0.0673	0.0202	mg/kg	1		03/18/21 16:31
sec-Butylbenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
Styrene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
tert-Butylbenzene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
Tetrachloroethene	0.00840 U	0.0168	0.00525	mg/kg	1		03/18/21 16:31
Toluene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
trans-1,2-Dichloroethene	0.0168 U	0.0336	0.0105	mg/kg	1		03/18/21 16:31
trans-1,3-Dichloropropene	0.00840 U	0.0168	0.00525	mg/kg	1		03/18/21 16:31
Trichloroethene	0.00336 U	0.00673	0.00202	mg/kg	1		03/18/21 16:31
Trichlorofluoromethane	0.0336 U	0.0673	0.0202	mg/kg	1		03/18/21 16:31
Vinyl acetate	0.0675 U	0.135	0.0417	mg/kg	1		03/18/21 16:31
Vinyl chloride	0.000540 U	0.00108	0.000336	mg/kg	1		03/18/21 16:31
Xylenes (total)	0.0505 U	0.101	0.0307	mg/kg	1		03/18/21 16:31
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/18/21 16:31
4-Bromofluorobenzene (surr)	78.2	55-151		%	1		03/18/21 16:31
Toluene-d8 (surr)	94.4	85-116		%	1		03/18/21 16:31

## Results of **SBMW3-1**

Client Sample ID: **SBMW3-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172005  
Lab Project ID: 1211172

Collection Date: 03/11/21 10:02  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.9  
Location:

## Results by **Volatile GC/MS**

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 16:31  
Container ID: 1211172005-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 10:02  
Prep Initial Wt./Vol.: 61.907 g  
Prep Extract Vol: 34.9548 mL



Results of **SBMW3-101**

Client Sample ID: **SBMW3-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172006  
Lab Project ID: 1211172

Collection Date: 03/11/21 09:52  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	49.1	23.3	7.22	mg/kg	1		03/23/21 14:53

**Surrogates**

5a Androstane (surr)	83.6	50-150		%	1		03/23/21 14:53
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:53  
Container ID: 1211172006-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.165 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	535	116	50.1	mg/kg	1		03/23/21 14:53

**Surrogates**

n-Triacontane-d62 (surr)	89.4	50-150		%	1		03/23/21 14:53
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 14:53  
Container ID: 1211172006-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.165 g  
Prep Extract Vol: 5 mL



## Results of SBMW3-101

Client Sample ID: **SBMW3-101**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172006  
 Lab Project ID: 1211172

Collection Date: 03/11/21 09:52  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):85.4  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.99 U	3.97	1.19	mg/kg	1		03/19/21 18:11
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	98.7	50-150		%	1		03/19/21 18:11

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 03/19/21 18:11  
 Container ID: 1211172006-A

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/11/21 09:52  
 Prep Initial Wt./Vol.: 46.952 g  
 Prep Extract Vol: 31.8528 mL



Results of **SBMW3-101**

Client Sample ID: **SBMW3-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172006  
Lab Project ID: 1211172

Collection Date: 03/11/21 09:52  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0159 U	0.0318	0.00985	mg/kg	1		03/18/21 16:47
1,1,1-Trichloroethane	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
1,1,2,2-Tetrachloroethane	0.00159 U	0.00318	0.000985	mg/kg	1		03/18/21 16:47
1,1,2-Trichloroethane	0.000635 U	0.00127	0.000397	mg/kg	1		03/18/21 16:47
1,1-Dichloroethane	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
1,1-Dichloroethene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
1,1-Dichloropropene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
1,2,3-Trichlorobenzene	0.0397 U	0.0794	0.0238	mg/kg	1		03/18/21 16:47
1,2,3-Trichloropropane	0.00159 U	0.00318	0.000985	mg/kg	1		03/18/21 16:47
1,2,4-Trichlorobenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
1,2,4-Trimethylbenzene	0.0397 U	0.0794	0.0238	mg/kg	1		03/18/21 16:47
1,2-Dibromo-3-chloropropane	0.0795 U	0.159	0.0492	mg/kg	1		03/18/21 16:47
1,2-Dibromoethane	0.000795 U	0.00159	0.000635	mg/kg	1		03/18/21 16:47
1,2-Dichlorobenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
1,2-Dichloroethane	0.00159 U	0.00318	0.00111	mg/kg	1		03/18/21 16:47
1,2-Dichloropropane	0.00795 U	0.0159	0.00492	mg/kg	1		03/18/21 16:47
1,3,5-Trimethylbenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
1,3-Dichlorobenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
1,3-Dichloropropane	0.00795 U	0.0159	0.00492	mg/kg	1		03/18/21 16:47
1,4-Dichlorobenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
2,2-Dichloropropane	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
2-Butanone (MEK)	0.199 U	0.397	0.124	mg/kg	1		03/18/21 16:47
2-Chlorotoluene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
2-Hexanone	0.0795 U	0.159	0.0492	mg/kg	1		03/18/21 16:47
4-Chlorotoluene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
4-Isopropyltoluene	0.0795 U	0.159	0.0397	mg/kg	1		03/18/21 16:47
4-Methyl-2-pentanone (MIBK)	0.199 U	0.397	0.124	mg/kg	1		03/18/21 16:47
Acetone	0.199 U	0.397	0.124	mg/kg	1		03/18/21 16:47
Benzene	0.00995 U	0.0199	0.00620	mg/kg	1		03/18/21 16:47
Bromobenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
Bromochloromethane	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
Bromodichloromethane	0.00159 U	0.00318	0.000985	mg/kg	1		03/18/21 16:47
Bromoform	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
Bromomethane	0.0159 U	0.0318	0.00985	mg/kg	1		03/18/21 16:47
Carbon disulfide	0.0795 U	0.159	0.0492	mg/kg	1		03/18/21 16:47
Carbon tetrachloride	0.00995 U	0.0199	0.00620	mg/kg	1		03/18/21 16:47
Chlorobenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47



Results of **SBMW3-101**

Client Sample ID: **SBMW3-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172006  
Lab Project ID: 1211172

Collection Date: 03/11/21 09:52  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.159 U	0.318	0.0985	mg/kg	1		03/18/21 16:47
Chloroform	0.00317 U	0.00635	0.00159	mg/kg	1		03/18/21 16:47
Chloromethane	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
cis-1,2-Dichloroethene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
cis-1,3-Dichloropropene	0.00995 U	0.0199	0.00620	mg/kg	1		03/18/21 16:47
Dibromochloromethane	0.00397 U	0.00794	0.00238	mg/kg	1		03/18/21 16:47
Dibromomethane	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
Dichlorodifluoromethane	0.0397 U	0.0794	0.0238	mg/kg	1		03/18/21 16:47
Ethylbenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
Freon-113	0.0795 U	0.159	0.0492	mg/kg	1		03/18/21 16:47
Hexachlorobutadiene	0.0159 U	0.0318	0.00985	mg/kg	1		03/18/21 16:47
Isopropylbenzene (Cumene)	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
Methylene chloride	0.0795 U	0.159	0.0492	mg/kg	1		03/18/21 16:47
Methyl-t-butyl ether	0.0795 U	0.159	0.0492	mg/kg	1		03/18/21 16:47
Naphthalene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
n-Butylbenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
n-Propylbenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
o-Xylene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
P & M -Xylene	0.0397 U	0.0794	0.0238	mg/kg	1		03/18/21 16:47
sec-Butylbenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
Styrene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
tert-Butylbenzene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
Tetrachloroethene	0.00995 U	0.0199	0.00620	mg/kg	1		03/18/21 16:47
Toluene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
trans-1,2-Dichloroethene	0.0199 U	0.0397	0.0124	mg/kg	1		03/18/21 16:47
trans-1,3-Dichloropropene	0.00995 U	0.0199	0.00620	mg/kg	1		03/18/21 16:47
Trichloroethene	0.00397 U	0.00794	0.00238	mg/kg	1		03/18/21 16:47
Trichlorofluoromethane	0.0397 U	0.0794	0.0238	mg/kg	1		03/18/21 16:47
Vinyl acetate	0.0795 U	0.159	0.0492	mg/kg	1		03/18/21 16:47
Vinyl chloride	0.000635 U	0.00127	0.000397	mg/kg	1		03/18/21 16:47
Xylenes (total)	0.0595 U	0.119	0.0362	mg/kg	1		03/18/21 16:47
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/18/21 16:47
4-Bromofluorobenzene (surr)	87.3	55-151		%	1		03/18/21 16:47
Toluene-d8 (surr)	94.2	85-116		%	1		03/18/21 16:47

## Results of **SBMW3-101**

Client Sample ID: **SBMW3-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172006  
Lab Project ID: 1211172

Collection Date: 03/11/21 09:52  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.4  
Location:

## Results by **Volatile GC/MS**

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 16:47  
Container ID: 1211172006-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 09:52  
Prep Initial Wt./Vol.: 46.952 g  
Prep Extract Vol: 31.8528 mL



Results of **SBMW3-2**

Client Sample ID: **SBMW3-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172007  
Lab Project ID: 1211172

Collection Date: 03/11/21 11:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.6  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.4 U	20.8	6.46	mg/kg	1		03/23/21 13:24

**Surrogates**

5a Androstane (surr)	101	50-150		%	1		03/23/21 13:24
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:24  
Container ID: 1211172007-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.113 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	52.0 U	104	44.8	mg/kg	1		03/23/21 13:24

**Surrogates**

n-Triacontane-d62 (surr)	100	50-150		%	1		03/23/21 13:24
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:24  
Container ID: 1211172007-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.113 g  
Prep Extract Vol: 5 mL



Results of **SBMW3-2**

Client Sample ID: **SBMW3-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172007  
Lab Project ID: 1211172

Collection Date: 03/11/21 11:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.6  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.40 U	2.79	0.836	mg/kg	1		03/19/21 18:29
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	94.4	50-150		%	1		03/19/21 18:29

**Batch Information**

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 18:29  
Container ID: 1211172007-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 11:05  
Prep Initial Wt./Vol.: 51.077 g  
Prep Extract Vol: 27.2274 mL



Results of **SBMW3-2**

Client Sample ID: **SBMW3-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172007  
Lab Project ID: 1211172

Collection Date: 03/11/21 11:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.6  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0112 U	0.0223	0.00691	mg/kg	1		03/18/21 17:02
1,1,1-Trichloroethane	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
1,1,2,2-Tetrachloroethane	0.00112 U	0.00223	0.000691	mg/kg	1		03/18/21 17:02
1,1,2-Trichloroethane	0.000446 U	0.000892	0.000279	mg/kg	1		03/18/21 17:02
1,1-Dichloroethane	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
1,1-Dichloroethene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
1,1-Dichloropropene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
1,2,3-Trichlorobenzene	0.0279 U	0.0557	0.0167	mg/kg	1		03/18/21 17:02
1,2,3-Trichloropropane	0.00112 U	0.00223	0.000691	mg/kg	1		03/18/21 17:02
1,2,4-Trichlorobenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
1,2,4-Trimethylbenzene	0.0279 U	0.0557	0.0167	mg/kg	1		03/18/21 17:02
1,2-Dibromo-3-chloropropane	0.0555 U	0.111	0.0346	mg/kg	1		03/18/21 17:02
1,2-Dibromoethane	0.000555 U	0.00111	0.000446	mg/kg	1		03/18/21 17:02
1,2-Dichlorobenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
1,2-Dichloroethane	0.00112 U	0.00223	0.000780	mg/kg	1		03/18/21 17:02
1,2-Dichloropropane	0.00555 U	0.0111	0.00346	mg/kg	1		03/18/21 17:02
1,3,5-Trimethylbenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
1,3-Dichlorobenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
1,3-Dichloropropane	0.00555 U	0.0111	0.00346	mg/kg	1		03/18/21 17:02
1,4-Dichlorobenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
2,2-Dichloropropane	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
2-Butanone (MEK)	0.140 U	0.279	0.0870	mg/kg	1		03/18/21 17:02
2-Chlorotoluene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
2-Hexanone	0.0555 U	0.111	0.0346	mg/kg	1		03/18/21 17:02
4-Chlorotoluene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
4-Isopropyltoluene	0.0555 U	0.111	0.0279	mg/kg	1		03/18/21 17:02
4-Methyl-2-pentanone (MIBK)	0.140 U	0.279	0.0870	mg/kg	1		03/18/21 17:02
Acetone	0.140 U	0.279	0.0870	mg/kg	1		03/18/21 17:02
Benzene	0.00695 U	0.0139	0.00435	mg/kg	1		03/18/21 17:02
Bromobenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
Bromochloromethane	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
Bromodichloromethane	0.00112 U	0.00223	0.000691	mg/kg	1		03/18/21 17:02
Bromoform	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
Bromomethane	0.0112 U	0.0223	0.00691	mg/kg	1		03/18/21 17:02
Carbon disulfide	0.0555 U	0.111	0.0346	mg/kg	1		03/18/21 17:02
Carbon tetrachloride	0.00695 U	0.0139	0.00435	mg/kg	1		03/18/21 17:02
Chlorobenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02



Results of **SBMW3-2**

Client Sample ID: **SBMW3-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172007  
Lab Project ID: 1211172

Collection Date: 03/11/21 11:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.6  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.112 U	0.223	0.0691	mg/kg	1		03/18/21 17:02
Chloroform	0.00223 U	0.00446	0.00111	mg/kg	1		03/18/21 17:02
Chloromethane	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
cis-1,2-Dichloroethene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
cis-1,3-Dichloropropene	0.00695 U	0.0139	0.00435	mg/kg	1		03/18/21 17:02
Dibromochloromethane	0.00279 U	0.00557	0.00167	mg/kg	1		03/18/21 17:02
Dibromomethane	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
Dichlorodifluoromethane	0.0279 U	0.0557	0.0167	mg/kg	1		03/18/21 17:02
Ethylbenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
Freon-113	0.0555 U	0.111	0.0346	mg/kg	1		03/18/21 17:02
Hexachlorobutadiene	0.0112 U	0.0223	0.00691	mg/kg	1		03/18/21 17:02
Isopropylbenzene (Cumene)	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
Methylene chloride	0.0555 U	0.111	0.0346	mg/kg	1		03/18/21 17:02
Methyl-t-butyl ether	0.0555 U	0.111	0.0346	mg/kg	1		03/18/21 17:02
Naphthalene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
n-Butylbenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
n-Propylbenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
o-Xylene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
P & M -Xylene	0.0279 U	0.0557	0.0167	mg/kg	1		03/18/21 17:02
sec-Butylbenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
Styrene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
tert-Butylbenzene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
Tetrachloroethene	0.00695 U	0.0139	0.00435	mg/kg	1		03/18/21 17:02
Toluene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
trans-1,2-Dichloroethene	0.0140 U	0.0279	0.00870	mg/kg	1		03/18/21 17:02
trans-1,3-Dichloropropene	0.00695 U	0.0139	0.00435	mg/kg	1		03/18/21 17:02
Trichloroethene	0.00279 U	0.00557	0.00167	mg/kg	1		03/18/21 17:02
Trichlorofluoromethane	0.0279 U	0.0557	0.0167	mg/kg	1		03/18/21 17:02
Vinyl acetate	0.0555 U	0.111	0.0346	mg/kg	1		03/18/21 17:02
Vinyl chloride	0.000446 U	0.000892	0.000279	mg/kg	1		03/18/21 17:02
Xylenes (total)	0.0418 U	0.0836	0.0254	mg/kg	1		03/18/21 17:02
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/18/21 17:02
4-Bromofluorobenzene (surr)	91.5	55-151		%	1		03/18/21 17:02
Toluene-d8 (surr)	93	85-116		%	1		03/18/21 17:02



## Results of **SBMW3-2**

Client Sample ID: **SBMW3-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172007  
Lab Project ID: 1211172

Collection Date: 03/11/21 11:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.6  
Location:

## Results by **Volatile GC/MS**

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 17:02  
Container ID: 1211172007-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 11:05  
Prep Initial Wt./Vol.: 51.077 g  
Prep Extract Vol: 27.2274 mL



Results of **SBMW4-1**

Client Sample ID: **SBMW4-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172008  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):86.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	29.9	23.1	7.16	mg/kg	1		03/23/21 15:03

**Surrogates**

5a Androstane (surr)	97.8	50-150		%	1		03/23/21 15:03
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 15:03  
Container ID: 1211172008-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.087 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	248	115	49.6	mg/kg	1		03/23/21 15:03

**Surrogates**

n-Triacontane-d62 (surr)	94.4	50-150		%	1		03/23/21 15:03
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 15:03  
Container ID: 1211172008-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.087 g  
Prep Extract Vol: 5 mL

## Results of SBMW4-1

Client Sample ID: **SBMW4-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172008  
 Lab Project ID: 1211172

Collection Date: 03/13/21 10:40  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):86.4  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.51 U	3.03	0.908	mg/kg	1		03/19/21 18:47
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	93	50-150		%	1		03/19/21 18:47

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 03/19/21 18:47  
 Container ID: 1211172008-A

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/13/21 10:40  
 Prep Initial Wt./Vol.: 64.645 g  
 Prep Extract Vol: 33.8061 mL



Results of **SBMW4-1**

Client Sample ID: **SBMW4-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172008  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):86.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0121 U	0.0242	0.00751	mg/kg	1		03/18/21 17:17
1,1,1-Trichloroethane	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
1,1,2,2-Tetrachloroethane	0.00121 U	0.00242	0.000751	mg/kg	1		03/18/21 17:17
1,1,2-Trichloroethane	0.000485 U	0.000969	0.000303	mg/kg	1		03/18/21 17:17
1,1-Dichloroethane	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
1,1-Dichloroethene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
1,1-Dichloropropene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
1,2,3-Trichlorobenzene	0.0302 U	0.0605	0.0182	mg/kg	1		03/18/21 17:17
1,2,3-Trichloropropane	0.00121 U	0.00242	0.000751	mg/kg	1		03/18/21 17:17
1,2,4-Trichlorobenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
1,2,4-Trimethylbenzene	0.0302 U	0.0605	0.0182	mg/kg	1		03/18/21 17:17
1,2-Dibromo-3-chloropropane	0.0605 U	0.121	0.0375	mg/kg	1		03/18/21 17:17
1,2-Dibromoethane	0.000605 U	0.00121	0.000484	mg/kg	1		03/18/21 17:17
1,2-Dichlorobenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
1,2-Dichloroethane	0.00121 U	0.00242	0.000848	mg/kg	1		03/18/21 17:17
1,2-Dichloropropane	0.00605 U	0.0121	0.00375	mg/kg	1		03/18/21 17:17
1,3,5-Trimethylbenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
1,3-Dichlorobenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
1,3-Dichloropropane	0.00605 U	0.0121	0.00375	mg/kg	1		03/18/21 17:17
1,4-Dichlorobenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
2,2-Dichloropropane	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
2-Butanone (MEK)	0.152 U	0.303	0.0944	mg/kg	1		03/18/21 17:17
2-Chlorotoluene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
2-Hexanone	0.0605 U	0.121	0.0375	mg/kg	1		03/18/21 17:17
4-Chlorotoluene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
4-Isopropyltoluene	0.0605 U	0.121	0.0303	mg/kg	1		03/18/21 17:17
4-Methyl-2-pentanone (MIBK)	0.152 U	0.303	0.0944	mg/kg	1		03/18/21 17:17
Acetone	0.152 U	0.303	0.0944	mg/kg	1		03/18/21 17:17
Benzene	0.00755 U	0.0151	0.00472	mg/kg	1		03/18/21 17:17
Bromobenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
Bromochloromethane	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
Bromodichloromethane	0.00121 U	0.00242	0.000751	mg/kg	1		03/18/21 17:17
Bromoform	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
Bromomethane	0.0121 U	0.0242	0.00751	mg/kg	1		03/18/21 17:17
Carbon disulfide	0.0605 U	0.121	0.0375	mg/kg	1		03/18/21 17:17
Carbon tetrachloride	0.00755 U	0.0151	0.00472	mg/kg	1		03/18/21 17:17
Chlorobenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17



Results of **SBMW4-1**

Client Sample ID: **SBMW4-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172008  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):86.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.121 U	0.242	0.0751	mg/kg	1		03/18/21 17:17
Chloroform	0.00242 U	0.00484	0.00121	mg/kg	1		03/18/21 17:17
Chloromethane	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
cis-1,2-Dichloroethene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
cis-1,3-Dichloropropene	0.00755 U	0.0151	0.00472	mg/kg	1		03/18/21 17:17
Dibromochloromethane	0.00302 U	0.00605	0.00182	mg/kg	1		03/18/21 17:17
Dibromomethane	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
Dichlorodifluoromethane	0.0302 U	0.0605	0.0182	mg/kg	1		03/18/21 17:17
Ethylbenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
Freon-113	0.0605 U	0.121	0.0375	mg/kg	1		03/18/21 17:17
Hexachlorobutadiene	0.0121 U	0.0242	0.00751	mg/kg	1		03/18/21 17:17
Isopropylbenzene (Cumene)	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
Methylene chloride	0.0605 U	0.121	0.0375	mg/kg	1		03/18/21 17:17
Methyl-t-butyl ether	0.0605 U	0.121	0.0375	mg/kg	1		03/18/21 17:17
Naphthalene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
n-Butylbenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
n-Propylbenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
o-Xylene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
P & M -Xylene	0.0302 U	0.0605	0.0182	mg/kg	1		03/18/21 17:17
sec-Butylbenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
Styrene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
tert-Butylbenzene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
Tetrachloroethene	0.00755 U	0.0151	0.00472	mg/kg	1		03/18/21 17:17
Toluene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
trans-1,2-Dichloroethene	0.0152 U	0.0303	0.00944	mg/kg	1		03/18/21 17:17
trans-1,3-Dichloropropene	0.00755 U	0.0151	0.00472	mg/kg	1		03/18/21 17:17
Trichloroethene	0.00302 U	0.00605	0.00182	mg/kg	1		03/18/21 17:17
Trichlorofluoromethane	0.0302 U	0.0605	0.0182	mg/kg	1		03/18/21 17:17
Vinyl acetate	0.0605 U	0.121	0.0375	mg/kg	1		03/18/21 17:17
Vinyl chloride	0.000485 U	0.000969	0.000303	mg/kg	1		03/18/21 17:17
Xylenes (total)	0.0454 U	0.0908	0.0276	mg/kg	1		03/18/21 17:17
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/18/21 17:17
4-Bromofluorobenzene (surr)	87.6	55-151		%	1		03/18/21 17:17
Toluene-d8 (surr)	95.2	85-116		%	1		03/18/21 17:17



Results of **SBMW4-1**

Client Sample ID: **SBMW4-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172008  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:40  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):86.4  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 17:17  
Container ID: 1211172008-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 10:40  
Prep Initial Wt./Vol.: 64.645 g  
Prep Extract Vol: 33.8061 mL



Results of **SBMW4-2**

Client Sample ID: **SBMW4-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172009  
Lab Project ID: 1211172

Collection Date: 03/13/21 11:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.1  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.5 U	21.0	6.51	mg/kg	1		03/23/21 13:34

**Surrogates**

5a Androstane (surr)	102	50-150		%	1		03/23/21 13:34
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:34  
Container ID: 1211172009-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.015 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	52.5 U	105	45.2	mg/kg	1		03/23/21 13:34

**Surrogates**

n-Triacontane-d62 (surr)	100	50-150		%	1		03/23/21 13:34
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:34  
Container ID: 1211172009-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.015 g  
Prep Extract Vol: 5 mL



Results of **SBMW4-2**

Client Sample ID: **SBMW4-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172009  
Lab Project ID: 1211172

Collection Date: 03/13/21 11:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.1  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.24 U	2.47	0.742	mg/kg	1		03/19/21 19:05
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	100	50-150		%	1		03/19/21 19:05

**Batch Information**

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 19:05  
Container ID: 1211172009-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 11:25  
Prep Initial Wt./Vol.: 59.213 g  
Prep Extract Vol: 27.8736 mL





Results of **SBMW4-2**

Client Sample ID: **SBMW4-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172009  
Lab Project ID: 1211172

Collection Date: 03/13/21 11:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.1  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00990 U	0.0198	0.00613	mg/kg	1		03/18/21 17:33
1,1,1-Trichloroethane	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
1,1,2,2-Tetrachloroethane	0.000990 U	0.00198	0.000613	mg/kg	1		03/18/21 17:33
1,1,2-Trichloroethane	0.000396 U	0.000792	0.000247	mg/kg	1		03/18/21 17:33
1,1-Dichloroethane	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
1,1-Dichloroethene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
1,1-Dichloropropene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
1,2,3-Trichlorobenzene	0.0248 U	0.0495	0.0148	mg/kg	1		03/18/21 17:33
1,2,3-Trichloropropane	0.000990 U	0.00198	0.000613	mg/kg	1		03/18/21 17:33
1,2,4-Trichlorobenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
1,2,4-Trimethylbenzene	0.0248 U	0.0495	0.0148	mg/kg	1		03/18/21 17:33
1,2-Dibromo-3-chloropropane	0.0495 U	0.0989	0.0307	mg/kg	1		03/18/21 17:33
1,2-Dibromoethane	0.000495 U	0.000989	0.000396	mg/kg	1		03/18/21 17:33
1,2-Dichlorobenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
1,2-Dichloroethane	0.000990 U	0.00198	0.000693	mg/kg	1		03/18/21 17:33
1,2-Dichloropropane	0.00494 U	0.00989	0.00307	mg/kg	1		03/18/21 17:33
1,3,5-Trimethylbenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
1,3-Dichlorobenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
1,3-Dichloropropane	0.00494 U	0.00989	0.00307	mg/kg	1		03/18/21 17:33
1,4-Dichlorobenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
2,2-Dichloropropane	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
2-Butanone (MEK)	0.124 U	0.247	0.0772	mg/kg	1		03/18/21 17:33
2-Chlorotoluene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
2-Hexanone	0.0495 U	0.0989	0.0307	mg/kg	1		03/18/21 17:33
4-Chlorotoluene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
4-Isopropyltoluene	0.0495 U	0.0989	0.0247	mg/kg	1		03/18/21 17:33
4-Methyl-2-pentanone (MIBK)	0.124 U	0.247	0.0772	mg/kg	1		03/18/21 17:33
Acetone	0.124 U	0.247	0.0772	mg/kg	1		03/18/21 17:33
Benzene	0.00620 U	0.0124	0.00386	mg/kg	1		03/18/21 17:33
Bromobenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
Bromochloromethane	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
Bromodichloromethane	0.000990 U	0.00198	0.000613	mg/kg	1		03/18/21 17:33
Bromoform	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
Bromomethane	0.00990 U	0.0198	0.00613	mg/kg	1		03/18/21 17:33
Carbon disulfide	0.0495 U	0.0989	0.0307	mg/kg	1		03/18/21 17:33
Carbon tetrachloride	0.00620 U	0.0124	0.00386	mg/kg	1		03/18/21 17:33
Chlorobenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33



**Results of SBMW4-2**

Client Sample ID: **SBMW4-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172009  
 Lab Project ID: 1211172

Collection Date: 03/13/21 11:25  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):95.1  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0990 U	0.198	0.0613	mg/kg	1		03/18/21 17:33
Chloroform	0.00198 U	0.00396	0.000989	mg/kg	1		03/18/21 17:33
Chloromethane	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
cis-1,2-Dichloroethene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
cis-1,3-Dichloropropene	0.00620 U	0.0124	0.00386	mg/kg	1		03/18/21 17:33
Dibromochloromethane	0.00248 U	0.00495	0.00148	mg/kg	1		03/18/21 17:33
Dibromomethane	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
Dichlorodifluoromethane	0.0248 U	0.0495	0.0148	mg/kg	1		03/18/21 17:33
Ethylbenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
Freon-113	0.0495 U	0.0989	0.0307	mg/kg	1		03/18/21 17:33
Hexachlorobutadiene	0.00990 U	0.0198	0.00613	mg/kg	1		03/18/21 17:33
Isopropylbenzene (Cumene)	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
Methylene chloride	0.0495 U	0.0989	0.0307	mg/kg	1		03/18/21 17:33
Methyl-t-butyl ether	0.0495 U	0.0989	0.0307	mg/kg	1		03/18/21 17:33
Naphthalene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
n-Butylbenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
n-Propylbenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
o-Xylene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
P & M -Xylene	0.0248 U	0.0495	0.0148	mg/kg	1		03/18/21 17:33
sec-Butylbenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
Styrene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
tert-Butylbenzene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
Tetrachloroethene	0.00620 U	0.0124	0.00386	mg/kg	1		03/18/21 17:33
Toluene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
trans-1,2-Dichloroethene	0.0124 U	0.0247	0.00772	mg/kg	1		03/18/21 17:33
trans-1,3-Dichloropropene	0.00620 U	0.0124	0.00386	mg/kg	1		03/18/21 17:33
Trichloroethene	0.00248 U	0.00495	0.00148	mg/kg	1		03/18/21 17:33
Trichlorofluoromethane	0.0248 U	0.0495	0.0148	mg/kg	1		03/18/21 17:33
Vinyl acetate	0.0495 U	0.0989	0.0307	mg/kg	1		03/18/21 17:33
Vinyl chloride	0.000396 U	0.000792	0.000247	mg/kg	1		03/18/21 17:33
Xylenes (total)	0.0371 U	0.0742	0.0226	mg/kg	1		03/18/21 17:33
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/18/21 17:33
4-Bromofluorobenzene (surr)	97.8	55-151		%	1		03/18/21 17:33
Toluene-d8 (surr)	94.4	85-116		%	1		03/18/21 17:33

## Results of SBMW4-2

Client Sample ID: **SBMW4-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172009  
Lab Project ID: 1211172

Collection Date: 03/13/21 11:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.1  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 17:33  
Container ID: 1211172009-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 11:25  
Prep Initial Wt./Vol.: 59.213 g  
Prep Extract Vol: 27.8736 mL



Results of **SBTWP5-1**

Client Sample ID: **SBTWP5-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172010  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.7  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	34.1	21.7	6.73	mg/kg	1		03/23/21 15:13

**Surrogates**

5a Androstane (surr)	90.9	50-150		%	1		03/23/21 15:13
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 15:13  
Container ID: 1211172010-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.134 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	348	109	46.7	mg/kg	1		03/23/21 15:13

**Surrogates**

n-Triacontane-d62 (surr)	87.7	50-150		%	1		03/23/21 15:13
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 15:13  
Container ID: 1211172010-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.134 g  
Prep Extract Vol: 5 mL



Results of **SBTWP5-1**

Client Sample ID: **SBTWP5-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172010  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.7  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.24 U	2.48	0.745	mg/kg	1		03/19/21 19:22
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	93.6	50-150		%	1		03/19/21 19:22

**Batch Information**

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 19:22  
Container ID: 1211172010-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 10:30  
Prep Initial Wt./Vol.: 67.083 g  
Prep Extract Vol: 30.5594 mL



Results of SBTWP5-1

Client Sample ID: SBTWP5-1
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172010
Lab Project ID: 1211172

Collection Date: 03/12/21 10:30
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):91.7
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of SBTWP5-1

Client Sample ID: SBTWP5-1
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172010
Lab Project ID: 1211172

Collection Date: 03/12/21 10:30
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):91.7
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

## Results of SBTWP5-1

Client Sample ID: **SBTWP5-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172010  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.7  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 17:48  
Container ID: 1211172010-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 10:30  
Prep Initial Wt./Vol.: 67.083 g  
Prep Extract Vol: 30.5594 mL





Results of **SBTWP5-2**

Client Sample ID: **SBTWP5-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172011  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.9  
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
2-Methylnaphthalene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Acenaphthene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Acenaphthylene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Anthracene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Benzo(a)Anthracene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Benzo[a]pyrene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Benzo[b]Fluoranthene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Benzo[g,h,i]perylene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Benzo[k]fluoranthene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Chrysene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Dibenzo[a,h]anthracene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Fluoranthene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Fluorene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Indeno[1,2,3-c,d] pyrene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Naphthalene	0.0107 U	0.0213	0.00532	mg/kg	1		03/29/21 19:10
Phenanthrene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
Pyrene	0.0133 U	0.0266	0.00665	mg/kg	1		03/29/21 19:10
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	70.5	58-103		%	1		03/29/21 19:10
Fluoranthene-d10 (surr)	68.6	54-113		%	1		03/29/21 19:10

**Batch Information**

Analytical Batch: XMS12541  
Analytical Method: 8270D SIM (PAH)  
Analyst: CDM  
Analytical Date/Time: 03/29/21 19:10  
Container ID: 1211172011-B

Prep Batch: XXX44556  
Prep Method: SW3550C  
Prep Date/Time: 03/26/21 08:52  
Prep Initial Wt./Vol.: 22.504 g  
Prep Extract Vol: 5 mL



Results of **SBTWP5-2**

Client Sample ID: **SBTWP5-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172011  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.9  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.7 U	21.3	6.60	mg/kg	1		03/23/21 13:44

**Surrogates**

5a Androstane (surr)	106	50-150		%	1		03/23/21 13:44
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:44  
Container ID: 1211172011-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.018 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	53.0 U	106	45.8	mg/kg	1		03/23/21 13:44

**Surrogates**

n-Triacontane-d62 (surr)	104	50-150		%	1		03/23/21 13:44
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 13:44  
Container ID: 1211172011-B

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 03/22/21 15:09  
Prep Initial Wt./Vol.: 30.018 g  
Prep Extract Vol: 5 mL

## Results of SBTWP5-2

Client Sample ID: **SBTWP5-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172011  
 Lab Project ID: 1211172

Collection Date: 03/12/21 10:45  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):93.9  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.20 U	2.40	0.721	mg/kg	1		03/19/21 19:40
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	77.8	50-150		%	1		03/19/21 19:40

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 03/19/21 19:40  
 Container ID: 1211172011-A

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/12/21 10:45  
 Prep Initial Wt./Vol.: 64.073 g  
 Prep Extract Vol: 28.9071 mL



Results of SBTWP5-2

Client Sample ID: SBTWP5-2
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172011
Lab Project ID: 1211172

Collection Date: 03/12/21 10:45
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of **SBTWP5-2**

Client Sample ID: **SBTWP5-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172011  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.9  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0960 U	0.192	0.0596	mg/kg	1		03/18/21 18:04
Chloroform	0.00192 U	0.00384	0.000961	mg/kg	1		03/18/21 18:04
Chloromethane	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
cis-1,2-Dichloroethene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
cis-1,3-Dichloropropene	0.00600 U	0.0120	0.00375	mg/kg	1		03/18/21 18:04
Dibromochloromethane	0.00240 U	0.00480	0.00144	mg/kg	1		03/18/21 18:04
Dibromomethane	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
Dichlorodifluoromethane	0.0240 U	0.0480	0.0144	mg/kg	1		03/18/21 18:04
Ethylbenzene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
Freon-113	0.0481 U	0.0961	0.0298	mg/kg	1		03/18/21 18:04
Hexachlorobutadiene	0.00960 U	0.0192	0.00596	mg/kg	1		03/18/21 18:04
Isopropylbenzene (Cumene)	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
Methylene chloride	0.0481 U	0.0961	0.0298	mg/kg	1		03/18/21 18:04
Methyl-t-butyl ether	0.0481 U	0.0961	0.0298	mg/kg	1		03/18/21 18:04
Naphthalene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
n-Butylbenzene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
n-Propylbenzene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
o-Xylene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
P & M -Xylene	0.0240 U	0.0480	0.0144	mg/kg	1		03/18/21 18:04
sec-Butylbenzene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
Styrene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
tert-Butylbenzene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
Tetrachloroethene	0.00600 U	0.0120	0.00375	mg/kg	1		03/18/21 18:04
Toluene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
trans-1,2-Dichloroethene	0.0120 U	0.0240	0.00750	mg/kg	1		03/18/21 18:04
trans-1,3-Dichloropropene	0.00600 U	0.0120	0.00375	mg/kg	1		03/18/21 18:04
Trichloroethene	0.00240 U	0.00480	0.00144	mg/kg	1		03/18/21 18:04
Trichlorofluoromethane	0.0240 U	0.0480	0.0144	mg/kg	1		03/18/21 18:04
Vinyl acetate	0.0481 U	0.0961	0.0298	mg/kg	1		03/18/21 18:04
Vinyl chloride	0.000385 U	0.000769	0.000240	mg/kg	1		03/18/21 18:04
Xylenes (total)	0.0360 U	0.0721	0.0219	mg/kg	1		03/18/21 18:04

**Surrogates**

1,2-Dichloroethane-D4 (surr)	101	71-136	%	1		03/18/21 18:04
4-Bromofluorobenzene (surr)	93.3	55-151	%	1		03/18/21 18:04
Toluene-d8 (surr)	94.2	85-116	%	1		03/18/21 18:04



Results of **SBTWP5-2**

Client Sample ID: **SBTWP5-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172011  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.9  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 18:04  
Container ID: 1211172011-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 10:45  
Prep Initial Wt./Vol.: 64.073 g  
Prep Extract Vol: 28.9071 mL



Results of **SBTWP5-102**

Client Sample ID: **SBTWP5-102**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172012  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.7  
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
2-Methylnaphthalene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Acenaphthene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Acenaphthylene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Anthracene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Benzo(a)Anthracene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Benzo[a]pyrene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Benzo[b]Fluoranthene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Benzo[g,h,i]perylene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Benzo[k]fluoranthene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Chrysene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Dibenzo[a,h]anthracene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Fluoranthene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Fluorene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Indeno[1,2,3-c,d] pyrene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Naphthalene	0.0108 U	0.0216	0.00541	mg/kg	1		03/29/21 19:30
Phenanthrene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
Pyrene	0.0135 U	0.0270	0.00676	mg/kg	1		03/29/21 19:30
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	68.1	58-103		%	1		03/29/21 19:30
Fluoranthene-d10 (surr)	66.5	54-113		%	1		03/29/21 19:30

**Batch Information**

Analytical Batch: XMS12541  
Analytical Method: 8270D SIM (PAH)  
Analyst: CDM  
Analytical Date/Time: 03/29/21 19:30  
Container ID: 1211172012-B

Prep Batch: XXX44556  
Prep Method: SW3550C  
Prep Date/Time: 03/26/21 08:52  
Prep Initial Wt./Vol.: 22.943 g  
Prep Extract Vol: 5 mL



Results of **SBTWP5-102**

Client Sample ID: **SBTWP5-102**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172012  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.7  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	7.74 J	21.9	6.78	mg/kg	1		03/23/21 17:44

**Surrogates**

5a Androstane (surr)	85.3	50-150		%	1		03/23/21 17:44
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 17:44  
Container ID: 1211172012-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.265 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	54.5 U	109	47.0	mg/kg	1		03/23/21 17:44

**Surrogates**

n-Triacontane-d62 (surr)	81.9	50-150		%	1		03/23/21 17:44
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 17:44  
Container ID: 1211172012-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.265 g  
Prep Extract Vol: 5 mL





Results of **SBTWP5-102**

Client Sample ID: **SBTWP5-102**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172012  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.7  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.35 U	2.70	0.810	mg/kg	1		03/19/21 19:58
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	104	50-150		%	1		03/19/21 19:58

**Batch Information**

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 19:58  
Container ID: 1211172012-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 10:35  
Prep Initial Wt./Vol.: 63.099 g  
Prep Extract Vol: 30.8961 mL



Results of SBTWP5-102

Client Sample ID: SBTWP5-102
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172012
Lab Project ID: 1211172

Collection Date: 03/12/21 10:35
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):90.7
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of SBTWP5-102**

Client Sample ID: **SBTWP5-102**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172012  
 Lab Project ID: 1211172

Collection Date: 03/12/21 10:35  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):90.7  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.108 U	0.216	0.0670	mg/kg	1		03/18/21 18:19
Chloroform	0.00216 U	0.00432	0.00108	mg/kg	1		03/18/21 18:19
Chloromethane	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
cis-1,2-Dichloroethene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
cis-1,3-Dichloropropene	0.00675 U	0.0135	0.00421	mg/kg	1		03/18/21 18:19
Dibromochloromethane	0.00270 U	0.00540	0.00162	mg/kg	1		03/18/21 18:19
Dibromomethane	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
Dichlorodifluoromethane	0.0270 U	0.0540	0.0162	mg/kg	1		03/18/21 18:19
Ethylbenzene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
Freon-113	0.0540 U	0.108	0.0335	mg/kg	1		03/18/21 18:19
Hexachlorobutadiene	0.0108 U	0.0216	0.00670	mg/kg	1		03/18/21 18:19
Isopropylbenzene (Cumene)	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
Methylene chloride	0.0540 U	0.108	0.0335	mg/kg	1		03/18/21 18:19
Methyl-t-butyl ether	0.0540 U	0.108	0.0335	mg/kg	1		03/18/21 18:19
Naphthalene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
n-Butylbenzene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
n-Propylbenzene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
o-Xylene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
P & M -Xylene	0.0270 U	0.0540	0.0162	mg/kg	1		03/18/21 18:19
sec-Butylbenzene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
Styrene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
tert-Butylbenzene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
Tetrachloroethene	0.00675 U	0.0135	0.00421	mg/kg	1		03/18/21 18:19
Toluene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
trans-1,2-Dichloroethene	0.0135 U	0.0270	0.00843	mg/kg	1		03/18/21 18:19
trans-1,3-Dichloropropene	0.00675 U	0.0135	0.00421	mg/kg	1		03/18/21 18:19
Trichloroethene	0.00270 U	0.00540	0.00162	mg/kg	1		03/18/21 18:19
Trichlorofluoromethane	0.0270 U	0.0540	0.0162	mg/kg	1		03/18/21 18:19
Vinyl acetate	0.0540 U	0.108	0.0335	mg/kg	1		03/18/21 18:19
Vinyl chloride	0.000432 U	0.000864	0.000270	mg/kg	1		03/18/21 18:19
Xylenes (total)	0.0405 U	0.0810	0.0246	mg/kg	1		03/18/21 18:19
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	100	71-136		%	1		03/18/21 18:19
4-Bromofluorobenzene (surr)	104	55-151		%	1		03/18/21 18:19
Toluene-d8 (surr)	94.2	85-116		%	1		03/18/21 18:19

## Results of SBTWP5-102

Client Sample ID: **SBTWP5-102**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172012  
Lab Project ID: 1211172

Collection Date: 03/12/21 10:35  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.7  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 18:19  
Container ID: 1211172012-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 10:35  
Prep Initial Wt./Vol.: 63.099 g  
Prep Extract Vol: 30.8961 mL



Results of **SBTWP6-1**

Client Sample ID: **SBTWP6-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172013  
Lab Project ID: 1211172

Collection Date: 03/13/21 12:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	203	84.3	26.1	mg/kg	4		03/23/21 19:52

**Surrogates**

5a Androstane (surr)	91.3	50-150		%	4		03/23/21 19:52
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:52  
Container ID: 1211172013-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.182 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	2240	421	181	mg/kg	4		03/23/21 19:52

**Surrogates**

n-Triacontane-d62 (surr)	112	50-150		%	4		03/23/21 19:52
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:52  
Container ID: 1211172013-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.182 g  
Prep Extract Vol: 5 mL



Results of **SBTWP6-1**

Client Sample ID: **SBTWP6-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172013  
Lab Project ID: 1211172

Collection Date: 03/13/21 12:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.42 U	2.84	0.852	mg/kg	1		03/19/21 20:16
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	85.7	50-150		%	1		03/19/21 20:16

**Batch Information**

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 20:16  
Container ID: 1211172013-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 12:25  
Prep Initial Wt./Vol.: 52.168 g  
Prep Extract Vol: 27.9453 mL



Results of SBTWP6-1

Client Sample ID: SBTWP6-1
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172013
Lab Project ID: 1211172

Collection Date: 03/13/21 12:25
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):94.4
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of SBTWP6-1

Client Sample ID: SBTWP6-1
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172013
Lab Project ID: 1211172

Collection Date: 03/13/21 12:25
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):94.4
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



## Results of SBTWP6-1

Client Sample ID: **SBTWP6-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172013  
Lab Project ID: 1211172

Collection Date: 03/13/21 12:25  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 18:35  
Container ID: 1211172013-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 12:25  
Prep Initial Wt./Vol.: 52.168 g  
Prep Extract Vol: 27.9453 mL



Results of SBTWP6-101

Client Sample ID: SBTWP6-101
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172014
Lab Project ID: 1211172

Collection Date: 03/13/21 12:15
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):94.4
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 163, 84.3, 26.1, mg/kg, 4, 03/23/21 20:02

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 91.7, 50-150, %, 4, 03/23/21 20:02

Batch Information

Analytical Batch: XFC15880
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 03/23/21 20:02
Container ID: 1211172014-B

Prep Batch: XXX44543
Prep Method: SW3550C
Prep Date/Time: 03/23/21 13:15
Prep Initial Wt./Vol.: 30.137 g
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 1780, 422, 181, mg/kg, 4, 03/23/21 20:02

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 103, 50-150, %, 4, 03/23/21 20:02

Batch Information

Analytical Batch: XFC15880
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 03/23/21 20:02
Container ID: 1211172014-B

Prep Batch: XXX44543
Prep Method: SW3550C
Prep Date/Time: 03/23/21 13:15
Prep Initial Wt./Vol.: 30.137 g
Prep Extract Vol: 5 mL

## Results of SBTWP6-101

Client Sample ID: **SBTWP6-101**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172014  
 Lab Project ID: 1211172

Collection Date: 03/13/21 12:15  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.4  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.39 U	2.77	0.831	mg/kg	1		03/19/21 20:33
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	91.9	50-150		%	1		03/19/21 20:33

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 03/19/21 20:33  
 Container ID: 1211172014-A

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/13/21 12:15  
 Prep Initial Wt./Vol.: 53.448 g  
 Prep Extract Vol: 27.9685 mL



Results of SBTWP6-101

Client Sample ID: SBTWP6-101
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172014
Lab Project ID: 1211172

Collection Date: 03/13/21 12:15
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):94.4
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of SBTWP6-101**

Client Sample ID: **SBTWP6-101**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172014  
 Lab Project ID: 1211172

Collection Date: 03/13/21 12:15  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.4  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.111 U	0.222	0.0687	mg/kg	1		03/18/21 18:50
Chloroform	0.00222 U	0.00443	0.00111	mg/kg	1		03/18/21 18:50
Chloromethane	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
cis-1,2-Dichloroethene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
cis-1,3-Dichloropropene	0.00695 U	0.0139	0.00432	mg/kg	1		03/18/21 18:50
Dibromochloromethane	0.00277 U	0.00554	0.00166	mg/kg	1		03/18/21 18:50
Dibromomethane	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
Dichlorodifluoromethane	0.0277 U	0.0554	0.0166	mg/kg	1		03/18/21 18:50
Ethylbenzene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
Freon-113	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 18:50
Hexachlorobutadiene	0.0111 U	0.0222	0.00687	mg/kg	1		03/18/21 18:50
Isopropylbenzene (Cumene)	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
Methylene chloride	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 18:50
Methyl-t-butyl ether	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 18:50
Naphthalene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
n-Butylbenzene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
n-Propylbenzene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
o-Xylene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
P & M -Xylene	0.0277 U	0.0554	0.0166	mg/kg	1		03/18/21 18:50
sec-Butylbenzene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
Styrene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
tert-Butylbenzene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
Tetrachloroethene	0.00695 U	0.0139	0.00432	mg/kg	1		03/18/21 18:50
Toluene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
trans-1,2-Dichloroethene	0.0138 U	0.0277	0.00864	mg/kg	1		03/18/21 18:50
trans-1,3-Dichloropropene	0.00695 U	0.0139	0.00432	mg/kg	1		03/18/21 18:50
Trichloroethene	0.00277 U	0.00554	0.00166	mg/kg	1		03/18/21 18:50
Trichlorofluoromethane	0.0277 U	0.0554	0.0166	mg/kg	1		03/18/21 18:50
Vinyl acetate	0.0555 U	0.111	0.0344	mg/kg	1		03/18/21 18:50
Vinyl chloride	0.000443 U	0.000886	0.000277	mg/kg	1		03/18/21 18:50
Xylenes (total)	0.0415 U	0.0831	0.0253	mg/kg	1		03/18/21 18:50
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	100	71-136		%	1		03/18/21 18:50
4-Bromofluorobenzene (surr)	91	55-151		%	1		03/18/21 18:50
Toluene-d8 (surr)	93.8	85-116		%	1		03/18/21 18:50

## Results of SBTWP6-101

Client Sample ID: **SBTWP6-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172014  
Lab Project ID: 1211172

Collection Date: 03/13/21 12:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 18:50  
Container ID: 1211172014-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 12:15  
Prep Initial Wt./Vol.: 53.448 g  
Prep Extract Vol: 27.9685 mL



Results of **SBTWP6-2**

Client Sample ID: **SBTWP6-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172015  
Lab Project ID: 1211172

Collection Date: 03/13/21 12:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.9  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	6.69 J	20.6	6.38	mg/kg	1		03/23/21 17:54

**Surrogates**

5a Androstane (surr)	97.4	50-150		%	1		03/23/21 17:54
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 17:54  
Container ID: 1211172015-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.103 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	51.5 U	103	44.2	mg/kg	1		03/23/21 17:54

**Surrogates**

n-Triacontane-d62 (surr)	93.3	50-150		%	1		03/23/21 17:54
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 17:54  
Container ID: 1211172015-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.103 g  
Prep Extract Vol: 5 mL

## Results of SBTWP6-2

Client Sample ID: **SBTWP6-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172015  
 Lab Project ID: 1211172

Collection Date: 03/13/21 12:45  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):96.9  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.960 U	1.92	0.576	mg/kg	1		03/19/21 20:51
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	91.8	50-150		%	1		03/19/21 20:51

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 03/19/21 20:51  
 Container ID: 1211172015-A

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/13/21 12:45  
 Prep Initial Wt./Vol.: 73.476 g  
 Prep Extract Vol: 27.3072 mL





Results of **SBTWP6-2**

Client Sample ID: **SBTWP6-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172015  
Lab Project ID: 1211172

Collection Date: 03/13/21 12:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.9  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00765 U	0.0153	0.00476	mg/kg	1		03/18/21 19:05
1,1,1-Trichloroethane	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
1,1,2,2-Tetrachloroethane	0.000765 U	0.00153	0.000476	mg/kg	1		03/18/21 19:05
1,1,2-Trichloroethane	0.000307 U	0.000614	0.000192	mg/kg	1		03/18/21 19:05
1,1-Dichloroethane	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
1,1-Dichloroethene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
1,1-Dichloropropene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
1,2,3-Trichlorobenzene	0.0192 U	0.0384	0.0115	mg/kg	1		03/18/21 19:05
1,2,3-Trichloropropane	0.000765 U	0.00153	0.000476	mg/kg	1		03/18/21 19:05
1,2,4-Trichlorobenzene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
1,2,4-Trimethylbenzene	0.0192 U	0.0384	0.0115	mg/kg	1		03/18/21 19:05
1,2-Dibromo-3-chloropropane	0.0384 U	0.0767	0.0238	mg/kg	1		03/18/21 19:05
1,2-Dibromoethane	0.000384 U	0.000767	0.000307	mg/kg	1		03/18/21 19:05
1,2-Dichlorobenzene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
1,2-Dichloroethane	0.000765 U	0.00153	0.000537	mg/kg	1		03/18/21 19:05
1,2-Dichloropropane	0.00383 U	0.00767	0.00238	mg/kg	1		03/18/21 19:05
1,3,5-Trimethylbenzene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
1,3-Dichlorobenzene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
1,3-Dichloropropane	0.00383 U	0.00767	0.00238	mg/kg	1		03/18/21 19:05
1,4-Dichlorobenzene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
2,2-Dichloropropane	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
2-Butanone (MEK)	0.0960 U	0.192	0.0599	mg/kg	1		03/18/21 19:05
2-Chlorotoluene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
2-Hexanone	0.0384 U	0.0767	0.0238	mg/kg	1		03/18/21 19:05
4-Chlorotoluene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
4-Isopropyltoluene	0.0384 U	0.0767	0.0192	mg/kg	1		03/18/21 19:05
4-Methyl-2-pentanone (MIBK)	0.0960 U	0.192	0.0599	mg/kg	1		03/18/21 19:05
Acetone	0.0960 U	0.192	0.0599	mg/kg	1		03/18/21 19:05
Benzene	0.00479 U	0.00959	0.00299	mg/kg	1		03/18/21 19:05
Bromobenzene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
Bromochloromethane	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
Bromodichloromethane	0.000765 U	0.00153	0.000476	mg/kg	1		03/18/21 19:05
Bromoform	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05
Bromomethane	0.00765 U	0.0153	0.00476	mg/kg	1		03/18/21 19:05
Carbon disulfide	0.0384 U	0.0767	0.0238	mg/kg	1		03/18/21 19:05
Carbon tetrachloride	0.00479 U	0.00959	0.00299	mg/kg	1		03/18/21 19:05
Chlorobenzene	0.00960 U	0.0192	0.00599	mg/kg	1		03/18/21 19:05



Results of SBTWP6-2

Client Sample ID: SBTWP6-2
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172015
Lab Project ID: 1211172

Collection Date: 03/13/21 12:45
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):96.9
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

## Results of SBTWP6-2

Client Sample ID: **SBTWP6-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172015  
Lab Project ID: 1211172

Collection Date: 03/13/21 12:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.9  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 19:05  
Container ID: 1211172015-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 12:45  
Prep Initial Wt./Vol.: 73.476 g  
Prep Extract Vol: 27.3072 mL



Results of **SBTWP7-1**

Client Sample ID: **SBTWP7-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172016  
Lab Project ID: 1211172

Collection Date: 03/13/21 09:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.2  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	8.53 J	21.2	6.56	mg/kg	1		03/23/21 18:04

**Surrogates**

5a Androstane (surr)	97	50-150		%	1		03/23/21 18:04
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:04  
Container ID: 1211172016-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.104 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	53.0 U	106	45.5	mg/kg	1		03/23/21 18:04

**Surrogates**

n-Triacontane-d62 (surr)	93	50-150		%	1		03/23/21 18:04
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:04  
Container ID: 1211172016-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.104 g  
Prep Extract Vol: 5 mL

## Results of SBTWP7-1

Client Sample ID: **SBTWP7-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172016  
 Lab Project ID: 1211172

Collection Date: 03/13/21 09:15  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.2  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.29 U	2.58	0.775	mg/kg	1		03/19/21 21:08
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	82.3	50-150		%	1		03/19/21 21:08

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 03/19/21 21:08  
 Container ID: 1211172016-A

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/13/21 09:15  
 Prep Initial Wt./Vol.: 58.377 g  
 Prep Extract Vol: 28.4096 mL



Results of SBTWP7-1

Client Sample ID: SBTWP7-1
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172016
Lab Project ID: 1211172

Collection Date: 03/13/21 09:15
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of **SBTWP7-1**

Client Sample ID: **SBTWP7-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172016  
 Lab Project ID: 1211172

Collection Date: 03/13/21 09:15  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.2  
 Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.103 U	0.207	0.0641	mg/kg	1		03/18/21 19:21
Chloroform	0.00207 U	0.00413	0.00103	mg/kg	1		03/18/21 19:21
Chloromethane	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
cis-1,2-Dichloroethene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
cis-1,3-Dichloropropene	0.00645 U	0.0129	0.00403	mg/kg	1		03/18/21 19:21
Dibromochloromethane	0.00259 U	0.00517	0.00155	mg/kg	1		03/18/21 19:21
Dibromomethane	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
Dichlorodifluoromethane	0.0259 U	0.0517	0.0155	mg/kg	1		03/18/21 19:21
Ethylbenzene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
Freon-113	0.0515 U	0.103	0.0320	mg/kg	1		03/18/21 19:21
Hexachlorobutadiene	0.0104 U	0.0207	0.00641	mg/kg	1		03/18/21 19:21
Isopropylbenzene (Cumene)	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
Methylene chloride	0.0515 U	0.103	0.0320	mg/kg	1		03/18/21 19:21
Methyl-t-butyl ether	0.0515 U	0.103	0.0320	mg/kg	1		03/18/21 19:21
Naphthalene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
n-Butylbenzene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
n-Propylbenzene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
o-Xylene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
P & M -Xylene	0.0259 U	0.0517	0.0155	mg/kg	1		03/18/21 19:21
sec-Butylbenzene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
Styrene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
tert-Butylbenzene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
Tetrachloroethene	0.00645 U	0.0129	0.00403	mg/kg	1		03/18/21 19:21
Toluene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
trans-1,2-Dichloroethene	0.0129 U	0.0258	0.00806	mg/kg	1		03/18/21 19:21
trans-1,3-Dichloropropene	0.00645 U	0.0129	0.00403	mg/kg	1		03/18/21 19:21
Trichloroethene	0.00259 U	0.00517	0.00155	mg/kg	1		03/18/21 19:21
Trichlorofluoromethane	0.0259 U	0.0517	0.0155	mg/kg	1		03/18/21 19:21
Vinyl acetate	0.0515 U	0.103	0.0320	mg/kg	1		03/18/21 19:21
Vinyl chloride	0.000414 U	0.000827	0.000258	mg/kg	1		03/18/21 19:21
Xylenes (total)	0.0388 U	0.0775	0.0236	mg/kg	1		03/18/21 19:21
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/18/21 19:21
4-Bromofluorobenzene (surr)	84.1	55-151		%	1		03/18/21 19:21
Toluene-d8 (surr)	93.9	85-116		%	1		03/18/21 19:21

## Results of SBTWP7-1

Client Sample ID: **SBTWP7-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172016  
Lab Project ID: 1211172

Collection Date: 03/13/21 09:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.2  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 19:21  
Container ID: 1211172016-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 09:15  
Prep Initial Wt./Vol.: 58.377 g  
Prep Extract Vol: 28.4096 mL





Results of **SBTWP7-2**

Client Sample ID: **SBTWP7-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172017  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	7.99 J	21.1	6.56	mg/kg	1		03/23/21 18:14

**Surrogates**

5a Androstane (surr)	91.5	50-150		%	1		03/23/21 18:14
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:14  
Container ID: 1211172017-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.184 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	53.0 U	106	45.5	mg/kg	1		03/23/21 18:14

**Surrogates**

n-Triacontane-d62 (surr)	87.6	50-150		%	1		03/23/21 18:14
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:14  
Container ID: 1211172017-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.184 g  
Prep Extract Vol: 5 mL



Results of **SBTWP7-2**

Client Sample ID: **SBTWP7-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172017  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.03 U	2.06	0.618	mg/kg	1		03/19/21 21:26
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	93.1	50-150		%	1		03/19/21 21:26

**Batch Information**

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 21:26  
Container ID: 1211172017-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 10:00  
Prep Initial Wt./Vol.: 76.352 g  
Prep Extract Vol: 29.5761 mL



Results of **SBTWP7-2**

Client Sample ID: **SBTWP7-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172017  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00825 U	0.0165	0.00511	mg/kg	1		03/18/21 19:36
1,1,1-Trichloroethane	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
1,1,2,2-Tetrachloroethane	0.000825 U	0.00165	0.000511	mg/kg	1		03/18/21 19:36
1,1,2-Trichloroethane	0.000329 U	0.000659	0.000206	mg/kg	1		03/18/21 19:36
1,1-Dichloroethane	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
1,1-Dichloroethene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
1,1-Dichloropropene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
1,2,3-Trichlorobenzene	0.0206 U	0.0412	0.0124	mg/kg	1		03/18/21 19:36
1,2,3-Trichloropropane	0.000825 U	0.00165	0.000511	mg/kg	1		03/18/21 19:36
1,2,4-Trichlorobenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
1,2,4-Trimethylbenzene	0.0206 U	0.0412	0.0124	mg/kg	1		03/18/21 19:36
1,2-Dibromo-3-chloropropane	0.0412 U	0.0824	0.0255	mg/kg	1		03/18/21 19:36
1,2-Dibromoethane	0.000412 U	0.000824	0.000330	mg/kg	1		03/18/21 19:36
1,2-Dichlorobenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
1,2-Dichloroethane	0.000825 U	0.00165	0.000577	mg/kg	1		03/18/21 19:36
1,2-Dichloropropane	0.00412 U	0.00824	0.00255	mg/kg	1		03/18/21 19:36
1,3,5-Trimethylbenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
1,3-Dichlorobenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
1,3-Dichloropropane	0.00412 U	0.00824	0.00255	mg/kg	1		03/18/21 19:36
1,4-Dichlorobenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
2,2-Dichloropropane	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
2-Butanone (MEK)	0.103 U	0.206	0.0643	mg/kg	1		03/18/21 19:36
2-Chlorotoluene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
2-Hexanone	0.0412 U	0.0824	0.0255	mg/kg	1		03/18/21 19:36
4-Chlorotoluene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
4-Isopropyltoluene	0.0412 U	0.0824	0.0206	mg/kg	1		03/18/21 19:36
4-Methyl-2-pentanone (MIBK)	0.103 U	0.206	0.0643	mg/kg	1		03/18/21 19:36
Acetone	0.103 U	0.206	0.0643	mg/kg	1		03/18/21 19:36
Benzene	0.00515 U	0.0103	0.00321	mg/kg	1		03/18/21 19:36
Bromobenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
Bromochloromethane	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
Bromodichloromethane	0.000825 U	0.00165	0.000511	mg/kg	1		03/18/21 19:36
Bromoform	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
Bromomethane	0.00825 U	0.0165	0.00511	mg/kg	1		03/18/21 19:36
Carbon disulfide	0.0412 U	0.0824	0.0255	mg/kg	1		03/18/21 19:36
Carbon tetrachloride	0.00515 U	0.0103	0.00321	mg/kg	1		03/18/21 19:36
Chlorobenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36



Results of **SBTWP7-2**

Client Sample ID: **SBTWP7-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172017  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0825 U	0.165	0.0511	mg/kg	1		03/18/21 19:36
Chloroform	0.00165 U	0.00330	0.000824	mg/kg	1		03/18/21 19:36
Chloromethane	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
cis-1,2-Dichloroethene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
cis-1,3-Dichloropropene	0.00515 U	0.0103	0.00321	mg/kg	1		03/18/21 19:36
Dibromochloromethane	0.00206 U	0.00412	0.00124	mg/kg	1		03/18/21 19:36
Dibromomethane	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
Dichlorodifluoromethane	0.0206 U	0.0412	0.0124	mg/kg	1		03/18/21 19:36
Ethylbenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
Freon-113	0.0412 U	0.0824	0.0255	mg/kg	1		03/18/21 19:36
Hexachlorobutadiene	0.00825 U	0.0165	0.00511	mg/kg	1		03/18/21 19:36
Isopropylbenzene (Cumene)	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
Methylene chloride	0.0412 U	0.0824	0.0255	mg/kg	1		03/18/21 19:36
Methyl-t-butyl ether	0.0412 U	0.0824	0.0255	mg/kg	1		03/18/21 19:36
Naphthalene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
n-Butylbenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
n-Propylbenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
o-Xylene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
P & M -Xylene	0.0206 U	0.0412	0.0124	mg/kg	1		03/18/21 19:36
sec-Butylbenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
Styrene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
tert-Butylbenzene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
Tetrachloroethene	0.00515 U	0.0103	0.00321	mg/kg	1		03/18/21 19:36
Toluene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
trans-1,2-Dichloroethene	0.0103 U	0.0206	0.00643	mg/kg	1		03/18/21 19:36
trans-1,3-Dichloropropene	0.00515 U	0.0103	0.00321	mg/kg	1		03/18/21 19:36
Trichloroethene	0.00206 U	0.00412	0.00124	mg/kg	1		03/18/21 19:36
Trichlorofluoromethane	0.0206 U	0.0412	0.0124	mg/kg	1		03/18/21 19:36
Vinyl acetate	0.0412 U	0.0824	0.0255	mg/kg	1		03/18/21 19:36
Vinyl chloride	0.000329 U	0.000659	0.000206	mg/kg	1		03/18/21 19:36
Xylenes (total)	0.0309 U	0.0618	0.0188	mg/kg	1		03/18/21 19:36
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/18/21 19:36
4-Bromofluorobenzene (surr)	98.1	55-151		%	1		03/18/21 19:36
Toluene-d8 (surr)	94	85-116		%	1		03/18/21 19:36

## Results of SBTWP7-2

Client Sample ID: **SBTWP7-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172017  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 19:36  
Container ID: 1211172017-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 10:00  
Prep Initial Wt./Vol.: 76.352 g  
Prep Extract Vol: 29.5761 mL



Results of **SBMW4-101**

Client Sample ID: **SBMW4-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172018  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.9  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	27.8	22.2	6.88	mg/kg	1		03/23/21 19:33

**Surrogates**

5a Androstane (surr)	81.9	50-150		%	1		03/23/21 19:33
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:33  
Container ID: 1211172018-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.418 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	254	111	47.7	mg/kg	1		03/23/21 19:33

**Surrogates**

n-Triacontane-d62 (surr)	84	50-150		%	1		03/23/21 19:33
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:33  
Container ID: 1211172018-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.418 g  
Prep Extract Vol: 5 mL



Results of **SBMW4-101**

Client Sample ID: **SBMW4-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172018  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.9  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.58 U	3.15	0.945	mg/kg	1		03/19/21 22:01
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	81.2	50-150		%	1		03/19/21 22:01

**Batch Information**

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 22:01  
Container ID: 1211172018-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 10:30  
Prep Initial Wt./Vol.: 55.595 g  
Prep Extract Vol: 31.1596 mL



Results of **SBMW4-101**

Client Sample ID: **SBMW4-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172018  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.9  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0126 U	0.0252	0.00782	mg/kg	1		03/18/21 19:52
1,1,1-Trichloroethane	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
1,1,2,2-Tetrachloroethane	0.00126 U	0.00252	0.000782	mg/kg	1		03/18/21 19:52
1,1,2-Trichloroethane	0.000505 U	0.00101	0.000315	mg/kg	1		03/18/21 19:52
1,1-Dichloroethane	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
1,1-Dichloroethene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
1,1-Dichloropropene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
1,2,3-Trichlorobenzene	0.0315 U	0.0630	0.0189	mg/kg	1		03/18/21 19:52
1,2,3-Trichloropropane	0.00126 U	0.00252	0.000782	mg/kg	1		03/18/21 19:52
1,2,4-Trichlorobenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
1,2,4-Trimethylbenzene	0.0315 U	0.0630	0.0189	mg/kg	1		03/18/21 19:52
1,2-Dibromo-3-chloropropane	0.0630 U	0.126	0.0391	mg/kg	1		03/18/21 19:52
1,2-Dibromoethane	0.000630 U	0.00126	0.000504	mg/kg	1		03/18/21 19:52
1,2-Dichlorobenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
1,2-Dichloroethane	0.00126 U	0.00252	0.000882	mg/kg	1		03/18/21 19:52
1,2-Dichloropropane	0.00630 U	0.0126	0.00391	mg/kg	1		03/18/21 19:52
1,3,5-Trimethylbenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
1,3-Dichlorobenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
1,3-Dichloropropane	0.00630 U	0.0126	0.00391	mg/kg	1		03/18/21 19:52
1,4-Dichlorobenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
2,2-Dichloropropane	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
2-Butanone (MEK)	0.158 U	0.315	0.0983	mg/kg	1		03/18/21 19:52
2-Chlorotoluene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
2-Hexanone	0.0630 U	0.126	0.0391	mg/kg	1		03/18/21 19:52
4-Chlorotoluene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
4-Isopropyltoluene	0.0429 J	0.126	0.0315	mg/kg	1		03/18/21 19:52
4-Methyl-2-pentanone (MIBK)	0.158 U	0.315	0.0983	mg/kg	1		03/18/21 19:52
Acetone	0.158 U	0.315	0.0983	mg/kg	1		03/18/21 19:52
Benzene	0.00790 U	0.0158	0.00492	mg/kg	1		03/18/21 19:52
Bromobenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
Bromochloromethane	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
Bromodichloromethane	0.00126 U	0.00252	0.000782	mg/kg	1		03/18/21 19:52
Bromoform	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
Bromomethane	0.0126 U	0.0252	0.00782	mg/kg	1		03/18/21 19:52
Carbon disulfide	0.0630 U	0.126	0.0391	mg/kg	1		03/18/21 19:52
Carbon tetrachloride	0.00790 U	0.0158	0.00492	mg/kg	1		03/18/21 19:52
Chlorobenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52





Results of **SBMW4-101**

Client Sample ID: **SBMW4-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172018  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.9  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.126 U	0.252	0.0782	mg/kg	1		03/18/21 19:52
Chloroform	0.00252 U	0.00504	0.00126	mg/kg	1		03/18/21 19:52
Chloromethane	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
cis-1,2-Dichloroethene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
cis-1,3-Dichloropropene	0.00790 U	0.0158	0.00492	mg/kg	1		03/18/21 19:52
Dibromochloromethane	0.00315 U	0.00630	0.00189	mg/kg	1		03/18/21 19:52
Dibromomethane	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
Dichlorodifluoromethane	0.0315 U	0.0630	0.0189	mg/kg	1		03/18/21 19:52
Ethylbenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
Freon-113	0.0630 U	0.126	0.0391	mg/kg	1		03/18/21 19:52
Hexachlorobutadiene	0.0126 U	0.0252	0.00782	mg/kg	1		03/18/21 19:52
Isopropylbenzene (Cumene)	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
Methylene chloride	0.0630 U	0.126	0.0391	mg/kg	1		03/18/21 19:52
Methyl-t-butyl ether	0.0630 U	0.126	0.0391	mg/kg	1		03/18/21 19:52
Naphthalene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
n-Butylbenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
n-Propylbenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
o-Xylene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
P & M -Xylene	0.0315 U	0.0630	0.0189	mg/kg	1		03/18/21 19:52
sec-Butylbenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
Styrene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
tert-Butylbenzene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
Tetrachloroethene	0.00790 U	0.0158	0.00492	mg/kg	1		03/18/21 19:52
Toluene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
trans-1,2-Dichloroethene	0.0158 U	0.0315	0.00983	mg/kg	1		03/18/21 19:52
trans-1,3-Dichloropropene	0.00790 U	0.0158	0.00492	mg/kg	1		03/18/21 19:52
Trichloroethene	0.00315 U	0.00630	0.00189	mg/kg	1		03/18/21 19:52
Trichlorofluoromethane	0.0315 U	0.0630	0.0189	mg/kg	1		03/18/21 19:52
Vinyl acetate	0.0630 U	0.126	0.0391	mg/kg	1		03/18/21 19:52
Vinyl chloride	0.000505 U	0.00101	0.000315	mg/kg	1		03/18/21 19:52
Xylenes (total)	0.0473 U	0.0945	0.0287	mg/kg	1		03/18/21 19:52
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/18/21 19:52
4-Bromofluorobenzene (surr)	84	55-151		%	1		03/18/21 19:52
Toluene-d8 (surr)	94.7	85-116		%	1		03/18/21 19:52



Results of **SBMW4-101**

Client Sample ID: **SBMW4-101**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172018  
Lab Project ID: 1211172

Collection Date: 03/13/21 10:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):88.9  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 19:52  
Container ID: 1211172018-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/13/21 10:30  
Prep Initial Wt./Vol.: 55.595 g  
Prep Extract Vol: 31.1596 mL



Results of **SB9-1**

Client Sample ID: **SB9-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172019  
Lab Project ID: 1211172

Collection Date: 03/11/21 16:20  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.1  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	12.2 J	22.0	6.82	mg/kg	1		03/23/21 18:23

**Surrogates**

5a Androstane (surr)	84	50-150		%	1		03/23/21 18:23
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:23  
Container ID: 1211172019-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.274 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	52.6 J	110	47.3	mg/kg	1		03/23/21 18:23

**Surrogates**

n-Triacontane-d62 (surr)	79.6	50-150		%	1		03/23/21 18:23
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:23  
Container ID: 1211172019-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.274 g  
Prep Extract Vol: 5 mL



Results of **SB9-1**

Client Sample ID: **SB9-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172019  
Lab Project ID: 1211172

Collection Date: 03/11/21 16:20  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.1  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.41 U	2.81	0.843	mg/kg	1		03/19/21 22:19
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	84.1	50-150		%	1		03/19/21 22:19

Batch Information

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 22:19  
Container ID: 1211172019-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 16:20  
Prep Initial Wt./Vol.: 61.438 g  
Prep Extract Vol: 31.1021 mL



Results of **SB9-1**

Client Sample ID: **SB9-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172019  
Lab Project ID: 1211172

Collection Date: 03/11/21 16:20  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.1  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0113 U	0.0225	0.00697	mg/kg	1		03/18/21 20:07
1,1,1-Trichloroethane	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
1,1,2,2-Tetrachloroethane	0.00112 U	0.00225	0.000697	mg/kg	1		03/18/21 20:07
1,1,2-Trichloroethane	0.000449 U	0.000899	0.000281	mg/kg	1		03/18/21 20:07
1,1-Dichloroethane	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
1,1-Dichloroethene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
1,1-Dichloropropene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
1,2,3-Trichlorobenzene	0.0281 U	0.0562	0.0169	mg/kg	1		03/18/21 20:07
1,2,3-Trichloropropane	0.00112 U	0.00225	0.000697	mg/kg	1		03/18/21 20:07
1,2,4-Trichlorobenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
1,2,4-Trimethylbenzene	0.0281 U	0.0562	0.0169	mg/kg	1		03/18/21 20:07
1,2-Dibromo-3-chloropropane	0.0560 U	0.112	0.0348	mg/kg	1		03/18/21 20:07
1,2-Dibromoethane	0.000560 U	0.00112	0.000450	mg/kg	1		03/18/21 20:07
1,2-Dichlorobenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
1,2-Dichloroethane	0.00112 U	0.00225	0.000787	mg/kg	1		03/18/21 20:07
1,2-Dichloropropane	0.00560 U	0.0112	0.00348	mg/kg	1		03/18/21 20:07
1,3,5-Trimethylbenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
1,3-Dichlorobenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
1,3-Dichloropropane	0.00560 U	0.0112	0.00348	mg/kg	1		03/18/21 20:07
1,4-Dichlorobenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
2,2-Dichloropropane	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
2-Butanone (MEK)	0.141 U	0.281	0.0877	mg/kg	1		03/18/21 20:07
2-Chlorotoluene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
2-Hexanone	0.0560 U	0.112	0.0348	mg/kg	1		03/18/21 20:07
4-Chlorotoluene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
4-Isopropyltoluene	0.0560 U	0.112	0.0281	mg/kg	1		03/18/21 20:07
4-Methyl-2-pentanone (MIBK)	0.141 U	0.281	0.0877	mg/kg	1		03/18/21 20:07
Acetone	0.141 U	0.281	0.0877	mg/kg	1		03/18/21 20:07
Benzene	0.00705 U	0.0141	0.00438	mg/kg	1		03/18/21 20:07
Bromobenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
Bromochloromethane	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
Bromodichloromethane	0.00112 U	0.00225	0.000697	mg/kg	1		03/18/21 20:07
Bromoform	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
Bromomethane	0.0113 U	0.0225	0.00697	mg/kg	1		03/18/21 20:07
Carbon disulfide	0.0560 U	0.112	0.0348	mg/kg	1		03/18/21 20:07
Carbon tetrachloride	0.00705 U	0.0141	0.00438	mg/kg	1		03/18/21 20:07
Chlorobenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07



Results of **SB9-1**

Client Sample ID: **SB9-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172019  
Lab Project ID: 1211172

Collection Date: 03/11/21 16:20  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.1  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.113 U	0.225	0.0697	mg/kg	1		03/18/21 20:07
Chloroform	0.00225 U	0.00450	0.00112	mg/kg	1		03/18/21 20:07
Chloromethane	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
cis-1,2-Dichloroethene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
cis-1,3-Dichloropropene	0.00705 U	0.0141	0.00438	mg/kg	1		03/18/21 20:07
Dibromochloromethane	0.00281 U	0.00562	0.00169	mg/kg	1		03/18/21 20:07
Dibromomethane	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
Dichlorodifluoromethane	0.0281 U	0.0562	0.0169	mg/kg	1		03/18/21 20:07
Ethylbenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
Freon-113	0.0560 U	0.112	0.0348	mg/kg	1		03/18/21 20:07
Hexachlorobutadiene	0.0113 U	0.0225	0.00697	mg/kg	1		03/18/21 20:07
Isopropylbenzene (Cumene)	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
Methylene chloride	0.0560 U	0.112	0.0348	mg/kg	1		03/18/21 20:07
Methyl-t-butyl ether	0.0560 U	0.112	0.0348	mg/kg	1		03/18/21 20:07
Naphthalene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
n-Butylbenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
n-Propylbenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
o-Xylene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
P & M -Xylene	0.0281 U	0.0562	0.0169	mg/kg	1		03/18/21 20:07
sec-Butylbenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
Styrene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
tert-Butylbenzene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
Tetrachloroethene	0.00705 U	0.0141	0.00438	mg/kg	1		03/18/21 20:07
Toluene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
trans-1,2-Dichloroethene	0.0141 U	0.0281	0.00877	mg/kg	1		03/18/21 20:07
trans-1,3-Dichloropropene	0.00705 U	0.0141	0.00438	mg/kg	1		03/18/21 20:07
Trichloroethene	0.00281 U	0.00562	0.00169	mg/kg	1		03/18/21 20:07
Trichlorofluoromethane	0.0281 U	0.0562	0.0169	mg/kg	1		03/18/21 20:07
Vinyl acetate	0.0560 U	0.112	0.0348	mg/kg	1		03/18/21 20:07
Vinyl chloride	0.000449 U	0.000899	0.000281	mg/kg	1		03/18/21 20:07
Xylenes (total)	0.0422 U	0.0843	0.0256	mg/kg	1		03/18/21 20:07
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/18/21 20:07
4-Bromofluorobenzene (surr)	90.4	55-151		%	1		03/18/21 20:07
Toluene-d8 (surr)	94.8	85-116		%	1		03/18/21 20:07



Results of **SB9-1**

Client Sample ID: **SB9-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172019  
Lab Project ID: 1211172

Collection Date: 03/11/21 16:20  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.1  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 20:07  
Container ID: 1211172019-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 16:20  
Prep Initial Wt./Vol.: 61.438 g  
Prep Extract Vol: 31.1021 mL



Results of **SB9-2**

Client Sample ID: **SB9-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172020  
Lab Project ID: 1211172

Collection Date: 03/11/21 16:48  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	8.09 J	21.5	6.66	mg/kg	1		03/23/21 18:33

**Surrogates**

5a Androstane (surr)	87.5	50-150		%	1		03/23/21 18:33
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:33  
Container ID: 1211172020-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.247 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	53.5 U	107	46.2	mg/kg	1		03/23/21 18:33

**Surrogates**

n-Triacontane-d62 (surr)	83.5	50-150		%	1		03/23/21 18:33
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:33  
Container ID: 1211172020-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.247 g  
Prep Extract Vol: 5 mL





Results of **SB9-2**

Client Sample ID: **SB9-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172020  
Lab Project ID: 1211172

Collection Date: 03/11/21 16:48  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.4  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.11 U	2.21	0.662	mg/kg	1		03/19/21 22:36
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	84.4	50-150		%	1		03/19/21 22:36

Batch Information

Analytical Batch: VFC15522  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 03/19/21 22:36  
Container ID: 1211172020-A

Prep Batch: VXX36886  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 16:48  
Prep Initial Wt./Vol.: 75.381 g  
Prep Extract Vol: 30.7502 mL



Results of **SB9-2**

Client Sample ID: **SB9-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172020  
Lab Project ID: 1211172

Collection Date: 03/11/21 16:48  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00885 U	0.0177	0.00548	mg/kg	1		03/18/21 20:23
1,1,1-Trichloroethane	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
1,1,2,2-Tetrachloroethane	0.000885 U	0.00177	0.000548	mg/kg	1		03/18/21 20:23
1,1,2-Trichloroethane	0.000353 U	0.000707	0.000221	mg/kg	1		03/18/21 20:23
1,1-Dichloroethane	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
1,1-Dichloroethene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
1,1-Dichloropropene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
1,2,3-Trichlorobenzene	0.0221 U	0.0442	0.0132	mg/kg	1		03/18/21 20:23
1,2,3-Trichloropropane	0.000885 U	0.00177	0.000548	mg/kg	1		03/18/21 20:23
1,2,4-Trichlorobenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
1,2,4-Trimethylbenzene	0.0221 U	0.0442	0.0132	mg/kg	1		03/18/21 20:23
1,2-Dibromo-3-chloropropane	0.0442 U	0.0883	0.0274	mg/kg	1		03/18/21 20:23
1,2-Dibromoethane	0.000442 U	0.000883	0.000353	mg/kg	1		03/18/21 20:23
1,2-Dichlorobenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
1,2-Dichloroethane	0.000885 U	0.00177	0.000618	mg/kg	1		03/18/21 20:23
1,2-Dichloropropane	0.00441 U	0.00883	0.00274	mg/kg	1		03/18/21 20:23
1,3,5-Trimethylbenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
1,3-Dichlorobenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
1,3-Dichloropropane	0.00441 U	0.00883	0.00274	mg/kg	1		03/18/21 20:23
1,4-Dichlorobenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
2,2-Dichloropropane	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
2-Butanone (MEK)	0.111 U	0.221	0.0689	mg/kg	1		03/18/21 20:23
2-Chlorotoluene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
2-Hexanone	0.0442 U	0.0883	0.0274	mg/kg	1		03/18/21 20:23
4-Chlorotoluene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
4-Isopropyltoluene	0.0442 U	0.0883	0.0221	mg/kg	1		03/18/21 20:23
4-Methyl-2-pentanone (MIBK)	0.111 U	0.221	0.0689	mg/kg	1		03/18/21 20:23
Acetone	0.111 U	0.221	0.0689	mg/kg	1		03/18/21 20:23
Benzene	0.00550 U	0.0110	0.00344	mg/kg	1		03/18/21 20:23
Bromobenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
Bromochloromethane	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
Bromodichloromethane	0.000885 U	0.00177	0.000548	mg/kg	1		03/18/21 20:23
Bromoform	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
Bromomethane	0.00885 U	0.0177	0.00548	mg/kg	1		03/18/21 20:23
Carbon disulfide	0.0442 U	0.0883	0.0274	mg/kg	1		03/18/21 20:23
Carbon tetrachloride	0.00550 U	0.0110	0.00344	mg/kg	1		03/18/21 20:23
Chlorobenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23



**Results of SB9-2**

Client Sample ID: **SB9-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172020  
 Lab Project ID: 1211172

Collection Date: 03/11/21 16:48  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):92.4  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0885 U	0.177	0.0548	mg/kg	1		03/18/21 20:23
Chloroform	0.00177 U	0.00353	0.000883	mg/kg	1		03/18/21 20:23
Chloromethane	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
cis-1,2-Dichloroethene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
cis-1,3-Dichloropropene	0.00550 U	0.0110	0.00344	mg/kg	1		03/18/21 20:23
Dibromochloromethane	0.00221 U	0.00442	0.00132	mg/kg	1		03/18/21 20:23
Dibromomethane	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
Dichlorodifluoromethane	0.0221 U	0.0442	0.0132	mg/kg	1		03/18/21 20:23
Ethylbenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
Freon-113	0.0442 U	0.0883	0.0274	mg/kg	1		03/18/21 20:23
Hexachlorobutadiene	0.00885 U	0.0177	0.00548	mg/kg	1		03/18/21 20:23
Isopropylbenzene (Cumene)	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
Methylene chloride	0.0442 U	0.0883	0.0274	mg/kg	1		03/18/21 20:23
Methyl-t-butyl ether	0.0442 U	0.0883	0.0274	mg/kg	1		03/18/21 20:23
Naphthalene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
n-Butylbenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
n-Propylbenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
o-Xylene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
P & M -Xylene	0.0221 U	0.0442	0.0132	mg/kg	1		03/18/21 20:23
sec-Butylbenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
Styrene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
tert-Butylbenzene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
Tetrachloroethene	0.00550 U	0.0110	0.00344	mg/kg	1		03/18/21 20:23
Toluene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
trans-1,2-Dichloroethene	0.0111 U	0.0221	0.00689	mg/kg	1		03/18/21 20:23
trans-1,3-Dichloropropene	0.00550 U	0.0110	0.00344	mg/kg	1		03/18/21 20:23
Trichloroethene	0.00221 U	0.00442	0.00132	mg/kg	1		03/18/21 20:23
Trichlorofluoromethane	0.0221 U	0.0442	0.0132	mg/kg	1		03/18/21 20:23
Vinyl acetate	0.0442 U	0.0883	0.0274	mg/kg	1		03/18/21 20:23
Vinyl chloride	0.000353 U	0.000707	0.000221	mg/kg	1		03/18/21 20:23
Xylenes (total)	0.0331 U	0.0662	0.0201	mg/kg	1		03/18/21 20:23
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/18/21 20:23
4-Bromofluorobenzene (surr)	92.5	55-151		%	1		03/18/21 20:23
Toluene-d8 (surr)	94.3	85-116		%	1		03/18/21 20:23



Results of **SB9-2**

Client Sample ID: **SB9-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172020  
Lab Project ID: 1211172

Collection Date: 03/11/21 16:48  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.4  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/18/21 20:23  
Container ID: 1211172020-A

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 16:48  
Prep Initial Wt./Vol.: 75.381 g  
Prep Extract Vol: 30.7502 mL



Results of **SB10-1**

Client Sample ID: **SB10-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172021  
Lab Project ID: 1211172

Collection Date: 03/10/21 17:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.9  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	7.90 J	21.1	6.54	mg/kg	1		03/23/21 18:43

**Surrogates**

5a Androstane (surr)	85.7	50-150		%	1		03/23/21 18:43
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:43  
Container ID: 1211172021-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.278 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	52.5 U	105	45.4	mg/kg	1		03/23/21 18:43

**Surrogates**

n-Triacontane-d62 (surr)	81.9	50-150		%	1		03/23/21 18:43
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:43  
Container ID: 1211172021-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.278 g  
Prep Extract Vol: 5 mL



Results of **SB10-1**

Client Sample ID: **SB10-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172021  
Lab Project ID: 1211172

Collection Date: 03/10/21 17:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.9  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.895 J	2.48	0.745	mg/kg	1		03/22/21 19:15
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	92.2	50-150		%	1		03/22/21 19:15

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/22/21 19:15  
Container ID: 1211172021-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 17:00  
Prep Initial Wt./Vol.: 61.607 g  
Prep Extract Vol: 28.7397 mL



Results of **SB10-1**

Client Sample ID: **SB10-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172021  
Lab Project ID: 1211172

Collection Date: 03/10/21 17:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.9  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00995 U	0.0199	0.00616	mg/kg	1		03/24/21 17:01
1,1,1-Trichloroethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
1,1,2,2-Tetrachloroethane	0.000995 U	0.00199	0.000616	mg/kg	1		03/24/21 17:01
1,1,2-Trichloroethane	0.000398 U	0.000795	0.000248	mg/kg	1		03/24/21 17:01
1,1-Dichloroethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
1,1-Dichloroethene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
1,1-Dichloropropene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
1,2,3-Trichlorobenzene	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 17:01
1,2,3-Trichloropropane	0.000995 U	0.00199	0.000616	mg/kg	1		03/24/21 17:01
1,2,4-Trichlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
1,2,4-Trimethylbenzene	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 17:01
1,2-Dibromo-3-chloropropane	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 17:01
1,2-Dibromoethane	0.000496 U	0.000993	0.000397	mg/kg	1		03/24/21 17:01
1,2-Dichlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
1,2-Dichloroethane	0.000995 U	0.00199	0.000695	mg/kg	1		03/24/21 17:01
1,2-Dichloropropane	0.00496 U	0.00993	0.00308	mg/kg	1		03/24/21 17:01
1,3,5-Trimethylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
1,3-Dichlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
1,3-Dichloropropane	0.00496 U	0.00993	0.00308	mg/kg	1		03/24/21 17:01
1,4-Dichlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
2,2-Dichloropropane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
2-Butanone (MEK)	0.124 U	0.248	0.0775	mg/kg	1		03/24/21 17:01
2-Chlorotoluene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
2-Hexanone	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 17:01
4-Chlorotoluene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
4-Isopropyltoluene	0.0497 U	0.0993	0.0248	mg/kg	1		03/24/21 17:01
4-Methyl-2-pentanone (MIBK)	0.124 U	0.248	0.0775	mg/kg	1		03/24/21 17:01
Acetone	0.124 U	0.248	0.0775	mg/kg	1		03/24/21 17:01
Benzene	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 17:01
Bromobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
Bromochloromethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
Bromodichloromethane	0.000995 U	0.00199	0.000616	mg/kg	1		03/24/21 17:01
Bromoform	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
Bromomethane	0.00995 U	0.0199	0.00616	mg/kg	1		03/24/21 17:01
Carbon disulfide	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 17:01
Carbon tetrachloride	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 17:01
Chlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01



**Results of SB10-1**

Client Sample ID: **SB10-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172021  
 Lab Project ID: 1211172

Collection Date: 03/10/21 17:00  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):93.9  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0995 U	0.199	0.0616	mg/kg	1		03/24/21 17:01
Chloroform	0.00198 U	0.00397	0.000993	mg/kg	1		03/24/21 17:01
Chloromethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
cis-1,2-Dichloroethene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
cis-1,3-Dichloropropene	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 17:01
Dibromochloromethane	0.00248 U	0.00497	0.00149	mg/kg	1		03/24/21 17:01
Dibromomethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
Dichlorodifluoromethane	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 17:01
Ethylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
Freon-113	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 17:01
Hexachlorobutadiene	0.00995 U	0.0199	0.00616	mg/kg	1		03/24/21 17:01
Isopropylbenzene (Cumene)	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
Methylene chloride	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 17:01
Methyl-t-butyl ether	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 17:01
Naphthalene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
n-Butylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
n-Propylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
o-Xylene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
P & M -Xylene	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 17:01
sec-Butylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
Styrene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
tert-Butylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
Tetrachloroethene	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 17:01
Toluene	0.0174 J	0.0248	0.00775	mg/kg	1		03/24/21 17:01
trans-1,2-Dichloroethene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 17:01
trans-1,3-Dichloropropene	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 17:01
Trichloroethene	0.00248 U	0.00497	0.00149	mg/kg	1		03/24/21 17:01
Trichlorofluoromethane	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 17:01
Vinyl acetate	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 17:01
Vinyl chloride	0.000398 U	0.000795	0.000248	mg/kg	1		03/24/21 17:01
Xylenes (total)	0.0372 U	0.0745	0.0226	mg/kg	1		03/24/21 17:01
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/24/21 17:01
4-Bromofluorobenzene (surr)	86.4	55-151		%	1		03/24/21 17:01
Toluene-d8 (surr)	97.3	85-116		%	1		03/24/21 17:01



## Results of SB10-1

Client Sample ID: **SB10-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172021  
Lab Project ID: 1211172

Collection Date: 03/10/21 17:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.9  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 17:01  
Container ID: 1211172021-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 17:00  
Prep Initial Wt./Vol.: 61.607 g  
Prep Extract Vol: 28.7397 mL



Results of **SB10-2**

Client Sample ID: **SB10-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172022  
Lab Project ID: 1211172

Collection Date: 03/10/21 17:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.1  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	7.04 J	21.2	6.56	mg/kg	1		03/23/21 18:53

**Surrogates**

5a Androstane (surr)	94.5	50-150		%	1		03/23/21 18:53
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:53  
Container ID: 1211172022-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.125 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	53.0 U	106	45.5	mg/kg	1		03/23/21 18:53

**Surrogates**

n-Triacontane-d62 (surr)	90.7	50-150		%	1		03/23/21 18:53
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 18:53  
Container ID: 1211172022-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.125 g  
Prep Extract Vol: 5 mL



Results of **SB10-2**

Client Sample ID: **SB10-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172022  
Lab Project ID: 1211172

Collection Date: 03/10/21 17:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.1  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.650 J	2.14	0.643	mg/kg	1		03/22/21 19:33
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	98.2	50-150		%	1		03/22/21 19:33

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/22/21 19:33  
Container ID: 1211172022-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 17:50  
Prep Initial Wt./Vol.: 72.59 g  
Prep Extract Vol: 29.2795 mL



Results of **SB10-2**

Client Sample ID: **SB10-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172022  
Lab Project ID: 1211172

Collection Date: 03/10/21 17:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.1  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00855 U	0.0171	0.00531	mg/kg	1		03/24/21 17:16
1,1,1-Trichloroethane	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
1,1,2,2-Tetrachloroethane	0.000855 U	0.00171	0.000531	mg/kg	1		03/24/21 17:16
1,1,2-Trichloroethane	0.000343 U	0.000686	0.000214	mg/kg	1		03/24/21 17:16
1,1-Dichloroethane	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
1,1-Dichloroethene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
1,1-Dichloropropene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
1,2,3-Trichlorobenzene	0.0215 U	0.0429	0.0129	mg/kg	1		03/24/21 17:16
1,2,3-Trichloropropane	0.000855 U	0.00171	0.000531	mg/kg	1		03/24/21 17:16
1,2,4-Trichlorobenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
1,2,4-Trimethylbenzene	0.0215 U	0.0429	0.0129	mg/kg	1		03/24/21 17:16
1,2-Dibromo-3-chloropropane	0.0428 U	0.0857	0.0266	mg/kg	1		03/24/21 17:16
1,2-Dibromoethane	0.000429 U	0.000857	0.000343	mg/kg	1		03/24/21 17:16
1,2-Dichlorobenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
1,2-Dichloroethane	0.000855 U	0.00171	0.000600	mg/kg	1		03/24/21 17:16
1,2-Dichloropropane	0.00428 U	0.00857	0.00266	mg/kg	1		03/24/21 17:16
1,3,5-Trimethylbenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
1,3-Dichlorobenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
1,3-Dichloropropane	0.00428 U	0.00857	0.00266	mg/kg	1		03/24/21 17:16
1,4-Dichlorobenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
2,2-Dichloropropane	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
2-Butanone (MEK)	0.107 U	0.214	0.0669	mg/kg	1		03/24/21 17:16
2-Chlorotoluene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
2-Hexanone	0.0428 U	0.0857	0.0266	mg/kg	1		03/24/21 17:16
4-Chlorotoluene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
4-Isopropyltoluene	0.0428 U	0.0857	0.0214	mg/kg	1		03/24/21 17:16
4-Methyl-2-pentanone (MIBK)	0.107 U	0.214	0.0669	mg/kg	1		03/24/21 17:16
Acetone	0.107 U	0.214	0.0669	mg/kg	1		03/24/21 17:16
Benzene	0.00535 U	0.0107	0.00334	mg/kg	1		03/24/21 17:16
Bromobenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
Bromochloromethane	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
Bromodichloromethane	0.000855 U	0.00171	0.000531	mg/kg	1		03/24/21 17:16
Bromoform	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
Bromomethane	0.00855 U	0.0171	0.00531	mg/kg	1		03/24/21 17:16
Carbon disulfide	0.0428 U	0.0857	0.0266	mg/kg	1		03/24/21 17:16
Carbon tetrachloride	0.00535 U	0.0107	0.00334	mg/kg	1		03/24/21 17:16
Chlorobenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16



Results of **SB10-2**

Client Sample ID: **SB10-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172022  
Lab Project ID: 1211172

Collection Date: 03/10/21 17:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.1  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0855 U	0.171	0.0531	mg/kg	1		03/24/21 17:16
Chloroform	0.00171 U	0.00343	0.000857	mg/kg	1		03/24/21 17:16
Chloromethane	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
cis-1,2-Dichloroethene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
cis-1,3-Dichloropropene	0.00535 U	0.0107	0.00334	mg/kg	1		03/24/21 17:16
Dibromochloromethane	0.00215 U	0.00429	0.00129	mg/kg	1		03/24/21 17:16
Dibromomethane	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
Dichlorodifluoromethane	0.0215 U	0.0429	0.0129	mg/kg	1		03/24/21 17:16
Ethylbenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
Freon-113	0.0428 U	0.0857	0.0266	mg/kg	1		03/24/21 17:16
Hexachlorobutadiene	0.00855 U	0.0171	0.00531	mg/kg	1		03/24/21 17:16
Isopropylbenzene (Cumene)	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
Methylene chloride	0.0428 U	0.0857	0.0266	mg/kg	1		03/24/21 17:16
Methyl-t-butyl ether	0.0428 U	0.0857	0.0266	mg/kg	1		03/24/21 17:16
Naphthalene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
n-Butylbenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
n-Propylbenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
o-Xylene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
P & M -Xylene	0.0215 U	0.0429	0.0129	mg/kg	1		03/24/21 17:16
sec-Butylbenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
Styrene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
tert-Butylbenzene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
Tetrachloroethene	0.00535 U	0.0107	0.00334	mg/kg	1		03/24/21 17:16
Toluene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
trans-1,2-Dichloroethene	0.0107 U	0.0214	0.00669	mg/kg	1		03/24/21 17:16
trans-1,3-Dichloropropene	0.00535 U	0.0107	0.00334	mg/kg	1		03/24/21 17:16
Trichloroethene	0.00215 U	0.00429	0.00129	mg/kg	1		03/24/21 17:16
Trichlorofluoromethane	0.0215 U	0.0429	0.0129	mg/kg	1		03/24/21 17:16
Vinyl acetate	0.0428 U	0.0857	0.0266	mg/kg	1		03/24/21 17:16
Vinyl chloride	0.000343 U	0.000686	0.000214	mg/kg	1		03/24/21 17:16
Xylenes (total)	0.0321 U	0.0643	0.0195	mg/kg	1		03/24/21 17:16
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/24/21 17:16
4-Bromofluorobenzene (surr)	92.5	55-151		%	1		03/24/21 17:16
Toluene-d8 (surr)	97.9	85-116		%	1		03/24/21 17:16

## Results of SB10-2

Client Sample ID: **SB10-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172022  
Lab Project ID: 1211172

Collection Date: 03/10/21 17:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.1  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 17:16  
Container ID: 1211172022-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 17:50  
Prep Initial Wt./Vol.: 72.59 g  
Prep Extract Vol: 29.2795 mL



Results of **SB11-1**

Client Sample ID: **SB11-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172023  
Lab Project ID: 1211172

Collection Date: 03/12/21 17:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	11.4 J	21.0	6.50	mg/kg	1		03/23/21 19:03

**Surrogates**

5a Androstane (surr)	85.9	50-150		%	1		03/23/21 19:03
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:03  
Container ID: 1211172023-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.182 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	52.5 U	105	45.1	mg/kg	1		03/23/21 19:03

**Surrogates**

n-Triacontane-d62 (surr)	82.4	50-150		%	1		03/23/21 19:03
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:03  
Container ID: 1211172023-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.182 g  
Prep Extract Vol: 5 mL

## Results of SB11-1

Client Sample ID: **SB11-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172023  
 Lab Project ID: 1211172

Collection Date: 03/12/21 17:30  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.8  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.824 J	2.67	0.802	mg/kg	1		03/22/21 19:51
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	95.8	50-150		%	1		03/22/21 19:51

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 19:51  
 Container ID: 1211172023-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/12/21 17:30  
 Prep Initial Wt./Vol.: 55.055 g  
 Prep Extract Vol: 27.8903 mL





Results of SB11-1

Client Sample ID: SB11-1
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172023
Lab Project ID: 1211172

Collection Date: 03/12/21 17:30
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):94.8
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of SB11-1**

Client Sample ID: **SB11-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172023  
 Lab Project ID: 1211172

Collection Date: 03/12/21 17:30  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.8  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.107 U	0.214	0.0663	mg/kg	1		03/24/21 19:04
Chloroform	0.00214 U	0.00428	0.00107	mg/kg	1		03/24/21 19:04
Chloromethane	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
cis-1,2-Dichloroethene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
cis-1,3-Dichloropropene	0.00670 U	0.0134	0.00417	mg/kg	1		03/24/21 19:04
Dibromochloromethane	0.00267 U	0.00535	0.00160	mg/kg	1		03/24/21 19:04
Dibromomethane	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
Dichlorodifluoromethane	0.0267 U	0.0535	0.0160	mg/kg	1		03/24/21 19:04
Ethylbenzene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
Freon-113	0.0535 U	0.107	0.0331	mg/kg	1		03/24/21 19:04
Hexachlorobutadiene	0.0107 U	0.0214	0.00663	mg/kg	1		03/24/21 19:04
Isopropylbenzene (Cumene)	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
Methylene chloride	0.0535 U	0.107	0.0331	mg/kg	1		03/24/21 19:04
Methyl-t-butyl ether	0.0535 U	0.107	0.0331	mg/kg	1		03/24/21 19:04
Naphthalene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
n-Butylbenzene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
n-Propylbenzene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
o-Xylene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
P & M -Xylene	0.0267 U	0.0535	0.0160	mg/kg	1		03/24/21 19:04
sec-Butylbenzene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
Styrene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
tert-Butylbenzene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
Tetrachloroethene	0.00670 U	0.0134	0.00417	mg/kg	1		03/24/21 19:04
Toluene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
trans-1,2-Dichloroethene	0.0134 U	0.0267	0.00834	mg/kg	1		03/24/21 19:04
trans-1,3-Dichloropropene	0.00670 U	0.0134	0.00417	mg/kg	1		03/24/21 19:04
Trichloroethene	0.00267 U	0.00535	0.00160	mg/kg	1		03/24/21 19:04
Trichlorofluoromethane	0.0267 U	0.0535	0.0160	mg/kg	1		03/24/21 19:04
Vinyl acetate	0.0535 U	0.107	0.0331	mg/kg	1		03/24/21 19:04
Vinyl chloride	0.000427 U	0.000855	0.000267	mg/kg	1		03/24/21 19:04
Xylenes (total)	0.0401 U	0.0802	0.0244	mg/kg	1		03/24/21 19:04
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/24/21 19:04
4-Bromofluorobenzene (surr)	88	55-151		%	1		03/24/21 19:04
Toluene-d8 (surr)	97.8	85-116		%	1		03/24/21 19:04



Results of **SB11-1**

Client Sample ID: **SB11-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172023  
Lab Project ID: 1211172

Collection Date: 03/12/21 17:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.8  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 19:04  
Container ID: 1211172023-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 17:30  
Prep Initial Wt./Vol.: 55.055 g  
Prep Extract Vol: 27.8903 mL



Results of **SB11-2**

Client Sample ID: **SB11-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172024  
Lab Project ID: 1211172

Collection Date: 03/12/21 17:51  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	8.19 J	21.6	6.69	mg/kg	1		03/23/21 19:13

**Surrogates**

5a Androstane (surr)	78.6	50-150		%	1		03/23/21 19:13
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:13  
Container ID: 1211172024-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.399 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	54.0 U	108	46.4	mg/kg	1		03/23/21 19:13

**Surrogates**

n-Triacontane-d62 (surr)	75.4	50-150		%	1		03/23/21 19:13
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:13  
Container ID: 1211172024-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.399 g  
Prep Extract Vol: 5 mL



Results of **SB11-2**

Client Sample ID: **SB11-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172024  
Lab Project ID: 1211172

Collection Date: 03/12/21 17:51  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.4  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.773 J	2.53	0.760	mg/kg	1		03/22/21 20:09
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	94.9	50-150		%	1		03/22/21 20:09

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/22/21 20:09  
Container ID: 1211172024-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 17:51  
Prep Initial Wt./Vol.: 66.292 g  
Prep Extract Vol: 30.6988 mL



Results of **SB11-2**

Client Sample ID: **SB11-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172024  
 Lab Project ID: 1211172

Collection Date: 03/12/21 17:51  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):91.4  
 Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0101 U	0.0203	0.00628	mg/kg	1		03/24/21 19:19
1,1,1-Trichloroethane	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
1,1,2,2-Tetrachloroethane	0.00102 U	0.00203	0.000628	mg/kg	1		03/24/21 19:19
1,1,2-Trichloroethane	0.000405 U	0.000811	0.000253	mg/kg	1		03/24/21 19:19
1,1-Dichloroethane	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
1,1-Dichloroethene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
1,1-Dichloropropene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
1,2,3-Trichlorobenzene	0.0254 U	0.0507	0.0152	mg/kg	1		03/24/21 19:19
1,2,3-Trichloropropane	0.00102 U	0.00203	0.000628	mg/kg	1		03/24/21 19:19
1,2,4-Trichlorobenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
1,2,4-Trimethylbenzene	0.0254 U	0.0507	0.0152	mg/kg	1		03/24/21 19:19
1,2-Dibromo-3-chloropropane	0.0505 U	0.101	0.0314	mg/kg	1		03/24/21 19:19
1,2-Dibromoethane	0.000505 U	0.00101	0.000405	mg/kg	1		03/24/21 19:19
1,2-Dichlorobenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
1,2-Dichloroethane	0.00102 U	0.00203	0.000709	mg/kg	1		03/24/21 19:19
1,2-Dichloropropane	0.00505 U	0.0101	0.00314	mg/kg	1		03/24/21 19:19
1,3,5-Trimethylbenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
1,3-Dichlorobenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
1,3-Dichloropropane	0.00505 U	0.0101	0.00314	mg/kg	1		03/24/21 19:19
1,4-Dichlorobenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
2,2-Dichloropropane	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
2-Butanone (MEK)	0.127 U	0.253	0.0790	mg/kg	1		03/24/21 19:19
2-Chlorotoluene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
2-Hexanone	0.0505 U	0.101	0.0314	mg/kg	1		03/24/21 19:19
4-Chlorotoluene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
4-Isopropyltoluene	0.0505 U	0.101	0.0253	mg/kg	1		03/24/21 19:19
4-Methyl-2-pentanone (MIBK)	0.127 U	0.253	0.0790	mg/kg	1		03/24/21 19:19
Acetone	0.127 U	0.253	0.0790	mg/kg	1		03/24/21 19:19
Benzene	0.00635 U	0.0127	0.00395	mg/kg	1		03/24/21 19:19
Bromobenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
Bromochloromethane	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
Bromodichloromethane	0.00102 U	0.00203	0.000628	mg/kg	1		03/24/21 19:19
Bromoform	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
Bromomethane	0.0101 U	0.0203	0.00628	mg/kg	1		03/24/21 19:19
Carbon disulfide	0.0505 U	0.101	0.0314	mg/kg	1		03/24/21 19:19
Carbon tetrachloride	0.00635 U	0.0127	0.00395	mg/kg	1		03/24/21 19:19
Chlorobenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19



**Results of SB11-2**

Client Sample ID: **SB11-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172024  
 Lab Project ID: 1211172

Collection Date: 03/12/21 17:51  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):91.4  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.102 U	0.203	0.0628	mg/kg	1		03/24/21 19:19
Chloroform	0.00202 U	0.00405	0.00101	mg/kg	1		03/24/21 19:19
Chloromethane	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
cis-1,2-Dichloroethene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
cis-1,3-Dichloropropene	0.00635 U	0.0127	0.00395	mg/kg	1		03/24/21 19:19
Dibromochloromethane	0.00253 U	0.00507	0.00152	mg/kg	1		03/24/21 19:19
Dibromomethane	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
Dichlorodifluoromethane	0.0254 U	0.0507	0.0152	mg/kg	1		03/24/21 19:19
Ethylbenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
Freon-113	0.0505 U	0.101	0.0314	mg/kg	1		03/24/21 19:19
Hexachlorobutadiene	0.0101 U	0.0203	0.00628	mg/kg	1		03/24/21 19:19
Isopropylbenzene (Cumene)	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
Methylene chloride	0.0505 U	0.101	0.0314	mg/kg	1		03/24/21 19:19
Methyl-t-butyl ether	0.0505 U	0.101	0.0314	mg/kg	1		03/24/21 19:19
Naphthalene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
n-Butylbenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
n-Propylbenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
o-Xylene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
P & M -Xylene	0.0254 U	0.0507	0.0152	mg/kg	1		03/24/21 19:19
sec-Butylbenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
Styrene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
tert-Butylbenzene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
Tetrachloroethene	0.00635 U	0.0127	0.00395	mg/kg	1		03/24/21 19:19
Toluene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
trans-1,2-Dichloroethene	0.0127 U	0.0253	0.00790	mg/kg	1		03/24/21 19:19
trans-1,3-Dichloropropene	0.00635 U	0.0127	0.00395	mg/kg	1		03/24/21 19:19
Trichloroethene	0.00253 U	0.00507	0.00152	mg/kg	1		03/24/21 19:19
Trichlorofluoromethane	0.0254 U	0.0507	0.0152	mg/kg	1		03/24/21 19:19
Vinyl acetate	0.0505 U	0.101	0.0314	mg/kg	1		03/24/21 19:19
Vinyl chloride	0.000405 U	0.000811	0.000253	mg/kg	1		03/24/21 19:19
Xylenes (total)	0.0380 U	0.0760	0.0231	mg/kg	1		03/24/21 19:19
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/24/21 19:19
4-Bromofluorobenzene (surr)	84.6	55-151		%	1		03/24/21 19:19
Toluene-d8 (surr)	97.2	85-116		%	1		03/24/21 19:19

## Results of SB11-2

Client Sample ID: **SB11-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172024  
Lab Project ID: 1211172

Collection Date: 03/12/21 17:51  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.4  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 19:19  
Container ID: 1211172024-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 17:51  
Prep Initial Wt./Vol.: 66.292 g  
Prep Extract Vol: 30.6988 mL





Results of **SB12-1**

Client Sample ID: **SB12-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172025  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.2  
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
2-Methylnaphthalene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Acenaphthene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Acenaphthylene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Anthracene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Benzo(a)Anthracene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Benzo[a]pyrene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Benzo[b]Fluoranthene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Benzo[g,h,i]perylene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Benzo[k]fluoranthene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Chrysene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Dibenzo[a,h]anthracene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Fluoranthene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Fluorene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Indeno[1,2,3-c,d] pyrene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Naphthalene	0.0117 U	0.0234	0.00586	mg/kg	1		03/29/21 19:50
Phenanthrene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
Pyrene	0.0147 U	0.0293	0.00732	mg/kg	1		03/29/21 19:50
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	61.4	58-103		%	1		03/29/21 19:50
Fluoranthene-d10 (surr)	59.9	54-113		%	1		03/29/21 19:50

**Batch Information**

Analytical Batch: XMS12541  
Analytical Method: 8270D SIM (PAH)  
Analyst: CDM  
Analytical Date/Time: 03/29/21 19:50  
Container ID: 1211172025-B

Prep Batch: XXX44556  
Prep Method: SW3550C  
Prep Date/Time: 03/26/21 08:52  
Prep Initial Wt./Vol.: 22.535 g  
Prep Extract Vol: 5 mL

## Results of SB12-1

Client Sample ID: **SB12-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172025  
 Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):85.2  
 Location:

## Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	38.9	23.4	7.27	mg/kg	1		03/23/21 19:43

### Surrogates

5a Androstane (surr)	80.4	50-150		%	1		03/23/21 19:43
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## Batch Information

Analytical Batch: XFC15880  
 Analytical Method: AK102  
 Analyst: IVM  
 Analytical Date/Time: 03/23/21 19:43  
 Container ID: 1211172025-B

Prep Batch: XXX44543  
 Prep Method: SW3550C  
 Prep Date/Time: 03/23/21 13:15  
 Prep Initial Wt./Vol.: 30.036 g  
 Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	387	117	50.4	mg/kg	1		03/23/21 19:43

### Surrogates

n-Triacontane-d62 (surr)	83.1	50-150		%	1		03/23/21 19:43
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## Batch Information

Analytical Batch: XFC15880  
 Analytical Method: AK103  
 Analyst: IVM  
 Analytical Date/Time: 03/23/21 19:43  
 Container ID: 1211172025-B

Prep Batch: XXX44543  
 Prep Method: SW3550C  
 Prep Date/Time: 03/23/21 13:15  
 Prep Initial Wt./Vol.: 30.036 g  
 Prep Extract Vol: 5 mL



Results of **SB12-1**

Client Sample ID: **SB12-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172025  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.2  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.84 U	3.67	1.10	mg/kg	1		03/22/21 20:26
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	87.8	50-150		%	1		03/22/21 20:26

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/22/21 20:26  
Container ID: 1211172025-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 14:12  
Prep Initial Wt./Vol.: 52.359 g  
Prep Extract Vol: 32.7441 mL



Results of **SB12-1**

Client Sample ID: **SB12-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172025  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.2  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0147 U	0.0294	0.00910	mg/kg	1		03/24/21 17:32
1,1,1-Trichloroethane	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
1,1,2,2-Tetrachloroethane	0.00147 U	0.00294	0.000910	mg/kg	1		03/24/21 17:32
1,1,2-Trichloroethane	0.000585 U	0.00117	0.000367	mg/kg	1		03/24/21 17:32
1,1-Dichloroethane	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
1,1-Dichloroethene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
1,1-Dichloropropene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
1,2,3-Trichlorobenzene	0.0367 U	0.0734	0.0220	mg/kg	1		03/24/21 17:32
1,2,3-Trichloropropane	0.00147 U	0.00294	0.000910	mg/kg	1		03/24/21 17:32
1,2,4-Trichlorobenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
1,2,4-Trimethylbenzene	0.0367 U	0.0734	0.0220	mg/kg	1		03/24/21 17:32
1,2-Dibromo-3-chloropropane	0.0735 U	0.147	0.0455	mg/kg	1		03/24/21 17:32
1,2-Dibromoethane	0.000735 U	0.00147	0.000587	mg/kg	1		03/24/21 17:32
1,2-Dichlorobenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
1,2-Dichloroethane	0.00147 U	0.00294	0.00103	mg/kg	1		03/24/21 17:32
1,2-Dichloropropane	0.00735 U	0.0147	0.00455	mg/kg	1		03/24/21 17:32
1,3,5-Trimethylbenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
1,3-Dichlorobenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
1,3-Dichloropropane	0.00735 U	0.0147	0.00455	mg/kg	1		03/24/21 17:32
1,4-Dichlorobenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
2,2-Dichloropropane	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
2-Butanone (MEK)	0.184 U	0.367	0.114	mg/kg	1		03/24/21 17:32
2-Chlorotoluene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
2-Hexanone	0.0735 U	0.147	0.0455	mg/kg	1		03/24/21 17:32
4-Chlorotoluene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
4-Isopropyltoluene	0.0735 U	0.147	0.0367	mg/kg	1		03/24/21 17:32
4-Methyl-2-pentanone (MIBK)	0.184 U	0.367	0.114	mg/kg	1		03/24/21 17:32
Acetone	0.184 U	0.367	0.114	mg/kg	1		03/24/21 17:32
Benzene	0.00915 U	0.0183	0.00572	mg/kg	1		03/24/21 17:32
Bromobenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
Bromochloromethane	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
Bromodichloromethane	0.00147 U	0.00294	0.000910	mg/kg	1		03/24/21 17:32
Bromoform	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
Bromomethane	0.0147 U	0.0294	0.00910	mg/kg	1		03/24/21 17:32
Carbon disulfide	0.0735 U	0.147	0.0455	mg/kg	1		03/24/21 17:32
Carbon tetrachloride	0.00915 U	0.0183	0.00572	mg/kg	1		03/24/21 17:32
Chlorobenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32



Results of **SB12-1**

Client Sample ID: **SB12-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172025  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.2  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.147 U	0.294	0.0910	mg/kg	1		03/24/21 17:32
Chloroform	0.00294 U	0.00587	0.00147	mg/kg	1		03/24/21 17:32
Chloromethane	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
cis-1,2-Dichloroethene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
cis-1,3-Dichloropropene	0.00915 U	0.0183	0.00572	mg/kg	1		03/24/21 17:32
Dibromochloromethane	0.00367 U	0.00734	0.00220	mg/kg	1		03/24/21 17:32
Dibromomethane	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
Dichlorodifluoromethane	0.0367 U	0.0734	0.0220	mg/kg	1		03/24/21 17:32
Ethylbenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
Freon-113	0.0735 U	0.147	0.0455	mg/kg	1		03/24/21 17:32
Hexachlorobutadiene	0.0147 U	0.0294	0.00910	mg/kg	1		03/24/21 17:32
Isopropylbenzene (Cumene)	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
Methylene chloride	0.0735 U	0.147	0.0455	mg/kg	1		03/24/21 17:32
Methyl-t-butyl ether	0.0735 U	0.147	0.0455	mg/kg	1		03/24/21 17:32
Naphthalene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
n-Butylbenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
n-Propylbenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
o-Xylene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
P & M -Xylene	0.0367 U	0.0734	0.0220	mg/kg	1		03/24/21 17:32
sec-Butylbenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
Styrene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
tert-Butylbenzene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
Tetrachloroethene	0.00915 U	0.0183	0.00572	mg/kg	1		03/24/21 17:32
Toluene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
trans-1,2-Dichloroethene	0.0184 U	0.0367	0.0114	mg/kg	1		03/24/21 17:32
trans-1,3-Dichloropropene	0.00915 U	0.0183	0.00572	mg/kg	1		03/24/21 17:32
Trichloroethene	0.00367 U	0.00734	0.00220	mg/kg	1		03/24/21 17:32
Trichlorofluoromethane	0.0367 U	0.0734	0.0220	mg/kg	1		03/24/21 17:32
Vinyl acetate	0.0735 U	0.147	0.0455	mg/kg	1		03/24/21 17:32
Vinyl chloride	0.000585 U	0.00117	0.000367	mg/kg	1		03/24/21 17:32
Xylenes (total)	0.0550 U	0.110	0.0335	mg/kg	1		03/24/21 17:32
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/24/21 17:32
4-Bromofluorobenzene (surr)	80.9	55-151		%	1		03/24/21 17:32
Toluene-d8 (surr)	98.3	85-116		%	1		03/24/21 17:32

## Results of SB12-1

Client Sample ID: **SB12-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172025  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.2  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 17:32  
Container ID: 1211172025-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 14:12  
Prep Initial Wt./Vol.: 52.359 g  
Prep Extract Vol: 32.7441 mL



Results of **SB12-2**

Client Sample ID: **SB12-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172026  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:55  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.5 U	21.0	6.50	mg/kg	1		03/23/21 19:23

**Surrogates**

5a Androstane (surr)	100	50-150		%	1		03/23/21 19:23
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:23  
Container ID: 1211172026-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.315 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	52.5 U	105	45.1	mg/kg	1		03/23/21 19:23

**Surrogates**

n-Triacontane-d62 (surr)	96.4	50-150		%	1		03/23/21 19:23
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**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/23/21 19:23  
Container ID: 1211172026-B

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 03/23/21 13:15  
Prep Initial Wt./Vol.: 30.315 g  
Prep Extract Vol: 5 mL



Results of **SB12-2**

Client Sample ID: **SB12-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172026  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:55  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.796 J	2.19	0.658	mg/kg	1		03/22/21 20:44
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	99.6	50-150		%	1		03/22/21 20:44

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/22/21 20:44  
Container ID: 1211172026-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 14:55  
Prep Initial Wt./Vol.: 69.693 g  
Prep Extract Vol: 28.8731 mL





Results of **SB12-2**

Client Sample ID: **SB12-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172026  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:55  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00875 U	0.0175	0.00544	mg/kg	1		03/24/21 17:47
1,1,1-Trichloroethane	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
1,1,2,2-Tetrachloroethane	0.000875 U	0.00175	0.000544	mg/kg	1		03/24/21 17:47
1,1,2-Trichloroethane	0.000351 U	0.000702	0.000219	mg/kg	1		03/24/21 17:47
1,1-Dichloroethane	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
1,1-Dichloroethene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
1,1-Dichloropropene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
1,2,3-Trichlorobenzene	0.0220 U	0.0439	0.0132	mg/kg	1		03/24/21 17:47
1,2,3-Trichloropropane	0.000875 U	0.00175	0.000544	mg/kg	1		03/24/21 17:47
1,2,4-Trichlorobenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
1,2,4-Trimethylbenzene	0.0220 U	0.0439	0.0132	mg/kg	1		03/24/21 17:47
1,2-Dibromo-3-chloropropane	0.0439 U	0.0877	0.0272	mg/kg	1		03/24/21 17:47
1,2-Dibromoethane	0.000438 U	0.000877	0.000351	mg/kg	1		03/24/21 17:47
1,2-Dichlorobenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
1,2-Dichloroethane	0.000875 U	0.00175	0.000614	mg/kg	1		03/24/21 17:47
1,2-Dichloropropane	0.00439 U	0.00877	0.00272	mg/kg	1		03/24/21 17:47
1,3,5-Trimethylbenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
1,3-Dichlorobenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
1,3-Dichloropropane	0.00439 U	0.00877	0.00272	mg/kg	1		03/24/21 17:47
1,4-Dichlorobenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
2,2-Dichloropropane	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
2-Butanone (MEK)	0.110 U	0.219	0.0684	mg/kg	1		03/24/21 17:47
2-Chlorotoluene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
2-Hexanone	0.0439 U	0.0877	0.0272	mg/kg	1		03/24/21 17:47
4-Chlorotoluene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
4-Isopropyltoluene	0.0439 U	0.0877	0.0219	mg/kg	1		03/24/21 17:47
4-Methyl-2-pentanone (MIBK)	0.110 U	0.219	0.0684	mg/kg	1		03/24/21 17:47
Acetone	0.110 U	0.219	0.0684	mg/kg	1		03/24/21 17:47
Benzene	0.00550 U	0.0110	0.00342	mg/kg	1		03/24/21 17:47
Bromobenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
Bromochloromethane	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
Bromodichloromethane	0.000875 U	0.00175	0.000544	mg/kg	1		03/24/21 17:47
Bromoform	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
Bromomethane	0.00875 U	0.0175	0.00544	mg/kg	1		03/24/21 17:47
Carbon disulfide	0.0439 U	0.0877	0.0272	mg/kg	1		03/24/21 17:47
Carbon tetrachloride	0.00550 U	0.0110	0.00342	mg/kg	1		03/24/21 17:47
Chlorobenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47



Results of **SB12-2**

Client Sample ID: **SB12-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172026  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:55  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0875 U	0.175	0.0544	mg/kg	1		03/24/21 17:47
Chloroform	0.00176 U	0.00351	0.000877	mg/kg	1		03/24/21 17:47
Chloromethane	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
cis-1,2-Dichloroethene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
cis-1,3-Dichloropropene	0.00550 U	0.0110	0.00342	mg/kg	1		03/24/21 17:47
Dibromochloromethane	0.00219 U	0.00439	0.00132	mg/kg	1		03/24/21 17:47
Dibromomethane	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
Dichlorodifluoromethane	0.0220 U	0.0439	0.0132	mg/kg	1		03/24/21 17:47
Ethylbenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
Freon-113	0.0439 U	0.0877	0.0272	mg/kg	1		03/24/21 17:47
Hexachlorobutadiene	0.00875 U	0.0175	0.00544	mg/kg	1		03/24/21 17:47
Isopropylbenzene (Cumene)	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
Methylene chloride	0.0439 U	0.0877	0.0272	mg/kg	1		03/24/21 17:47
Methyl-t-butyl ether	0.0439 U	0.0877	0.0272	mg/kg	1		03/24/21 17:47
Naphthalene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
n-Butylbenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
n-Propylbenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
o-Xylene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
P & M -Xylene	0.0220 U	0.0439	0.0132	mg/kg	1		03/24/21 17:47
sec-Butylbenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
Styrene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
tert-Butylbenzene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
Tetrachloroethene	0.00550 U	0.0110	0.00342	mg/kg	1		03/24/21 17:47
Toluene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
trans-1,2-Dichloroethene	0.0110 U	0.0219	0.00684	mg/kg	1		03/24/21 17:47
trans-1,3-Dichloropropene	0.00550 U	0.0110	0.00342	mg/kg	1		03/24/21 17:47
Trichloroethene	0.00219 U	0.00439	0.00132	mg/kg	1		03/24/21 17:47
Trichlorofluoromethane	0.0220 U	0.0439	0.0132	mg/kg	1		03/24/21 17:47
Vinyl acetate	0.0439 U	0.0877	0.0272	mg/kg	1		03/24/21 17:47
Vinyl chloride	0.000351 U	0.000702	0.000219	mg/kg	1		03/24/21 17:47
Xylenes (total)	0.0329 U	0.0658	0.0200	mg/kg	1		03/24/21 17:47
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/24/21 17:47
4-Bromofluorobenzene (surr)	90	55-151		%	1		03/24/21 17:47
Toluene-d8 (surr)	97.5	85-116		%	1		03/24/21 17:47

## Results of SB12-2

Client Sample ID: **SB12-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172026  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:55  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 17:47  
Container ID: 1211172026-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 14:55  
Prep Initial Wt./Vol.: 69.693 g  
Prep Extract Vol: 28.8731 mL



Results of **SB13-1**

Client Sample ID: **SB13-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172027  
Lab Project ID: 1211172

Collection Date: 03/10/21 15:37  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.2  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	78.6	21.9	6.78	mg/kg	1		03/24/21 20:49

**Surrogates**

5a Androstane (surr)	99.9	50-150		%	1		03/24/21 20:49
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:49  
Container ID: 1211172027-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.416 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	926	109	47.0	mg/kg	1		03/24/21 20:49

**Surrogates**

n-Triacontane-d62 (surr)	102	50-150		%	1		03/24/21 20:49
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:49  
Container ID: 1211172027-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.416 g  
Prep Extract Vol: 5 mL

## Results of SB13-1

Client Sample ID: **SB13-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172027  
 Lab Project ID: 1211172

Collection Date: 03/10/21 15:37  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):90.2  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.19 J	3.18	0.954	mg/kg	1		03/22/21 21:02
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	95.7	50-150		%	1		03/22/21 21:02

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 21:02  
 Container ID: 1211172027-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/10/21 15:37  
 Prep Initial Wt./Vol.: 52.466 g  
 Prep Extract Vol: 30.1239 mL



Results of **SB13-1**

Client Sample ID: **SB13-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172027  
Lab Project ID: 1211172

Collection Date: 03/10/21 15:37  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.2  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0127 U	0.0255	0.00789	mg/kg	1		03/24/21 18:02
1,1,1-Trichloroethane	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
1,1,2,2-Tetrachloroethane	0.00128 U	0.00255	0.000789	mg/kg	1		03/24/21 18:02
1,1,2-Trichloroethane	0.000510 U	0.00102	0.000318	mg/kg	1		03/24/21 18:02
1,1-Dichloroethane	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
1,1-Dichloroethene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
1,1-Dichloropropene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
1,2,3-Trichlorobenzene	0.0318 U	0.0636	0.0191	mg/kg	1		03/24/21 18:02
1,2,3-Trichloropropane	0.00128 U	0.00255	0.000789	mg/kg	1		03/24/21 18:02
1,2,4-Trichlorobenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
1,2,4-Trimethylbenzene	0.0318 U	0.0636	0.0191	mg/kg	1		03/24/21 18:02
1,2-Dibromo-3-chloropropane	0.0635 U	0.127	0.0395	mg/kg	1		03/24/21 18:02
1,2-Dibromoethane	0.000635 U	0.00127	0.000509	mg/kg	1		03/24/21 18:02
1,2-Dichlorobenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
1,2-Dichloroethane	0.00128 U	0.00255	0.000891	mg/kg	1		03/24/21 18:02
1,2-Dichloropropane	0.00635 U	0.0127	0.00395	mg/kg	1		03/24/21 18:02
1,3,5-Trimethylbenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
1,3-Dichlorobenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
1,3-Dichloropropane	0.00635 U	0.0127	0.00395	mg/kg	1		03/24/21 18:02
1,4-Dichlorobenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
2,2-Dichloropropane	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
2-Butanone (MEK)	0.159 U	0.318	0.0993	mg/kg	1		03/24/21 18:02
2-Chlorotoluene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
2-Hexanone	0.0635 U	0.127	0.0395	mg/kg	1		03/24/21 18:02
4-Chlorotoluene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
4-Isopropyltoluene	0.0635 U	0.127	0.0318	mg/kg	1		03/24/21 18:02
4-Methyl-2-pentanone (MIBK)	0.159 U	0.318	0.0993	mg/kg	1		03/24/21 18:02
Acetone	0.159 U	0.318	0.0993	mg/kg	1		03/24/21 18:02
Benzene	0.00795 U	0.0159	0.00496	mg/kg	1		03/24/21 18:02
Bromobenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
Bromochloromethane	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
Bromodichloromethane	0.00128 U	0.00255	0.000789	mg/kg	1		03/24/21 18:02
Bromoform	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
Bromomethane	0.0127 U	0.0255	0.00789	mg/kg	1		03/24/21 18:02
Carbon disulfide	0.0635 U	0.127	0.0395	mg/kg	1		03/24/21 18:02
Carbon tetrachloride	0.00795 U	0.0159	0.00496	mg/kg	1		03/24/21 18:02
Chlorobenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02



Results of **SB13-1**

Client Sample ID: **SB13-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172027  
 Lab Project ID: 1211172

Collection Date: 03/10/21 15:37  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):90.2  
 Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.128 U	0.255	0.0789	mg/kg	1		03/24/21 18:02
Chloroform	0.00255 U	0.00509	0.00127	mg/kg	1		03/24/21 18:02
Chloromethane	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
cis-1,2-Dichloroethene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
cis-1,3-Dichloropropene	0.00795 U	0.0159	0.00496	mg/kg	1		03/24/21 18:02
Dibromochloromethane	0.00318 U	0.00636	0.00191	mg/kg	1		03/24/21 18:02
Dibromomethane	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
Dichlorodifluoromethane	0.0318 U	0.0636	0.0191	mg/kg	1		03/24/21 18:02
Ethylbenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
Freon-113	0.0635 U	0.127	0.0395	mg/kg	1		03/24/21 18:02
Hexachlorobutadiene	0.0127 U	0.0255	0.00789	mg/kg	1		03/24/21 18:02
Isopropylbenzene (Cumene)	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
Methylene chloride	0.0635 U	0.127	0.0395	mg/kg	1		03/24/21 18:02
Methyl-t-butyl ether	0.0635 U	0.127	0.0395	mg/kg	1		03/24/21 18:02
Naphthalene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
n-Butylbenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
n-Propylbenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
o-Xylene	0.0111 J	0.0318	0.00993	mg/kg	1		03/24/21 18:02
P & M -Xylene	0.0305 J	0.0636	0.0191	mg/kg	1		03/24/21 18:02
sec-Butylbenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
Styrene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
tert-Butylbenzene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
Tetrachloroethene	0.00795 U	0.0159	0.00496	mg/kg	1		03/24/21 18:02
Toluene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
trans-1,2-Dichloroethene	0.0159 U	0.0318	0.00993	mg/kg	1		03/24/21 18:02
trans-1,3-Dichloropropene	0.00795 U	0.0159	0.00496	mg/kg	1		03/24/21 18:02
Trichloroethene	0.00318 U	0.00636	0.00191	mg/kg	1		03/24/21 18:02
Trichlorofluoromethane	0.0318 U	0.0636	0.0191	mg/kg	1		03/24/21 18:02
Vinyl acetate	0.0635 U	0.127	0.0395	mg/kg	1		03/24/21 18:02
Vinyl chloride	0.000510 U	0.00102	0.000318	mg/kg	1		03/24/21 18:02
Xylenes (total)	0.0417 J	0.0954	0.0290	mg/kg	1		03/24/21 18:02
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/24/21 18:02
4-Bromofluorobenzene (surr)	85.8	55-151		%	1		03/24/21 18:02
Toluene-d8 (surr)	99.2	85-116		%	1		03/24/21 18:02

## Results of SB13-1

Client Sample ID: **SB13-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172027  
Lab Project ID: 1211172

Collection Date: 03/10/21 15:37  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.2  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 18:02  
Container ID: 1211172027-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 15:37  
Prep Initial Wt./Vol.: 52.466 g  
Prep Extract Vol: 30.1239 mL





Results of **SB13-2**

Client Sample ID: **SB13-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172028  
Lab Project ID: 1211172

Collection Date: 03/10/21 16:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.7  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.3 U	20.6	6.40	mg/kg	1		03/24/21 18:31
<b>Surrogates</b>							
5a Androstane (surr)	101	50-150		%	1		03/24/21 18:31

**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 18:31  
Container ID: 1211172028-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.358 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	51.5 U	103	44.4	mg/kg	1		03/24/21 18:31
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	104	50-150		%	1		03/24/21 18:31

**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 18:31  
Container ID: 1211172028-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.358 g  
Prep Extract Vol: 5 mL

## Results of SB13-2

Client Sample ID: **SB13-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172028  
 Lab Project ID: 1211172

Collection Date: 03/10/21 16:15  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):95.7  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.736 J	2.08	0.624	mg/kg	1		03/22/21 21:19
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	99.3	50-150		%	1		03/22/21 21:19

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 21:19  
 Container ID: 1211172028-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/10/21 16:15  
 Prep Initial Wt./Vol.: 70.336 g  
 Prep Extract Vol: 28.0142 mL



Results of **SB13-2**

Client Sample ID: **SB13-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172028  
Lab Project ID: 1211172

Collection Date: 03/10/21 16:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.7  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00830 U	0.0166	0.00516	mg/kg	1		03/24/21 18:18
1,1,1-Trichloroethane	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
1,1,2,2-Tetrachloroethane	0.000830 U	0.00166	0.000516	mg/kg	1		03/24/21 18:18
1,1,2-Trichloroethane	0.000333 U	0.000666	0.000208	mg/kg	1		03/24/21 18:18
1,1-Dichloroethane	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
1,1-Dichloroethene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
1,1-Dichloropropene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
1,2,3-Trichlorobenzene	0.0208 U	0.0416	0.0125	mg/kg	1		03/24/21 18:18
1,2,3-Trichloropropane	0.000830 U	0.00166	0.000516	mg/kg	1		03/24/21 18:18
1,2,4-Trichlorobenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
1,2,4-Trimethylbenzene	0.0208 U	0.0416	0.0125	mg/kg	1		03/24/21 18:18
1,2-Dibromo-3-chloropropane	0.0416 U	0.0832	0.0258	mg/kg	1		03/24/21 18:18
1,2-Dibromoethane	0.000416 U	0.000832	0.000333	mg/kg	1		03/24/21 18:18
1,2-Dichlorobenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
1,2-Dichloroethane	0.000830 U	0.00166	0.000583	mg/kg	1		03/24/21 18:18
1,2-Dichloropropane	0.00416 U	0.00832	0.00258	mg/kg	1		03/24/21 18:18
1,3,5-Trimethylbenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
1,3-Dichlorobenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
1,3-Dichloropropane	0.00416 U	0.00832	0.00258	mg/kg	1		03/24/21 18:18
1,4-Dichlorobenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
2,2-Dichloropropane	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
2-Butanone (MEK)	0.104 U	0.208	0.0649	mg/kg	1		03/24/21 18:18
2-Chlorotoluene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
2-Hexanone	0.0416 U	0.0832	0.0258	mg/kg	1		03/24/21 18:18
4-Chlorotoluene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
4-Isopropyltoluene	0.0416 U	0.0832	0.0208	mg/kg	1		03/24/21 18:18
4-Methyl-2-pentanone (MIBK)	0.104 U	0.208	0.0649	mg/kg	1		03/24/21 18:18
Acetone	0.104 U	0.208	0.0649	mg/kg	1		03/24/21 18:18
Benzene	0.00520 U	0.0104	0.00325	mg/kg	1		03/24/21 18:18
Bromobenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
Bromochloromethane	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
Bromodichloromethane	0.000830 U	0.00166	0.000516	mg/kg	1		03/24/21 18:18
Bromoform	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
Bromomethane	0.00830 U	0.0166	0.00516	mg/kg	1		03/24/21 18:18
Carbon disulfide	0.0416 U	0.0832	0.0258	mg/kg	1		03/24/21 18:18
Carbon tetrachloride	0.00520 U	0.0104	0.00325	mg/kg	1		03/24/21 18:18
Chlorobenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18



Results of **SB13-2**

Client Sample ID: **SB13-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172028  
Lab Project ID: 1211172

Collection Date: 03/10/21 16:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.7  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0830 U	0.166	0.0516	mg/kg	1		03/24/21 18:18
Chloroform	0.00167 U	0.00333	0.000832	mg/kg	1		03/24/21 18:18
Chloromethane	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
cis-1,2-Dichloroethene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
cis-1,3-Dichloropropene	0.00520 U	0.0104	0.00325	mg/kg	1		03/24/21 18:18
Dibromochloromethane	0.00208 U	0.00416	0.00125	mg/kg	1		03/24/21 18:18
Dibromomethane	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
Dichlorodifluoromethane	0.0208 U	0.0416	0.0125	mg/kg	1		03/24/21 18:18
Ethylbenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
Freon-113	0.0416 U	0.0832	0.0258	mg/kg	1		03/24/21 18:18
Hexachlorobutadiene	0.00830 U	0.0166	0.00516	mg/kg	1		03/24/21 18:18
Isopropylbenzene (Cumene)	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
Methylene chloride	0.0416 U	0.0832	0.0258	mg/kg	1		03/24/21 18:18
Methyl-t-butyl ether	0.0416 U	0.0832	0.0258	mg/kg	1		03/24/21 18:18
Naphthalene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
n-Butylbenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
n-Propylbenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
o-Xylene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
P & M -Xylene	0.0208 U	0.0416	0.0125	mg/kg	1		03/24/21 18:18
sec-Butylbenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
Styrene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
tert-Butylbenzene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
Tetrachloroethene	0.00520 U	0.0104	0.00325	mg/kg	1		03/24/21 18:18
Toluene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
trans-1,2-Dichloroethene	0.0104 U	0.0208	0.00649	mg/kg	1		03/24/21 18:18
trans-1,3-Dichloropropene	0.00520 U	0.0104	0.00325	mg/kg	1		03/24/21 18:18
Trichloroethene	0.00208 U	0.00416	0.00125	mg/kg	1		03/24/21 18:18
Trichlorofluoromethane	0.0208 U	0.0416	0.0125	mg/kg	1		03/24/21 18:18
Vinyl acetate	0.0416 U	0.0832	0.0258	mg/kg	1		03/24/21 18:18
Vinyl chloride	0.000333 U	0.000666	0.000208	mg/kg	1		03/24/21 18:18
Xylenes (total)	0.0312 U	0.0624	0.0190	mg/kg	1		03/24/21 18:18
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/24/21 18:18
4-Bromofluorobenzene (surr)	90.8	55-151		%	1		03/24/21 18:18
Toluene-d8 (surr)	98.7	85-116		%	1		03/24/21 18:18

## Results of SB13-2

Client Sample ID: **SB13-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172028  
Lab Project ID: 1211172

Collection Date: 03/10/21 16:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):95.7  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 18:18  
Container ID: 1211172028-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 16:15  
Prep Initial Wt./Vol.: 70.336 g  
Prep Extract Vol: 28.0142 mL



Results of **SB14-1**

Client Sample ID: **SB14-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172029  
Lab Project ID: 1211172

Collection Date: 03/12/21 09:18  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.0  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.9 U	21.9	6.78	mg/kg	1		03/24/21 20:10

**Surrogates**

5a Androstane (surr)	88.6	50-150		%	1		03/24/21 20:10
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:10  
Container ID: 1211172029-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.17 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	54.5 U	109	47.0	mg/kg	1		03/24/21 20:10

**Surrogates**

n-Triacontane-d62 (surr)	89.1	50-150		%	1		03/24/21 20:10
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:10  
Container ID: 1211172029-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.17 g  
Prep Extract Vol: 5 mL



Results of **SB14-1**

Client Sample ID: **SB14-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172029  
Lab Project ID: 1211172

Collection Date: 03/12/21 09:18  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.0  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.04 J	3.17	0.951	mg/kg	1		03/22/21 22:48
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	99.6	50-150		%	1		03/22/21 22:48

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/22/21 22:48  
Container ID: 1211172029-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 09:18  
Prep Initial Wt./Vol.: 51.354 g  
Prep Extract Vol: 29.6264 mL



Results of SB14-1

Client Sample ID: SB14-1
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172029
Lab Project ID: 1211172

Collection Date: 03/12/21 09:18
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):91.0
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.





Results of **SB14-1**

Client Sample ID: **SB14-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172029  
 Lab Project ID: 1211172

Collection Date: 03/12/21 09:18  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):91.0  
 Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.127 U	0.254	0.0786	mg/kg	1		03/24/21 19:35
Chloroform	0.00253 U	0.00507	0.00127	mg/kg	1		03/24/21 19:35
Chloromethane	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
cis-1,2-Dichloroethene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
cis-1,3-Dichloropropene	0.00795 U	0.0159	0.00495	mg/kg	1		03/24/21 19:35
Dibromochloromethane	0.00317 U	0.00634	0.00190	mg/kg	1		03/24/21 19:35
Dibromomethane	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
Dichlorodifluoromethane	0.0317 U	0.0634	0.0190	mg/kg	1		03/24/21 19:35
Ethylbenzene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
Freon-113	0.0635 U	0.127	0.0393	mg/kg	1		03/24/21 19:35
Hexachlorobutadiene	0.0127 U	0.0254	0.00786	mg/kg	1		03/24/21 19:35
Isopropylbenzene (Cumene)	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
Methylene chloride	0.0635 U	0.127	0.0393	mg/kg	1		03/24/21 19:35
Methyl-t-butyl ether	0.0635 U	0.127	0.0393	mg/kg	1		03/24/21 19:35
Naphthalene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
n-Butylbenzene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
n-Propylbenzene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
o-Xylene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
P & M -Xylene	0.0317 U	0.0634	0.0190	mg/kg	1		03/24/21 19:35
sec-Butylbenzene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
Styrene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
tert-Butylbenzene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
Tetrachloroethene	0.00795 U	0.0159	0.00495	mg/kg	1		03/24/21 19:35
Toluene	0.0171 J	0.0317	0.00989	mg/kg	1		03/24/21 19:35
trans-1,2-Dichloroethene	0.0159 U	0.0317	0.00989	mg/kg	1		03/24/21 19:35
trans-1,3-Dichloropropene	0.00795 U	0.0159	0.00495	mg/kg	1		03/24/21 19:35
Trichloroethene	0.00317 U	0.00634	0.00190	mg/kg	1		03/24/21 19:35
Trichlorofluoromethane	0.0317 U	0.0634	0.0190	mg/kg	1		03/24/21 19:35
Vinyl acetate	0.0635 U	0.127	0.0393	mg/kg	1		03/24/21 19:35
Vinyl chloride	0.000505 U	0.00101	0.000317	mg/kg	1		03/24/21 19:35
Xylenes (total)	0.0476 U	0.0951	0.0289	mg/kg	1		03/24/21 19:35
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/24/21 19:35
4-Bromofluorobenzene (surr)	88	55-151		%	1		03/24/21 19:35
Toluene-d8 (surr)	97.9	85-116		%	1		03/24/21 19:35



Results of **SB14-1**

Client Sample ID: **SB14-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172029  
Lab Project ID: 1211172

Collection Date: 03/12/21 09:18  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.0  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 19:35  
Container ID: 1211172029-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 09:18  
Prep Initial Wt./Vol.: 51.354 g  
Prep Extract Vol: 29.6264 mL



Results of **SB14-2**

Client Sample ID: **SB14-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172030  
Lab Project ID: 1211172

Collection Date: 03/12/21 09:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):97.3  
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
2-Methylnaphthalene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Acenaphthene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Acenaphthylene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Anthracene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Benzo(a)Anthracene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Benzo[a]pyrene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Benzo[b]Fluoranthene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Benzo[g,h,i]perylene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Benzo[k]fluoranthene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Chrysene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Dibenzo[a,h]anthracene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Fluoranthene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Fluorene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Indeno[1,2,3-c,d] pyrene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Naphthalene	0.0102 U	0.0204	0.00509	mg/kg	1		03/29/21 20:11
Phenanthrene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
Pyrene	0.0127 U	0.0254	0.00636	mg/kg	1		03/29/21 20:11
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	74.7	58-103		%	1		03/29/21 20:11
Fluoranthene-d10 (surr)	72.5	54-113		%	1		03/29/21 20:11

**Batch Information**

Analytical Batch: XMS12541  
Analytical Method: 8270D SIM (PAH)  
Analyst: CDM  
Analytical Date/Time: 03/29/21 20:11  
Container ID: 1211172030-B

Prep Batch: XXX44556  
Prep Method: SW3550C  
Prep Date/Time: 03/26/21 08:52  
Prep Initial Wt./Vol.: 22.716 g  
Prep Extract Vol: 5 mL



Results of **SB14-2**

Client Sample ID: **SB14-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172030  
Lab Project ID: 1211172

Collection Date: 03/12/21 09:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):97.3  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.2 U	20.3	6.29	mg/kg	1		03/24/21 18:41

**Surrogates**

5a Androstane (surr)	93.2	50-150		%	1		03/24/21 18:41
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 18:41  
Container ID: 1211172030-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.375 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	50.5 U	101	43.6	mg/kg	1		03/24/21 18:41

**Surrogates**

n-Triacontane-d62 (surr)	95.1	50-150		%	1		03/24/21 18:41
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 18:41  
Container ID: 1211172030-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.375 g  
Prep Extract Vol: 5 mL

## Results of SB14-2

Client Sample ID: **SB14-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172030  
 Lab Project ID: 1211172

Collection Date: 03/12/21 09:45  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):97.3  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.716 J	2.00	0.599	mg/kg	1		03/22/21 23:06
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	95.9	50-150		%	1		03/22/21 23:06

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 23:06  
 Container ID: 1211172030-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/12/21 09:45  
 Prep Initial Wt./Vol.: 69.017 g  
 Prep Extract Vol: 26.8427 mL



Results of **SB14-2**

Client Sample ID: **SB14-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172030  
Lab Project ID: 1211172

Collection Date: 03/12/21 09:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):97.3  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00800 U	0.0160	0.00496	mg/kg	1		03/24/21 19:50
1,1,1-Trichloroethane	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
1,1,2,2-Tetrachloroethane	0.000800 U	0.00160	0.000496	mg/kg	1		03/24/21 19:50
1,1,2-Trichloroethane	0.000320 U	0.000639	0.000200	mg/kg	1		03/24/21 19:50
1,1-Dichloroethane	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
1,1-Dichloroethene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
1,1-Dichloropropene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
1,2,3-Trichlorobenzene	0.0200 U	0.0400	0.0120	mg/kg	1		03/24/21 19:50
1,2,3-Trichloropropane	0.000800 U	0.00160	0.000496	mg/kg	1		03/24/21 19:50
1,2,4-Trichlorobenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
1,2,4-Trimethylbenzene	0.0200 U	0.0400	0.0120	mg/kg	1		03/24/21 19:50
1,2-Dibromo-3-chloropropane	0.0399 U	0.0799	0.0248	mg/kg	1		03/24/21 19:50
1,2-Dibromoethane	0.000400 U	0.000799	0.000320	mg/kg	1		03/24/21 19:50
1,2-Dichlorobenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
1,2-Dichloroethane	0.000800 U	0.00160	0.000559	mg/kg	1		03/24/21 19:50
1,2-Dichloropropane	0.00400 U	0.00799	0.00248	mg/kg	1		03/24/21 19:50
1,3,5-Trimethylbenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
1,3-Dichlorobenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
1,3-Dichloropropane	0.00400 U	0.00799	0.00248	mg/kg	1		03/24/21 19:50
1,4-Dichlorobenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
2,2-Dichloropropane	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
2-Butanone (MEK)	0.100 U	0.200	0.0623	mg/kg	1		03/24/21 19:50
2-Chlorotoluene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
2-Hexanone	0.0399 U	0.0799	0.0248	mg/kg	1		03/24/21 19:50
4-Chlorotoluene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
4-Isopropyltoluene	0.0399 U	0.0799	0.0200	mg/kg	1		03/24/21 19:50
4-Methyl-2-pentanone (MIBK)	0.100 U	0.200	0.0623	mg/kg	1		03/24/21 19:50
Acetone	0.100 U	0.200	0.0623	mg/kg	1		03/24/21 19:50
Benzene	0.00500 U	0.00999	0.00312	mg/kg	1		03/24/21 19:50
Bromobenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
Bromochloromethane	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
Bromodichloromethane	0.000800 U	0.00160	0.000496	mg/kg	1		03/24/21 19:50
Bromoform	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
Bromomethane	0.00800 U	0.0160	0.00496	mg/kg	1		03/24/21 19:50
Carbon disulfide	0.0399 U	0.0799	0.0248	mg/kg	1		03/24/21 19:50
Carbon tetrachloride	0.00500 U	0.00999	0.00312	mg/kg	1		03/24/21 19:50
Chlorobenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50



Results of **SB14-2**

Client Sample ID: **SB14-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172030  
Lab Project ID: 1211172

Collection Date: 03/12/21 09:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):97.3  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0800 U	0.160	0.0496	mg/kg	1		03/24/21 19:50
Chloroform	0.00160 U	0.00320	0.000799	mg/kg	1		03/24/21 19:50
Chloromethane	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
cis-1,2-Dichloroethene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
cis-1,3-Dichloropropene	0.00500 U	0.00999	0.00312	mg/kg	1		03/24/21 19:50
Dibromochloromethane	0.00200 U	0.00400	0.00120	mg/kg	1		03/24/21 19:50
Dibromomethane	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
Dichlorodifluoromethane	0.0200 U	0.0400	0.0120	mg/kg	1		03/24/21 19:50
Ethylbenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
Freon-113	0.0399 U	0.0799	0.0248	mg/kg	1		03/24/21 19:50
Hexachlorobutadiene	0.00800 U	0.0160	0.00496	mg/kg	1		03/24/21 19:50
Isopropylbenzene (Cumene)	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
Methylene chloride	0.0399 U	0.0799	0.0248	mg/kg	1		03/24/21 19:50
Methyl-t-butyl ether	0.0399 U	0.0799	0.0248	mg/kg	1		03/24/21 19:50
Naphthalene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
n-Butylbenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
n-Propylbenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
o-Xylene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
P & M -Xylene	0.0200 U	0.0400	0.0120	mg/kg	1		03/24/21 19:50
sec-Butylbenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
Styrene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
tert-Butylbenzene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
Tetrachloroethene	0.00500 U	0.00999	0.00312	mg/kg	1		03/24/21 19:50
Toluene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
trans-1,2-Dichloroethene	0.0100 U	0.0200	0.00623	mg/kg	1		03/24/21 19:50
trans-1,3-Dichloropropene	0.00500 U	0.00999	0.00312	mg/kg	1		03/24/21 19:50
Trichloroethene	0.00200 U	0.00400	0.00120	mg/kg	1		03/24/21 19:50
Trichlorofluoromethane	0.0200 U	0.0400	0.0120	mg/kg	1		03/24/21 19:50
Vinyl acetate	0.0399 U	0.0799	0.0248	mg/kg	1		03/24/21 19:50
Vinyl chloride	0.000320 U	0.000639	0.000200	mg/kg	1		03/24/21 19:50
Xylenes (total)	0.0300 U	0.0599	0.0182	mg/kg	1		03/24/21 19:50
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/24/21 19:50
4-Bromofluorobenzene (surr)	89.1	55-151		%	1		03/24/21 19:50
Toluene-d8 (surr)	97.4	85-116		%	1		03/24/21 19:50

## Results of SB14-2

Client Sample ID: **SB14-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172030  
Lab Project ID: 1211172

Collection Date: 03/12/21 09:45  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):97.3  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 19:50  
Container ID: 1211172030-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 09:45  
Prep Initial Wt./Vol.: 69.017 g  
Prep Extract Vol: 26.8427 mL





Results of **SB15-1**

Client Sample ID: **SB15-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172031  
Lab Project ID: 1211172

Collection Date: 03/11/21 12:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	55.0	21.1	6.53	mg/kg	1		03/24/21 20:59

**Surrogates**

5a Androstane (surr)	98.8	50-150		%	1		03/24/21 20:59
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:59  
Container ID: 1211172031-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.165 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	724	105	45.3	mg/kg	1		03/24/21 20:59

**Surrogates**

n-Triacontane-d62 (surr)	97.4	50-150		%	1		03/24/21 20:59
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:59  
Container ID: 1211172031-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.165 g  
Prep Extract Vol: 5 mL

## Results of SB15-1

Client Sample ID: **SB15-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172031  
 Lab Project ID: 1211172

Collection Date: 03/11/21 12:15  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.4  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.655 J	2.06	0.619	mg/kg	1		03/22/21 23:24
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	96.6	50-150		%	1		03/22/21 23:24

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 23:24  
 Container ID: 1211172031-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/11/21 12:15  
 Prep Initial Wt./Vol.: 74.819 g  
 Prep Extract Vol: 29.1643 mL



Results of **SB15-1**

Client Sample ID: **SB15-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172031  
 Lab Project ID: 1211172

Collection Date: 03/11/21 12:15  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.4  
 Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00825 U	0.0165	0.00512	mg/kg	1		03/24/21 18:33
1,1,1-Trichloroethane	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
1,1,2,2-Tetrachloroethane	0.000825 U	0.00165	0.000512	mg/kg	1		03/24/21 18:33
1,1,2-Trichloroethane	0.000330 U	0.000660	0.000206	mg/kg	1		03/24/21 18:33
1,1-Dichloroethane	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
1,1-Dichloroethene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
1,1-Dichloropropene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
1,2,3-Trichlorobenzene	0.0207 U	0.0413	0.0124	mg/kg	1		03/24/21 18:33
1,2,3-Trichloropropane	0.000825 U	0.00165	0.000512	mg/kg	1		03/24/21 18:33
1,2,4-Trichlorobenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
1,2,4-Trimethylbenzene	0.0207 U	0.0413	0.0124	mg/kg	1		03/24/21 18:33
1,2-Dibromo-3-chloropropane	0.0413 U	0.0826	0.0256	mg/kg	1		03/24/21 18:33
1,2-Dibromoethane	0.000413 U	0.000826	0.000330	mg/kg	1		03/24/21 18:33
1,2-Dichlorobenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
1,2-Dichloroethane	0.000825 U	0.00165	0.000578	mg/kg	1		03/24/21 18:33
1,2-Dichloropropane	0.00413 U	0.00826	0.00256	mg/kg	1		03/24/21 18:33
1,3,5-Trimethylbenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
1,3-Dichlorobenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
1,3-Dichloropropane	0.00413 U	0.00826	0.00256	mg/kg	1		03/24/21 18:33
1,4-Dichlorobenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
2,2-Dichloropropane	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
2-Butanone (MEK)	0.103 U	0.206	0.0644	mg/kg	1		03/24/21 18:33
2-Chlorotoluene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
2-Hexanone	0.0413 U	0.0826	0.0256	mg/kg	1		03/24/21 18:33
4-Chlorotoluene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
4-Isopropyltoluene	0.0413 U	0.0826	0.0206	mg/kg	1		03/24/21 18:33
4-Methyl-2-pentanone (MIBK)	0.103 U	0.206	0.0644	mg/kg	1		03/24/21 18:33
Acetone	0.103 U	0.206	0.0644	mg/kg	1		03/24/21 18:33
Benzene	0.00515 U	0.0103	0.00322	mg/kg	1		03/24/21 18:33
Bromobenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
Bromochloromethane	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
Bromodichloromethane	0.000825 U	0.00165	0.000512	mg/kg	1		03/24/21 18:33
Bromoform	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
Bromomethane	0.00825 U	0.0165	0.00512	mg/kg	1		03/24/21 18:33
Carbon disulfide	0.0413 U	0.0826	0.0256	mg/kg	1		03/24/21 18:33
Carbon tetrachloride	0.00515 U	0.0103	0.00322	mg/kg	1		03/24/21 18:33
Chlorobenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33



Results of **SB15-1**

Client Sample ID: **SB15-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172031  
Lab Project ID: 1211172

Collection Date: 03/11/21 12:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0825 U	0.165	0.0512	mg/kg	1		03/24/21 18:33
Chloroform	0.00165 U	0.00330	0.000826	mg/kg	1		03/24/21 18:33
Chloromethane	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
cis-1,2-Dichloroethene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
cis-1,3-Dichloropropene	0.00515 U	0.0103	0.00322	mg/kg	1		03/24/21 18:33
Dibromochloromethane	0.00207 U	0.00413	0.00124	mg/kg	1		03/24/21 18:33
Dibromomethane	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
Dichlorodifluoromethane	0.0207 U	0.0413	0.0124	mg/kg	1		03/24/21 18:33
Ethylbenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
Freon-113	0.0413 U	0.0826	0.0256	mg/kg	1		03/24/21 18:33
Hexachlorobutadiene	0.00825 U	0.0165	0.00512	mg/kg	1		03/24/21 18:33
Isopropylbenzene (Cumene)	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
Methylene chloride	0.0413 U	0.0826	0.0256	mg/kg	1		03/24/21 18:33
Methyl-t-butyl ether	0.0413 U	0.0826	0.0256	mg/kg	1		03/24/21 18:33
Naphthalene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
n-Butylbenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
n-Propylbenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
o-Xylene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
P & M -Xylene	0.0207 U	0.0413	0.0124	mg/kg	1		03/24/21 18:33
sec-Butylbenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
Styrene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
tert-Butylbenzene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
Tetrachloroethene	0.00515 U	0.0103	0.00322	mg/kg	1		03/24/21 18:33
Toluene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
trans-1,2-Dichloroethene	0.0103 U	0.0206	0.00644	mg/kg	1		03/24/21 18:33
trans-1,3-Dichloropropene	0.00515 U	0.0103	0.00322	mg/kg	1		03/24/21 18:33
Trichloroethene	0.00207 U	0.00413	0.00124	mg/kg	1		03/24/21 18:33
Trichlorofluoromethane	0.0207 U	0.0413	0.0124	mg/kg	1		03/24/21 18:33
Vinyl acetate	0.0413 U	0.0826	0.0256	mg/kg	1		03/24/21 18:33
Vinyl chloride	0.000330 U	0.000660	0.000206	mg/kg	1		03/24/21 18:33
Xylenes (total)	0.0309 U	0.0619	0.0188	mg/kg	1		03/24/21 18:33
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/24/21 18:33
4-Bromofluorobenzene (surr)	88.4	55-151		%	1		03/24/21 18:33
Toluene-d8 (surr)	99.2	85-116		%	1		03/24/21 18:33

## Results of SB15-1

Client Sample ID: **SB15-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172031  
Lab Project ID: 1211172

Collection Date: 03/11/21 12:15  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 18:33  
Container ID: 1211172031-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 12:15  
Prep Initial Wt./Vol.: 74.819 g  
Prep Extract Vol: 29.1643 mL



Results of **SB15-2**

Client Sample ID: **SB15-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172032  
Lab Project ID: 1211172

Collection Date: 03/11/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.4 U	20.7	6.43	mg/kg	1		03/24/21 18:51

**Surrogates**

5a Androstane (surr)	97	50-150		%	1		03/24/21 18:51
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 18:51  
Container ID: 1211172032-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.014 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	52.0 U	104	44.6	mg/kg	1		03/24/21 18:51

**Surrogates**

n-Triacontane-d62 (surr)	100	50-150		%	1		03/24/21 18:51
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 18:51  
Container ID: 1211172032-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.014 g  
Prep Extract Vol: 5 mL

## Results of SB15-2

Client Sample ID: **SB15-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172032  
 Lab Project ID: 1211172

Collection Date: 03/11/21 13:05  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):96.4  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.770 J	1.82	0.547	mg/kg	1		03/22/21 23:41
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	98.2	50-150		%	1		03/22/21 23:41

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 23:41  
 Container ID: 1211172032-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/11/21 13:05  
 Prep Initial Wt./Vol.: 79.078 g  
 Prep Extract Vol: 27.8198 mL



Results of **SB15-2**

Client Sample ID: **SB15-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172032  
Lab Project ID: 1211172

Collection Date: 03/11/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00730 U	0.0146	0.00452	mg/kg	1		03/24/21 18:48
1,1,1-Trichloroethane	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
1,1,2,2-Tetrachloroethane	0.000730 U	0.00146	0.000452	mg/kg	1		03/24/21 18:48
1,1,2-Trichloroethane	0.000292 U	0.000584	0.000182	mg/kg	1		03/24/21 18:48
1,1-Dichloroethane	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
1,1-Dichloroethene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
1,1-Dichloropropene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
1,2,3-Trichlorobenzene	0.0182 U	0.0365	0.0109	mg/kg	1		03/24/21 18:48
1,2,3-Trichloropropane	0.000730 U	0.00146	0.000452	mg/kg	1		03/24/21 18:48
1,2,4-Trichlorobenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
1,2,4-Trimethylbenzene	0.0182 U	0.0365	0.0109	mg/kg	1		03/24/21 18:48
1,2-Dibromo-3-chloropropane	0.0365 U	0.0730	0.0226	mg/kg	1		03/24/21 18:48
1,2-Dibromoethane	0.000365 U	0.000730	0.000292	mg/kg	1		03/24/21 18:48
1,2-Dichlorobenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
1,2-Dichloroethane	0.000730 U	0.00146	0.000511	mg/kg	1		03/24/21 18:48
1,2-Dichloropropane	0.00365 U	0.00730	0.00226	mg/kg	1		03/24/21 18:48
1,3,5-Trimethylbenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
1,3-Dichlorobenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
1,3-Dichloropropane	0.00365 U	0.00730	0.00226	mg/kg	1		03/24/21 18:48
1,4-Dichlorobenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
2,2-Dichloropropane	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
2-Butanone (MEK)	0.0910 U	0.182	0.0569	mg/kg	1		03/24/21 18:48
2-Chlorotoluene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
2-Hexanone	0.0365 U	0.0730	0.0226	mg/kg	1		03/24/21 18:48
4-Chlorotoluene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
4-Isopropyltoluene	0.0365 U	0.0730	0.0182	mg/kg	1		03/24/21 18:48
4-Methyl-2-pentanone (MIBK)	0.0910 U	0.182	0.0569	mg/kg	1		03/24/21 18:48
Acetone	0.0910 U	0.182	0.0569	mg/kg	1		03/24/21 18:48
Benzene	0.00456 U	0.00912	0.00285	mg/kg	1		03/24/21 18:48
Bromobenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
Bromochloromethane	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
Bromodichloromethane	0.000730 U	0.00146	0.000452	mg/kg	1		03/24/21 18:48
Bromoform	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
Bromomethane	0.00730 U	0.0146	0.00452	mg/kg	1		03/24/21 18:48
Carbon disulfide	0.0365 U	0.0730	0.0226	mg/kg	1		03/24/21 18:48
Carbon tetrachloride	0.00456 U	0.00912	0.00285	mg/kg	1		03/24/21 18:48
Chlorobenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48





**Results of SB15-2**

Client Sample ID: **SB15-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172032  
 Lab Project ID: 1211172

Collection Date: 03/11/21 13:05  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):96.4  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0730 U	0.146	0.0452	mg/kg	1		03/24/21 18:48
Chloroform	0.00146 U	0.00292	0.000730	mg/kg	1		03/24/21 18:48
Chloromethane	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
cis-1,2-Dichloroethene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
cis-1,3-Dichloropropene	0.00456 U	0.00912	0.00285	mg/kg	1		03/24/21 18:48
Dibromochloromethane	0.00183 U	0.00365	0.00109	mg/kg	1		03/24/21 18:48
Dibromomethane	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
Dichlorodifluoromethane	0.0182 U	0.0365	0.0109	mg/kg	1		03/24/21 18:48
Ethylbenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
Freon-113	0.0365 U	0.0730	0.0226	mg/kg	1		03/24/21 18:48
Hexachlorobutadiene	0.00730 U	0.0146	0.00452	mg/kg	1		03/24/21 18:48
Isopropylbenzene (Cumene)	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
Methylene chloride	0.0365 U	0.0730	0.0226	mg/kg	1		03/24/21 18:48
Methyl-t-butyl ether	0.0365 U	0.0730	0.0226	mg/kg	1		03/24/21 18:48
Naphthalene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
n-Butylbenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
n-Propylbenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
o-Xylene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
P & M -Xylene	0.0182 U	0.0365	0.0109	mg/kg	1		03/24/21 18:48
sec-Butylbenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
Styrene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
tert-Butylbenzene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
Tetrachloroethene	0.00456 U	0.00912	0.00285	mg/kg	1		03/24/21 18:48
Toluene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
trans-1,2-Dichloroethene	0.00910 U	0.0182	0.00569	mg/kg	1		03/24/21 18:48
trans-1,3-Dichloropropene	0.00456 U	0.00912	0.00285	mg/kg	1		03/24/21 18:48
Trichloroethene	0.00183 U	0.00365	0.00109	mg/kg	1		03/24/21 18:48
Trichlorofluoromethane	0.0182 U	0.0365	0.0109	mg/kg	1		03/24/21 18:48
Vinyl acetate	0.0365 U	0.0730	0.0226	mg/kg	1		03/24/21 18:48
Vinyl chloride	0.000292 U	0.000584	0.000182	mg/kg	1		03/24/21 18:48
Xylenes (total)	0.0273 U	0.0547	0.0166	mg/kg	1		03/24/21 18:48
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/24/21 18:48
4-Bromofluorobenzene (surr)	91	55-151		%	1		03/24/21 18:48
Toluene-d8 (surr)	98.1	85-116		%	1		03/24/21 18:48

## Results of SB15-2

Client Sample ID: **SB15-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172032  
Lab Project ID: 1211172

Collection Date: 03/11/21 13:05  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.4  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 18:48  
Container ID: 1211172032-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/11/21 13:05  
Prep Initial Wt./Vol.: 79.078 g  
Prep Extract Vol: 27.8198 mL



Results of **SB16-1**

Client Sample ID: **SB16-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172033  
Lab Project ID: 1211172

Collection Date: 03/12/21 15:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	13.0 J	21.2	6.57	mg/kg	1		03/24/21 20:20

**Surrogates**

5a Androstane (surr)	90.1	50-150		%	1		03/24/21 20:20
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:20  
Container ID: 1211172033-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.124 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	124	106	45.5	mg/kg	1		03/24/21 20:20

**Surrogates**

n-Triacontane-d62 (surr)	89.3	50-150		%	1		03/24/21 20:20
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:20  
Container ID: 1211172033-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.124 g  
Prep Extract Vol: 5 mL

## Results of SB16-1

Client Sample ID: **SB16-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172033  
 Lab Project ID: 1211172

Collection Date: 03/12/21 15:00  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.0  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.875 J	2.60	0.781	mg/kg	1		03/22/21 23:59
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	95	50-150		%	1		03/22/21 23:59

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 23:59  
 Container ID: 1211172033-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/12/21 15:00  
 Prep Initial Wt./Vol.: 58.113 g  
 Prep Extract Vol: 28.4679 mL



Results of **SB16-1**

Client Sample ID: **SB16-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172033  
Lab Project ID: 1211172

Collection Date: 03/12/21 15:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.0104 U	0.0208	0.00646	mg/kg	1		03/24/21 20:05
1,1,1-Trichloroethane	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
1,1,2,2-Tetrachloroethane	0.00104 U	0.00208	0.000646	mg/kg	1		03/24/21 20:05
1,1,2-Trichloroethane	0.000417 U	0.000834	0.000260	mg/kg	1		03/24/21 20:05
1,1-Dichloroethane	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
1,1-Dichloroethene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
1,1-Dichloropropene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
1,2,3-Trichlorobenzene	0.0261 U	0.0521	0.0156	mg/kg	1		03/24/21 20:05
1,2,3-Trichloropropane	0.00104 U	0.00208	0.000646	mg/kg	1		03/24/21 20:05
1,2,4-Trichlorobenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
1,2,4-Trimethylbenzene	0.0261 U	0.0521	0.0156	mg/kg	1		03/24/21 20:05
1,2-Dibromo-3-chloropropane	0.0520 U	0.104	0.0323	mg/kg	1		03/24/21 20:05
1,2-Dibromoethane	0.000520 U	0.00104	0.000417	mg/kg	1		03/24/21 20:05
1,2-Dichlorobenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
1,2-Dichloroethane	0.00104 U	0.00208	0.000729	mg/kg	1		03/24/21 20:05
1,2-Dichloropropane	0.00520 U	0.0104	0.00323	mg/kg	1		03/24/21 20:05
1,3,5-Trimethylbenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
1,3-Dichlorobenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
1,3-Dichloropropane	0.00520 U	0.0104	0.00323	mg/kg	1		03/24/21 20:05
1,4-Dichlorobenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
2,2-Dichloropropane	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
2-Butanone (MEK)	0.130 U	0.260	0.0813	mg/kg	1		03/24/21 20:05
2-Chlorotoluene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
2-Hexanone	0.0520 U	0.104	0.0323	mg/kg	1		03/24/21 20:05
4-Chlorotoluene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
4-Isopropyltoluene	0.0520 U	0.104	0.0260	mg/kg	1		03/24/21 20:05
4-Methyl-2-pentanone (MIBK)	0.130 U	0.260	0.0813	mg/kg	1		03/24/21 20:05
Acetone	0.130 U	0.260	0.0813	mg/kg	1		03/24/21 20:05
Benzene	0.00650 U	0.0130	0.00406	mg/kg	1		03/24/21 20:05
Bromobenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
Bromochloromethane	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
Bromodichloromethane	0.00104 U	0.00208	0.000646	mg/kg	1		03/24/21 20:05
Bromoform	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
Bromomethane	0.0104 U	0.0208	0.00646	mg/kg	1		03/24/21 20:05
Carbon disulfide	0.0520 U	0.104	0.0323	mg/kg	1		03/24/21 20:05
Carbon tetrachloride	0.00650 U	0.0130	0.00406	mg/kg	1		03/24/21 20:05
Chlorobenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05



**Results of SB16-1**

Client Sample ID: **SB16-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172033  
 Lab Project ID: 1211172

Collection Date: 03/12/21 15:00  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.0  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.104 U	0.208	0.0646	mg/kg	1		03/24/21 20:05
Chloroform	0.00209 U	0.00417	0.00104	mg/kg	1		03/24/21 20:05
Chloromethane	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
cis-1,2-Dichloroethene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
cis-1,3-Dichloropropene	0.00650 U	0.0130	0.00406	mg/kg	1		03/24/21 20:05
Dibromochloromethane	0.00261 U	0.00521	0.00156	mg/kg	1		03/24/21 20:05
Dibromomethane	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
Dichlorodifluoromethane	0.0261 U	0.0521	0.0156	mg/kg	1		03/24/21 20:05
Ethylbenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
Freon-113	0.0520 U	0.104	0.0323	mg/kg	1		03/24/21 20:05
Hexachlorobutadiene	0.0104 U	0.0208	0.00646	mg/kg	1		03/24/21 20:05
Isopropylbenzene (Cumene)	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
Methylene chloride	0.0520 U	0.104	0.0323	mg/kg	1		03/24/21 20:05
Methyl-t-butyl ether	0.0520 U	0.104	0.0323	mg/kg	1		03/24/21 20:05
Naphthalene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
n-Butylbenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
n-Propylbenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
o-Xylene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
P & M -Xylene	0.0261 U	0.0521	0.0156	mg/kg	1		03/24/21 20:05
sec-Butylbenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
Styrene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
tert-Butylbenzene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
Tetrachloroethene	0.00650 U	0.0130	0.00406	mg/kg	1		03/24/21 20:05
Toluene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
trans-1,2-Dichloroethene	0.0130 U	0.0260	0.00813	mg/kg	1		03/24/21 20:05
trans-1,3-Dichloropropene	0.00650 U	0.0130	0.00406	mg/kg	1		03/24/21 20:05
Trichloroethene	0.00261 U	0.00521	0.00156	mg/kg	1		03/24/21 20:05
Trichlorofluoromethane	0.0261 U	0.0521	0.0156	mg/kg	1		03/24/21 20:05
Vinyl acetate	0.0520 U	0.104	0.0323	mg/kg	1		03/24/21 20:05
Vinyl chloride	0.000417 U	0.000834	0.000260	mg/kg	1		03/24/21 20:05
Xylenes (total)	0.0391 U	0.0781	0.0238	mg/kg	1		03/24/21 20:05
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	104	71-136		%	1		03/24/21 20:05
4-Bromofluorobenzene (surr)	85.7	55-151		%	1		03/24/21 20:05
Toluene-d8 (surr)	98.2	85-116		%	1		03/24/21 20:05

## Results of SB16-1

Client Sample ID: **SB16-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172033  
Lab Project ID: 1211172

Collection Date: 03/12/21 15:00  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 20:05  
Container ID: 1211172033-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 15:00  
Prep Initial Wt./Vol.: 58.113 g  
Prep Extract Vol: 28.4679 mL



Results of **SB16-2**

Client Sample ID: **SB16-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172034  
Lab Project ID: 1211172

Collection Date: 03/12/21 15:52  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.3  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	11.9 U	23.8	7.39	mg/kg	1		03/24/21 19:01

**Surrogates**

5a Androstane (surr)	88.9	50-150		%	1		03/24/21 19:01
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 19:01  
Container ID: 1211172034-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.205 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	59.5 U	119	51.3	mg/kg	1		03/24/21 19:01

**Surrogates**

n-Triacontane-d62 (surr)	90.4	50-150		%	1		03/24/21 19:01
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 19:01  
Container ID: 1211172034-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.205 g  
Prep Extract Vol: 5 mL





Results of **SB16-2**

Client Sample ID: **SB16-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172034  
Lab Project ID: 1211172

Collection Date: 03/12/21 15:52  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.3  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.764 J	2.48	0.745	mg/kg	1		03/23/21 00:17
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	110	50-150		%	1		03/23/21 00:17

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/23/21 00:17  
Container ID: 1211172034-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 15:52  
Prep Initial Wt./Vol.: 101.279 g  
Prep Extract Vol: 41.9091 mL



Results of **SB16-2**

Client Sample ID: **SB16-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172034  
Lab Project ID: 1211172

Collection Date: 03/12/21 15:52  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.3  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00995 U	0.0199	0.00616	mg/kg	1		03/24/21 20:21
1,1,1-Trichloroethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
1,1,2,2-Tetrachloroethane	0.000995 U	0.00199	0.000616	mg/kg	1		03/24/21 20:21
1,1,2-Trichloroethane	0.000398 U	0.000795	0.000248	mg/kg	1		03/24/21 20:21
1,1-Dichloroethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
1,1-Dichloroethene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
1,1-Dichloropropene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
1,2,3-Trichlorobenzene	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 20:21
1,2,3-Trichloropropane	0.000995 U	0.00199	0.000616	mg/kg	1		03/24/21 20:21
1,2,4-Trichlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
1,2,4-Trimethylbenzene	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 20:21
1,2-Dibromo-3-chloropropane	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 20:21
1,2-Dibromoethane	0.000496 U	0.000993	0.000397	mg/kg	1		03/24/21 20:21
1,2-Dichlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
1,2-Dichloroethane	0.000995 U	0.00199	0.000695	mg/kg	1		03/24/21 20:21
1,2-Dichloropropane	0.00496 U	0.00993	0.00308	mg/kg	1		03/24/21 20:21
1,3,5-Trimethylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
1,3-Dichlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
1,3-Dichloropropane	0.00496 U	0.00993	0.00308	mg/kg	1		03/24/21 20:21
1,4-Dichlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
2,2-Dichloropropane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
2-Butanone (MEK)	0.124 U	0.248	0.0775	mg/kg	1		03/24/21 20:21
2-Chlorotoluene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
2-Hexanone	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 20:21
4-Chlorotoluene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
4-Isopropyltoluene	0.0497 U	0.0993	0.0248	mg/kg	1		03/24/21 20:21
4-Methyl-2-pentanone (MIBK)	0.124 U	0.248	0.0775	mg/kg	1		03/24/21 20:21
Acetone	0.124 U	0.248	0.0775	mg/kg	1		03/24/21 20:21
Benzene	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 20:21
Bromobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
Bromochloromethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
Bromodichloromethane	0.000995 U	0.00199	0.000616	mg/kg	1		03/24/21 20:21
Bromoform	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
Bromomethane	0.00995 U	0.0199	0.00616	mg/kg	1		03/24/21 20:21
Carbon disulfide	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 20:21
Carbon tetrachloride	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 20:21
Chlorobenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21



Results of **SB16-2**

Client Sample ID: **SB16-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172034  
Lab Project ID: 1211172

Collection Date: 03/12/21 15:52  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.3  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0995 U	0.199	0.0616	mg/kg	1		03/24/21 20:21
Chloroform	0.00198 U	0.00397	0.000993	mg/kg	1		03/24/21 20:21
Chloromethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
cis-1,2-Dichloroethene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
cis-1,3-Dichloropropene	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 20:21
Dibromochloromethane	0.00248 U	0.00497	0.00149	mg/kg	1		03/24/21 20:21
Dibromomethane	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
Dichlorodifluoromethane	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 20:21
Ethylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
Freon-113	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 20:21
Hexachlorobutadiene	0.00995 U	0.0199	0.00616	mg/kg	1		03/24/21 20:21
Isopropylbenzene (Cumene)	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
Methylene chloride	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 20:21
Methyl-t-butyl ether	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 20:21
Naphthalene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
n-Butylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
n-Propylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
o-Xylene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
P & M -Xylene	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 20:21
sec-Butylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
Styrene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
tert-Butylbenzene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
Tetrachloroethene	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 20:21
Toluene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
trans-1,2-Dichloroethene	0.0124 U	0.0248	0.00775	mg/kg	1		03/24/21 20:21
trans-1,3-Dichloropropene	0.00620 U	0.0124	0.00387	mg/kg	1		03/24/21 20:21
Trichloroethene	0.00248 U	0.00497	0.00149	mg/kg	1		03/24/21 20:21
Trichlorofluoromethane	0.0249 U	0.0497	0.0149	mg/kg	1		03/24/21 20:21
Vinyl acetate	0.0497 U	0.0993	0.0308	mg/kg	1		03/24/21 20:21
Vinyl chloride	0.000398 U	0.000795	0.000248	mg/kg	1		03/24/21 20:21
Xylenes (total)	0.0372 U	0.0745	0.0227	mg/kg	1		03/24/21 20:21
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/24/21 20:21
4-Bromofluorobenzene (surr)	101	55-151		%	1		03/24/21 20:21
Toluene-d8 (surr)	98.5	85-116		%	1		03/24/21 20:21

## Results of SB16-2

Client Sample ID: **SB16-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172034  
Lab Project ID: 1211172

Collection Date: 03/12/21 15:52  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):83.3  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 20:21  
Container ID: 1211172034-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 15:52  
Prep Initial Wt./Vol.: 101.279 g  
Prep Extract Vol: 41.9091 mL



Results of **SB17-1**

Client Sample ID: **SB17-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172035  
Lab Project ID: 1211172

Collection Date: 03/12/21 11:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.9 U	21.8	6.76	mg/kg	1		03/24/21 20:30

**Surrogates**

5a Androstane (surr)	89.3	50-150		%	1		03/24/21 20:30
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:30  
Container ID: 1211172035-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.08 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	54.5 U	109	46.9	mg/kg	1		03/24/21 20:30

**Surrogates**

n-Triacontane-d62 (surr)	90.3	50-150		%	1		03/24/21 20:30
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:30  
Container ID: 1211172035-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.08 g  
Prep Extract Vol: 5 mL

## Results of SB17-1

Client Sample ID: **SB17-1**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172035  
 Lab Project ID: 1211172

Collection Date: 03/12/21 11:30  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):91.4  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.16 U	2.32	0.695	mg/kg	1		03/23/21 00:34
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	96.3	50-150		%	1		03/23/21 00:34

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/23/21 00:34  
 Container ID: 1211172035-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/12/21 11:30  
 Prep Initial Wt./Vol.: 73.991 g  
 Prep Extract Vol: 31.3377 mL



Results of **SB17-1**

Client Sample ID: **SB17-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172035  
Lab Project ID: 1211172

Collection Date: 03/12/21 11:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00925 U	0.0185	0.00574	mg/kg	1		03/24/21 20:36
1,1,1-Trichloroethane	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
1,1,2,2-Tetrachloroethane	0.000925 U	0.00185	0.000574	mg/kg	1		03/24/21 20:36
1,1,2-Trichloroethane	0.000371 U	0.000741	0.000232	mg/kg	1		03/24/21 20:36
1,1-Dichloroethane	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
1,1-Dichloroethene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
1,1-Dichloropropene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
1,2,3-Trichlorobenzene	0.0232 U	0.0463	0.0139	mg/kg	1		03/24/21 20:36
1,2,3-Trichloropropane	0.000925 U	0.00185	0.000574	mg/kg	1		03/24/21 20:36
1,2,4-Trichlorobenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
1,2,4-Trimethylbenzene	0.0232 U	0.0463	0.0139	mg/kg	1		03/24/21 20:36
1,2-Dibromo-3-chloropropane	0.0463 U	0.0926	0.0287	mg/kg	1		03/24/21 20:36
1,2-Dibromoethane	0.000463 U	0.000926	0.000371	mg/kg	1		03/24/21 20:36
1,2-Dichlorobenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
1,2-Dichloroethane	0.000925 U	0.00185	0.000648	mg/kg	1		03/24/21 20:36
1,2-Dichloropropane	0.00463 U	0.00926	0.00287	mg/kg	1		03/24/21 20:36
1,3,5-Trimethylbenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
1,3-Dichlorobenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
1,3-Dichloropropane	0.00463 U	0.00926	0.00287	mg/kg	1		03/24/21 20:36
1,4-Dichlorobenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
2,2-Dichloropropane	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
2-Butanone (MEK)	0.116 U	0.232	0.0723	mg/kg	1		03/24/21 20:36
2-Chlorotoluene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
2-Hexanone	0.0463 U	0.0926	0.0287	mg/kg	1		03/24/21 20:36
4-Chlorotoluene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
4-Isopropyltoluene	0.0463 U	0.0926	0.0232	mg/kg	1		03/24/21 20:36
4-Methyl-2-pentanone (MIBK)	0.116 U	0.232	0.0723	mg/kg	1		03/24/21 20:36
Acetone	0.116 U	0.232	0.0723	mg/kg	1		03/24/21 20:36
Benzene	0.00580 U	0.0116	0.00361	mg/kg	1		03/24/21 20:36
Bromobenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
Bromochloromethane	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
Bromodichloromethane	0.000925 U	0.00185	0.000574	mg/kg	1		03/24/21 20:36
Bromoform	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
Bromomethane	0.00925 U	0.0185	0.00574	mg/kg	1		03/24/21 20:36
Carbon disulfide	0.0463 U	0.0926	0.0287	mg/kg	1		03/24/21 20:36
Carbon tetrachloride	0.00580 U	0.0116	0.00361	mg/kg	1		03/24/21 20:36
Chlorobenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36



Results of **SB17-1**

Client Sample ID: **SB17-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172035  
Lab Project ID: 1211172

Collection Date: 03/12/21 11:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0925 U	0.185	0.0574	mg/kg	1		03/24/21 20:36
Chloroform	0.00186 U	0.00371	0.000926	mg/kg	1		03/24/21 20:36
Chloromethane	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
cis-1,2-Dichloroethene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
cis-1,3-Dichloropropene	0.00580 U	0.0116	0.00361	mg/kg	1		03/24/21 20:36
Dibromochloromethane	0.00231 U	0.00463	0.00139	mg/kg	1		03/24/21 20:36
Dibromomethane	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
Dichlorodifluoromethane	0.0232 U	0.0463	0.0139	mg/kg	1		03/24/21 20:36
Ethylbenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
Freon-113	0.0463 U	0.0926	0.0287	mg/kg	1		03/24/21 20:36
Hexachlorobutadiene	0.00925 U	0.0185	0.00574	mg/kg	1		03/24/21 20:36
Isopropylbenzene (Cumene)	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
Methylene chloride	0.0463 U	0.0926	0.0287	mg/kg	1		03/24/21 20:36
Methyl-t-butyl ether	0.0463 U	0.0926	0.0287	mg/kg	1		03/24/21 20:36
Naphthalene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
n-Butylbenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
n-Propylbenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
o-Xylene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
P & M -Xylene	0.0232 U	0.0463	0.0139	mg/kg	1		03/24/21 20:36
sec-Butylbenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
Styrene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
tert-Butylbenzene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
Tetrachloroethene	0.00580 U	0.0116	0.00361	mg/kg	1		03/24/21 20:36
Toluene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
trans-1,2-Dichloroethene	0.0116 U	0.0232	0.00723	mg/kg	1		03/24/21 20:36
trans-1,3-Dichloropropene	0.00580 U	0.0116	0.00361	mg/kg	1		03/24/21 20:36
Trichloroethene	0.00231 U	0.00463	0.00139	mg/kg	1		03/24/21 20:36
Trichlorofluoromethane	0.0232 U	0.0463	0.0139	mg/kg	1		03/24/21 20:36
Vinyl acetate	0.0463 U	0.0926	0.0287	mg/kg	1		03/24/21 20:36
Vinyl chloride	0.000371 U	0.000741	0.000232	mg/kg	1		03/24/21 20:36
Xylenes (total)	0.0348 U	0.0695	0.0211	mg/kg	1		03/24/21 20:36
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/24/21 20:36
4-Bromofluorobenzene (surr)	88	55-151		%	1		03/24/21 20:36
Toluene-d8 (surr)	98.6	85-116		%	1		03/24/21 20:36





Results of **SB17-1**

Client Sample ID: **SB17-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172035  
Lab Project ID: 1211172

Collection Date: 03/12/21 11:30  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.4  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 20:36  
Container ID: 1211172035-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 11:30  
Prep Initial Wt./Vol.: 73.991 g  
Prep Extract Vol: 31.3377 mL



Results of **SB17-2**

Client Sample ID: **SB17-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172036  
Lab Project ID: 1211172

Collection Date: 03/12/21 11:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.2  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.4 U	20.7	6.42	mg/kg	1		03/24/21 19:11

**Surrogates**

5a Androstane (surr)	88.4	50-150		%	1		03/24/21 19:11
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 19:11  
Container ID: 1211172036-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.113 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	52.0 U	104	44.6	mg/kg	1		03/24/21 19:11

**Surrogates**

n-Triacontane-d62 (surr)	91	50-150		%	1		03/24/21 19:11
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 19:11  
Container ID: 1211172036-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.113 g  
Prep Extract Vol: 5 mL



Results of **SB17-2**

Client Sample ID: **SB17-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172036  
Lab Project ID: 1211172

Collection Date: 03/12/21 11:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.2  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.613 J	1.86	0.559	mg/kg	1		03/23/21 00:52
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	92.4	50-150		%	1		03/23/21 00:52

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/23/21 00:52  
Container ID: 1211172036-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 11:50  
Prep Initial Wt./Vol.: 78.233 g  
Prep Extract Vol: 28.0115 mL



Results of **SB17-2**

Client Sample ID: **SB17-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172036  
Lab Project ID: 1211172

Collection Date: 03/12/21 11:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.2  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00745 U	0.0149	0.00462	mg/kg	1		03/24/21 20:52
1,1,1-Trichloroethane	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
1,1,2,2-Tetrachloroethane	0.000745 U	0.00149	0.000462	mg/kg	1		03/24/21 20:52
1,1,2-Trichloroethane	0.000298 U	0.000596	0.000186	mg/kg	1		03/24/21 20:52
1,1-Dichloroethane	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
1,1-Dichloroethene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
1,1-Dichloropropene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
1,2,3-Trichlorobenzene	0.0186 U	0.0372	0.0112	mg/kg	1		03/24/21 20:52
1,2,3-Trichloropropane	0.000745 U	0.00149	0.000462	mg/kg	1		03/24/21 20:52
1,2,4-Trichlorobenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
1,2,4-Trimethylbenzene	0.0186 U	0.0372	0.0112	mg/kg	1		03/24/21 20:52
1,2-Dibromo-3-chloropropane	0.0372 U	0.0745	0.0231	mg/kg	1		03/24/21 20:52
1,2-Dibromoethane	0.000373 U	0.000745	0.000298	mg/kg	1		03/24/21 20:52
1,2-Dichlorobenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
1,2-Dichloroethane	0.000745 U	0.00149	0.000521	mg/kg	1		03/24/21 20:52
1,2-Dichloropropane	0.00373 U	0.00745	0.00231	mg/kg	1		03/24/21 20:52
1,3,5-Trimethylbenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
1,3-Dichlorobenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
1,3-Dichloropropane	0.00373 U	0.00745	0.00231	mg/kg	1		03/24/21 20:52
1,4-Dichlorobenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
2,2-Dichloropropane	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
2-Butanone (MEK)	0.0930 U	0.186	0.0581	mg/kg	1		03/24/21 20:52
2-Chlorotoluene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
2-Hexanone	0.0372 U	0.0745	0.0231	mg/kg	1		03/24/21 20:52
4-Chlorotoluene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
4-Isopropyltoluene	0.0372 U	0.0745	0.0186	mg/kg	1		03/24/21 20:52
4-Methyl-2-pentanone (MIBK)	0.0930 U	0.186	0.0581	mg/kg	1		03/24/21 20:52
Acetone	0.0930 U	0.186	0.0581	mg/kg	1		03/24/21 20:52
Benzene	0.00466 U	0.00931	0.00290	mg/kg	1		03/24/21 20:52
Bromobenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
Bromochloromethane	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
Bromodichloromethane	0.000745 U	0.00149	0.000462	mg/kg	1		03/24/21 20:52
Bromoform	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
Bromomethane	0.00745 U	0.0149	0.00462	mg/kg	1		03/24/21 20:52
Carbon disulfide	0.0372 U	0.0745	0.0231	mg/kg	1		03/24/21 20:52
Carbon tetrachloride	0.00466 U	0.00931	0.00290	mg/kg	1		03/24/21 20:52
Chlorobenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52



Results of **SB17-2**

Client Sample ID: **SB17-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172036  
Lab Project ID: 1211172

Collection Date: 03/12/21 11:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.2  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0745 U	0.149	0.0462	mg/kg	1		03/24/21 20:52
Chloroform	0.00149 U	0.00298	0.000745	mg/kg	1		03/24/21 20:52
Chloromethane	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
cis-1,2-Dichloroethene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
cis-1,3-Dichloropropene	0.00466 U	0.00931	0.00290	mg/kg	1		03/24/21 20:52
Dibromochloromethane	0.00186 U	0.00372	0.00112	mg/kg	1		03/24/21 20:52
Dibromomethane	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
Dichlorodifluoromethane	0.0186 U	0.0372	0.0112	mg/kg	1		03/24/21 20:52
Ethylbenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
Freon-113	0.0372 U	0.0745	0.0231	mg/kg	1		03/24/21 20:52
Hexachlorobutadiene	0.00745 U	0.0149	0.00462	mg/kg	1		03/24/21 20:52
Isopropylbenzene (Cumene)	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
Methylene chloride	0.0372 U	0.0745	0.0231	mg/kg	1		03/24/21 20:52
Methyl-t-butyl ether	0.0372 U	0.0745	0.0231	mg/kg	1		03/24/21 20:52
Naphthalene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
n-Butylbenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
n-Propylbenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
o-Xylene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
P & M -Xylene	0.0186 U	0.0372	0.0112	mg/kg	1		03/24/21 20:52
sec-Butylbenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
Styrene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
tert-Butylbenzene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
Tetrachloroethene	0.00466 U	0.00931	0.00290	mg/kg	1		03/24/21 20:52
Toluene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
trans-1,2-Dichloroethene	0.00930 U	0.0186	0.00581	mg/kg	1		03/24/21 20:52
trans-1,3-Dichloropropene	0.00466 U	0.00931	0.00290	mg/kg	1		03/24/21 20:52
Trichloroethene	0.00186 U	0.00372	0.00112	mg/kg	1		03/24/21 20:52
Trichlorofluoromethane	0.0186 U	0.0372	0.0112	mg/kg	1		03/24/21 20:52
Vinyl acetate	0.0372 U	0.0745	0.0231	mg/kg	1		03/24/21 20:52
Vinyl chloride	0.000298 U	0.000596	0.000186	mg/kg	1		03/24/21 20:52
Xylenes (total)	0.0279 U	0.0559	0.0170	mg/kg	1		03/24/21 20:52
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		03/24/21 20:52
4-Bromofluorobenzene (surr)	85.8	55-151		%	1		03/24/21 20:52
Toluene-d8 (surr)	97.4	85-116		%	1		03/24/21 20:52

## Results of SB17-2

Client Sample ID: **SB17-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172036  
Lab Project ID: 1211172

Collection Date: 03/12/21 11:50  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.2  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 20:52  
Container ID: 1211172036-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 11:50  
Prep Initial Wt./Vol.: 78.233 g  
Prep Extract Vol: 28.0115 mL



Results of **SB18-1**

Client Sample ID: **SB18-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172037  
Lab Project ID: 1211172

Collection Date: 03/12/21 16:33  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.9  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	17.0 J	21.4	6.62	mg/kg	1		03/24/21 20:39

**Surrogates**

5a Androstane (surr)	93.1	50-150		%	1		03/24/21 20:39
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:39  
Container ID: 1211172037-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.248 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	148	107	45.9	mg/kg	1		03/24/21 20:39

**Surrogates**

n-Triacontane-d62 (surr)	94.8	50-150		%	1		03/24/21 20:39
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 20:39  
Container ID: 1211172037-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.248 g  
Prep Extract Vol: 5 mL



Results of **SB18-1**

Client Sample ID: **SB18-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172037  
Lab Project ID: 1211172

Collection Date: 03/12/21 16:33  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.9  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.09 J	2.45	0.736	mg/kg	1		03/23/21 01:10
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	93.2	50-150		%	1		03/23/21 01:10

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/23/21 01:10  
Container ID: 1211172037-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 16:33  
Prep Initial Wt./Vol.: 64.938 g  
Prep Extract Vol: 29.6114 mL





Results of **SB18-1**

Client Sample ID: **SB18-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172037  
Lab Project ID: 1211172

Collection Date: 03/12/21 16:33  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.9  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00980 U	0.0196	0.00609	mg/kg	1		03/25/21 14:26
1,1,1-Trichloroethane	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
1,1,2,2-Tetrachloroethane	0.000980 U	0.00196	0.000609	mg/kg	1		03/25/21 14:26
1,1,2-Trichloroethane	0.000393 U	0.000785	0.000245	mg/kg	1		03/25/21 14:26
1,1-Dichloroethane	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
1,1-Dichloroethene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
1,1-Dichloropropene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
1,2,3-Trichlorobenzene	0.0245 U	0.0491	0.0147	mg/kg	1		03/25/21 14:26
1,2,3-Trichloropropane	0.000980 U	0.00196	0.000609	mg/kg	1		03/25/21 14:26
1,2,4-Trichlorobenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
1,2,4-Trimethylbenzene	0.0245 U	0.0491	0.0147	mg/kg	1		03/25/21 14:26
1,2-Dibromo-3-chloropropane	0.0491 U	0.0982	0.0304	mg/kg	1		03/25/21 14:26
1,2-Dibromoethane	0.000491 U	0.000982	0.000393	mg/kg	1		03/25/21 14:26
1,2-Dichlorobenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
1,2-Dichloroethane	0.000980 U	0.00196	0.000687	mg/kg	1		03/25/21 14:26
1,2-Dichloropropane	0.00491 U	0.00982	0.00304	mg/kg	1		03/25/21 14:26
1,3,5-Trimethylbenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
1,3-Dichlorobenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
1,3-Dichloropropane	0.00491 U	0.00982	0.00304	mg/kg	1		03/25/21 14:26
1,4-Dichlorobenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
2,2-Dichloropropane	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
2-Butanone (MEK)	0.123 U	0.245	0.0766	mg/kg	1		03/25/21 14:26
2-Chlorotoluene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
2-Hexanone	0.0491 U	0.0982	0.0304	mg/kg	1		03/25/21 14:26
4-Chlorotoluene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
4-Isopropyltoluene	0.0491 U	0.0982	0.0245	mg/kg	1		03/25/21 14:26
4-Methyl-2-pentanone (MIBK)	0.123 U	0.245	0.0766	mg/kg	1		03/25/21 14:26
Acetone	0.123 U	0.245	0.0766	mg/kg	1		03/25/21 14:26
Benzene	0.00515 J	0.0123	0.00383	mg/kg	1		03/25/21 14:26
Bromobenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
Bromochloromethane	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
Bromodichloromethane	0.000980 U	0.00196	0.000609	mg/kg	1		03/25/21 14:26
Bromoform	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
Bromomethane	0.00980 U	0.0196	0.00609	mg/kg	1		03/25/21 14:26
Carbon disulfide	0.0491 U	0.0982	0.0304	mg/kg	1		03/25/21 14:26
Carbon tetrachloride	0.00615 U	0.0123	0.00383	mg/kg	1		03/25/21 14:26
Chlorobenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26



Results of **SB18-1**

Client Sample ID: **SB18-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172037  
Lab Project ID: 1211172

Collection Date: 03/12/21 16:33  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.9  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0980 U	0.196	0.0609	mg/kg	1		03/25/21 14:26
Chloroform	0.00197 U	0.00393	0.000982	mg/kg	1		03/25/21 14:26
Chloromethane	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
cis-1,2-Dichloroethene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
cis-1,3-Dichloropropene	0.00615 U	0.0123	0.00383	mg/kg	1		03/25/21 14:26
Dibromochloromethane	0.00246 U	0.00491	0.00147	mg/kg	1		03/25/21 14:26
Dibromomethane	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
Dichlorodifluoromethane	0.0245 U	0.0491	0.0147	mg/kg	1		03/25/21 14:26
Ethylbenzene	0.00957 J	0.0245	0.00766	mg/kg	1		03/25/21 14:26
Freon-113	0.0491 U	0.0982	0.0304	mg/kg	1		03/25/21 14:26
Hexachlorobutadiene	0.00980 U	0.0196	0.00609	mg/kg	1		03/25/21 14:26
Isopropylbenzene (Cumene)	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
Methylene chloride	0.0491 U	0.0982	0.0304	mg/kg	1		03/25/21 14:26
Methyl-t-butyl ether	0.0491 U	0.0982	0.0304	mg/kg	1		03/25/21 14:26
Naphthalene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
n-Butylbenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
n-Propylbenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
o-Xylene	0.0118 J	0.0245	0.00766	mg/kg	1		03/25/21 14:26
P & M -Xylene	0.0373 J	0.0491	0.0147	mg/kg	1		03/25/21 14:26
sec-Butylbenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
Styrene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
tert-Butylbenzene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
Tetrachloroethene	0.00615 U	0.0123	0.00383	mg/kg	1		03/25/21 14:26
Toluene	0.0444	0.0245	0.00766	mg/kg	1		03/25/21 14:26
trans-1,2-Dichloroethene	0.0123 U	0.0245	0.00766	mg/kg	1		03/25/21 14:26
trans-1,3-Dichloropropene	0.00615 U	0.0123	0.00383	mg/kg	1		03/25/21 14:26
Trichloroethene	0.00246 U	0.00491	0.00147	mg/kg	1		03/25/21 14:26
Trichlorofluoromethane	0.0245 U	0.0491	0.0147	mg/kg	1		03/25/21 14:26
Vinyl acetate	0.0491 U	0.0982	0.0304	mg/kg	1		03/25/21 14:26
Vinyl chloride	0.000393 U	0.000785	0.000245	mg/kg	1		03/25/21 14:26
Xylenes (total)	0.0491 J	0.0736	0.0224	mg/kg	1		03/25/21 14:26
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/25/21 14:26
4-Bromofluorobenzene (surr)	89	55-151		%	1		03/25/21 14:26
Toluene-d8 (surr)	99.2	85-116		%	1		03/25/21 14:26

## Results of SB18-1

Client Sample ID: **SB18-1**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172037  
Lab Project ID: 1211172

Collection Date: 03/12/21 16:33  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.9  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/25/21 14:26  
Container ID: 1211172037-A

Prep Batch: VXX36901  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 16:33  
Prep Initial Wt./Vol.: 64.938 g  
Prep Extract Vol: 29.6114 mL



Results of **SB18-2**

Client Sample ID: **SB18-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172038  
Lab Project ID: 1211172

Collection Date: 03/12/21 16:55  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.4  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	10.4 U	20.7	6.41	mg/kg	1		03/24/21 19:20

**Surrogates**

5a Androstane (surr)	95.1	50-150		%	1		03/24/21 19:20
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 03/24/21 19:20  
Container ID: 1211172038-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.111 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	51.5 U	103	44.4	mg/kg	1		03/24/21 19:20

**Surrogates**

n-Triacontane-d62 (surr)	98.8	50-150		%	1		03/24/21 19:20
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**Batch Information**

Analytical Batch: XFC15881  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 03/24/21 19:20  
Container ID: 1211172038-B

Prep Batch: XXX44545  
Prep Method: SW3550C  
Prep Date/Time: 03/24/21 08:55  
Prep Initial Wt./Vol.: 30.111 g  
Prep Extract Vol: 5 mL



Results of **SB18-2**

Client Sample ID: **SB18-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172038  
Lab Project ID: 1211172

Collection Date: 03/12/21 16:55  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.4  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.769 J	2.42	0.726	mg/kg	1		03/23/21 01:27
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	96.4	50-150		%	1		03/23/21 01:27

**Batch Information**

Analytical Batch: VFC15525  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 03/23/21 01:27  
Container ID: 1211172038-A

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 16:55  
Prep Initial Wt./Vol.: 58.031 g  
Prep Extract Vol: 27.0757 mL



Results of **SB18-2**

Client Sample ID: **SB18-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172038  
Lab Project ID: 1211172

Collection Date: 03/12/21 16:55  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.4  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.00970 U	0.0194	0.00600	mg/kg	1		03/25/21 14:11
1,1,1-Trichloroethane	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
1,1,2,2-Tetrachloroethane	0.000970 U	0.00194	0.000600	mg/kg	1		03/25/21 14:11
1,1,2-Trichloroethane	0.000387 U	0.000774	0.000242	mg/kg	1		03/25/21 14:11
1,1-Dichloroethane	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
1,1-Dichloroethene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
1,1-Dichloropropene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
1,2,3-Trichlorobenzene	0.0242 U	0.0484	0.0145	mg/kg	1		03/25/21 14:11
1,2,3-Trichloropropane	0.000970 U	0.00194	0.000600	mg/kg	1		03/25/21 14:11
1,2,4-Trichlorobenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
1,2,4-Trimethylbenzene	0.0242 U	0.0484	0.0145	mg/kg	1		03/25/21 14:11
1,2-Dibromo-3-chloropropane	0.0484 U	0.0968	0.0300	mg/kg	1		03/25/21 14:11
1,2-Dibromoethane	0.000484 U	0.000968	0.000387	mg/kg	1		03/25/21 14:11
1,2-Dichlorobenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
1,2-Dichloroethane	0.000970 U	0.00194	0.000677	mg/kg	1		03/25/21 14:11
1,2-Dichloropropane	0.00484 U	0.00968	0.00300	mg/kg	1		03/25/21 14:11
1,3,5-Trimethylbenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
1,3-Dichlorobenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
1,3-Dichloropropane	0.00484 U	0.00968	0.00300	mg/kg	1		03/25/21 14:11
1,4-Dichlorobenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
2,2-Dichloropropane	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
2-Butanone (MEK)	0.121 U	0.242	0.0755	mg/kg	1		03/25/21 14:11
2-Chlorotoluene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
2-Hexanone	0.0484 U	0.0968	0.0300	mg/kg	1		03/25/21 14:11
4-Chlorotoluene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
4-Isopropyltoluene	0.0484 U	0.0968	0.0242	mg/kg	1		03/25/21 14:11
4-Methyl-2-pentanone (MIBK)	0.121 U	0.242	0.0755	mg/kg	1		03/25/21 14:11
Acetone	0.121 U	0.242	0.0755	mg/kg	1		03/25/21 14:11
Benzene	0.00605 U	0.0121	0.00377	mg/kg	1		03/25/21 14:11
Bromobenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
Bromochloromethane	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
Bromodichloromethane	0.000970 U	0.00194	0.000600	mg/kg	1		03/25/21 14:11
Bromoform	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
Bromomethane	0.00970 U	0.0194	0.00600	mg/kg	1		03/25/21 14:11
Carbon disulfide	0.0484 U	0.0968	0.0300	mg/kg	1		03/25/21 14:11
Carbon tetrachloride	0.00605 U	0.0121	0.00377	mg/kg	1		03/25/21 14:11
Chlorobenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11



**Results of SB18-2**

Client Sample ID: **SB18-2**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172038  
 Lab Project ID: 1211172

Collection Date: 03/12/21 16:55  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):96.4  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.0970 U	0.194	0.0600	mg/kg	1		03/25/21 14:11
Chloroform	0.00194 U	0.00387	0.000968	mg/kg	1		03/25/21 14:11
Chloromethane	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
cis-1,2-Dichloroethene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
cis-1,3-Dichloropropene	0.00605 U	0.0121	0.00377	mg/kg	1		03/25/21 14:11
Dibromochloromethane	0.00242 U	0.00484	0.00145	mg/kg	1		03/25/21 14:11
Dibromomethane	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
Dichlorodifluoromethane	0.0242 U	0.0484	0.0145	mg/kg	1		03/25/21 14:11
Ethylbenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
Freon-113	0.0484 U	0.0968	0.0300	mg/kg	1		03/25/21 14:11
Hexachlorobutadiene	0.00970 U	0.0194	0.00600	mg/kg	1		03/25/21 14:11
Isopropylbenzene (Cumene)	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
Methylene chloride	0.0484 U	0.0968	0.0300	mg/kg	1		03/25/21 14:11
Methyl-t-butyl ether	0.0484 U	0.0968	0.0300	mg/kg	1		03/25/21 14:11
Naphthalene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
n-Butylbenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
n-Propylbenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
o-Xylene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
P & M -Xylene	0.0242 U	0.0484	0.0145	mg/kg	1		03/25/21 14:11
sec-Butylbenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
Styrene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
tert-Butylbenzene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
Tetrachloroethene	0.00605 U	0.0121	0.00377	mg/kg	1		03/25/21 14:11
Toluene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
trans-1,2-Dichloroethene	0.0121 U	0.0242	0.00755	mg/kg	1		03/25/21 14:11
trans-1,3-Dichloropropene	0.00605 U	0.0121	0.00377	mg/kg	1		03/25/21 14:11
Trichloroethene	0.00242 U	0.00484	0.00145	mg/kg	1		03/25/21 14:11
Trichlorofluoromethane	0.0242 U	0.0484	0.0145	mg/kg	1		03/25/21 14:11
Vinyl acetate	0.0484 U	0.0968	0.0300	mg/kg	1		03/25/21 14:11
Vinyl chloride	0.000387 U	0.000774	0.000242	mg/kg	1		03/25/21 14:11
Xylenes (total)	0.0363 U	0.0726	0.0221	mg/kg	1		03/25/21 14:11
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		03/25/21 14:11
4-Bromofluorobenzene (surr)	90.1	55-151		%	1		03/25/21 14:11
Toluene-d8 (surr)	98.2	85-116		%	1		03/25/21 14:11



Results of **SB18-2**

Client Sample ID: **SB18-2**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172038  
Lab Project ID: 1211172

Collection Date: 03/12/21 16:55  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.4  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/25/21 14:11  
Container ID: 1211172038-A

Prep Batch: VXX36901  
Prep Method: SW5035A  
Prep Date/Time: 03/12/21 16:55  
Prep Initial Wt./Vol.: 58.031 g  
Prep Extract Vol: 27.0757 mL



## Results of Trip Blank (TB-1)

Client Sample ID: **Trip Blank (TB-1)**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172039  
 Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.774 J	2.51	0.753	mg/kg	1		03/22/21 17:47
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	103	50-150		%	1		03/22/21 17:47

## Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 17:47  
 Container ID: 1211172039-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/10/21 14:12  
 Prep Initial Wt./Vol.: 49.833 g  
 Prep Extract Vol: 25 mL



Results of Trip Blank (TB-1)

Client Sample ID: Trip Blank (TB-1)
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172039
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of Trip Blank (TB-1)

Client Sample ID: Trip Blank (TB-1)
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172039
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

## Results of Trip Blank (TB-1)

Client Sample ID: **Trip Blank (TB-1)**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172039  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 16:30  
Container ID: 1211172039-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 14:12  
Prep Initial Wt./Vol.: 49.833 g  
Prep Extract Vol: 25 mL



### Results of Trip Blank (TB-2)

Client Sample ID: **Trip Blank (TB-2)**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172040  
 Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):  
 Location:

### Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.840 J	2.52	0.756	mg/kg	1		03/22/21 18:04
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	101	50-150		%	1		03/22/21 18:04

### Batch Information

Analytical Batch: VFC15525  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 03/22/21 18:04  
 Container ID: 1211172040-A

Prep Batch: VXX36889  
 Prep Method: SW5035A  
 Prep Date/Time: 03/10/21 14:12  
 Prep Initial Wt./Vol.: 49.601 g  
 Prep Extract Vol: 25 mL



Results of Trip Blank (TB-2)

Client Sample ID: Trip Blank (TB-2)
Client Project ID: 103311-009 Cordova SREB
Lab Sample ID: 1211172040
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12
Received Date: 03/17/21 08:17
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



**Results of Trip Blank (TB-2)**

Client Sample ID: **Trip Blank (TB-2)**  
 Client Project ID: **103311-009 Cordova SREB**  
 Lab Sample ID: 1211172040  
 Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
 Received Date: 03/17/21 08:17  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroethane	0.101 U	0.202	0.0625	mg/kg	1		03/24/21 16:45
Chloroform	0.00201 U	0.00403	0.00101	mg/kg	1		03/24/21 16:45
Chloromethane	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
cis-1,2-Dichloroethene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
cis-1,3-Dichloropropene	0.00630 U	0.0126	0.00393	mg/kg	1		03/24/21 16:45
Dibromochloromethane	0.00252 U	0.00504	0.00151	mg/kg	1		03/24/21 16:45
Dibromomethane	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
Dichlorodifluoromethane	0.0252 U	0.0504	0.0151	mg/kg	1		03/24/21 16:45
Ethylbenzene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
Freon-113	0.0505 U	0.101	0.0312	mg/kg	1		03/24/21 16:45
Hexachlorobutadiene	0.0101 U	0.0202	0.00625	mg/kg	1		03/24/21 16:45
Isopropylbenzene (Cumene)	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
Methylene chloride	0.0505 U	0.101	0.0312	mg/kg	1		03/24/21 16:45
Methyl-t-butyl ether	0.0505 U	0.101	0.0312	mg/kg	1		03/24/21 16:45
Naphthalene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
n-Butylbenzene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
n-Propylbenzene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
o-Xylene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
P & M -Xylene	0.0252 U	0.0504	0.0151	mg/kg	1		03/24/21 16:45
sec-Butylbenzene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
Styrene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
tert-Butylbenzene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
Tetrachloroethene	0.00630 U	0.0126	0.00393	mg/kg	1		03/24/21 16:45
Toluene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
trans-1,2-Dichloroethene	0.0126 U	0.0252	0.00786	mg/kg	1		03/24/21 16:45
trans-1,3-Dichloropropene	0.00630 U	0.0126	0.00393	mg/kg	1		03/24/21 16:45
Trichloroethene	0.00252 U	0.00504	0.00151	mg/kg	1		03/24/21 16:45
Trichlorofluoromethane	0.0252 U	0.0504	0.0151	mg/kg	1		03/24/21 16:45
Vinyl acetate	0.0505 U	0.101	0.0312	mg/kg	1		03/24/21 16:45
Vinyl chloride	0.000403 U	0.000806	0.000252	mg/kg	1		03/24/21 16:45
Xylenes (total)	0.0378 U	0.0756	0.0230	mg/kg	1		03/24/21 16:45
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		03/24/21 16:45
4-Bromofluorobenzene (surr)	94.8	55-151		%	1		03/24/21 16:45
Toluene-d8 (surr)	98.3	85-116		%	1		03/24/21 16:45



**Results of Trip Blank (TB-2)**

Client Sample ID: **Trip Blank (TB-2)**  
Client Project ID: **103311-009 Cordova SREB**  
Lab Sample ID: 1211172040  
Lab Project ID: 1211172

Collection Date: 03/10/21 14:12  
Received Date: 03/17/21 08:17  
Matrix: Soil/Solid (dry weight)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 03/24/21 16:45  
Container ID: 1211172040-A

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 03/10/21 14:12  
Prep Initial Wt./Vol.: 49.601 g  
Prep Extract Vol: 25 mL



## Method Blank

Blank ID: MB for HBN 1816933 [SPT/11232]

Matrix: Soil/Solid (dry weight)

Blank Lab ID: 1603155

QC for Samples:

1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172018, 1211172019

## Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

## Batch Information

Analytical Batch: SPT11232

Analytical Method: SM21 2540G

Instrument:

Analyst: IVM

Analytical Date/Time: 3/17/2021 6:00:00PM

## Duplicate Sample Summary

Original Sample ID: 1211172004

Duplicate Sample ID: 1603157

Analysis Date: 03/17/2021 18:00

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172018, 1211172019

## Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	90.4	92.5	%	2.20	(< 15 )

## Batch Information

Analytical Batch: SPT11232

Analytical Method: SM21 2540G

Instrument:

Analyst: IVM

## Duplicate Sample Summary

Original Sample ID: 1211172002

Duplicate Sample ID: 1603158

QC for Samples:

1211172001, 1211172002, 1211172003, 1211172004

Analysis Date: 03/17/2021 18:00

Matrix: Soil/Solid (dry weight)

## Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	84.7	85.3	%	0.70	(< 15 )

## Batch Information

Analytical Batch: SPT11232

Analytical Method: SM21 2540G

Instrument:

Analyst: IVM



### Method Blank

Blank ID: MB for HBN 1816976 [SPT/11233]  
Blank Lab ID: 1603378

Matrix: Soil/Solid (dry weight)

#### QC for Samples:

1211172017, 1211172020, 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027,  
1211172028, 1211172029, 1211172030, 1211172031, 1211172032

### Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

### Batch Information

Analytical Batch: SPT11233  
Analytical Method: SM21 2540G  
Instrument:  
Analyst: MDT  
Analytical Date/Time: 3/18/2021 5:15:00PM

Print Date: 04/01/2021 3:16:35PM



### Duplicate Sample Summary

Original Sample ID: 1211172032

Duplicate Sample ID: 1603379

Analysis Date: 03/18/2021 17:15

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211172017, 1211172020, 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032

### Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	96.4	96.3	%	0.17	(< 15 )

### Batch Information

Analytical Batch: SPT11233

Analytical Method: SM21 2540G

Instrument:

Analyst: MDT

Print Date: 04/01/2021 3:16:36PM



### Method Blank

Blank ID: MB for HBN 1817074 [SPT/11234]  
Blank Lab ID: 1603627

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211172033, 1211172034, 1211172035, 1211172036, 1211172037, 1211172038

### Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

### Batch Information

Analytical Batch: SPT11234  
Analytical Method: SM21 2540G  
Instrument:  
Analyst: MDT  
Analytical Date/Time: 3/22/2021 4:30:00PM

Print Date: 04/01/2021 3:16:44PM



### Duplicate Sample Summary

Original Sample ID: 1211172033

Duplicate Sample ID: 1603628

QC for Samples:

1211172033, 1211172034, 1211172035, 1211172036, 1211172037, 1211172038

Analysis Date: 03/22/2021 16:30

Matrix: Soil/Solid (dry weight)

### Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	94.0	93.9	%	0.16	(< 15 )

### Batch Information

Analytical Batch: SPT11234

Analytical Method: SM21 2540G

Instrument:

Analyst: MDT

Print Date: 04/01/2021 3:16:46PM

## Method Blank

Blank ID: MB for HBN 1817049 [VXX/36886]  
 Blank Lab ID: 1603500

Matrix: Soil/Solid (dry weight)

### QC for Samples:

1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009,  
 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018,  
 1211172019, 1211172020

## Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.25U	2.50	0.750	mg/kg
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	97.3	50-150		%

## Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Instrument: Agilent 7890 PID/FID  
 Analyst: S.S  
 Analytical Date/Time: 3/19/2021 4:25:00PM

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 3/19/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 50 g  
 Prep Extract Vol: 25 mL





### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36886]  
 Blank Spike Lab ID: 1603501  
 Date Analyzed: 03/19/2021 15:49

Spike Duplicate ID: LCSD for HBN 1211172 [VXX36886]  
 Spike Duplicate Lab ID: 1603502  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020

### Results by AK101

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	13.9	112	12.5	13.3	106	( 60-120 )	4.90	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	1.25		103	1.25		104	( 50-150 )	1.50	
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### Batch Information

Analytical Batch: VFC15522  
 Analytical Method: AK101  
 Instrument: Agilent 7890 PID/FID  
 Analyst: S.S

Prep Batch: VXX36886  
 Prep Method: SW5035A  
 Prep Date/Time: 03/19/2021 06:00  
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 04/01/2021 3:16:53PM



### Method Blank

Blank ID: MB for HBN 1817084 [VXX/36889]  
Blank Lab ID: 1603693

Matrix: Soil/Solid (dry weight)

#### QC for Samples:

1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029,  
1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172037, 1211172038,  
1211172039, 1211172040

### Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.952J	2.50	0.750	mg/kg
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	94.1	50-150		%

### Batch Information

Analytical Batch: VFC15525  
Analytical Method: AK101  
Instrument: Agilent 7890A PID/FID  
Analyst: MDT  
Analytical Date/Time: 3/22/2021 4:35:00PM

Prep Batch: VXX36889  
Prep Method: SW5035A  
Prep Date/Time: 3/22/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 04/01/2021 3:16:55PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36889]  
 Blank Spike Lab ID: 1603694  
 Date Analyzed: 03/22/2021 16:00

Spike Duplicate ID: LCSD for HBN 1211172 [VXX36889]  
 Spike Duplicate Lab ID: 1603695  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172037, 1211172038, 1211172039, 1211172040

### Results by AK101

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	13.5	108	12.5	13.9	111	( 60-120 )	2.80	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	1.25		85	1.25		98	( 50-150 )	14.10	
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### Batch Information

Analytical Batch: **VFC15525**  
 Analytical Method: **AK101**  
 Instrument: **Agilent 7890A PID/FID**  
 Analyst: **MDT**

Prep Batch: **VXX36889**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **03/22/2021 06:00**  
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 04/01/2021 3:16:58PM



### Method Blank

Blank ID: MB for HBN 1817092 [VXX/36891]  
Blank Lab ID: 1603736

Matrix: Soil/Solid (dry weight)

#### QC for Samples:

1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009,  
1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018,  
1211172019, 1211172020

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.0100U	0.0200	0.00620	mg/kg
1,1,1-Trichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1,2,2-Tetrachloroethane	0.00100U	0.00200	0.000620	mg/kg
1,1,2-Trichloroethane	0.000400U	0.000800	0.000250	mg/kg
1,1-Dichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloropropene	0.0125U	0.0250	0.00780	mg/kg
1,2,3-Trichlorobenzene	0.0250U	0.0500	0.0150	mg/kg
1,2,3-Trichloropropane	0.00100U	0.00200	0.000620	mg/kg
1,2,4-Trichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2,4-Trimethylbenzene	0.0250U	0.0500	0.0150	mg/kg
1,2-Dibromo-3-chloropropane	0.0500U	0.100	0.0310	mg/kg
1,2-Dibromoethane	0.000500U	0.00100	0.000400	mg/kg
1,2-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2-Dichloroethane	0.00100U	0.00200	0.000700	mg/kg
1,2-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,3,5-Trimethylbenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,4-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
2,2-Dichloropropane	0.0125U	0.0250	0.00780	mg/kg
2-Butanone (MEK)	0.125U	0.250	0.0780	mg/kg
2-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
2-Hexanone	0.0500U	0.100	0.0310	mg/kg
4-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
4-Isopropyltoluene	0.0500U	0.100	0.0250	mg/kg
4-Methyl-2-pentanone (MIBK)	0.125U	0.250	0.0780	mg/kg
Acetone	0.125U	0.250	0.0780	mg/kg
Benzene	0.00625U	0.0125	0.00390	mg/kg
Bromobenzene	0.0125U	0.0250	0.00780	mg/kg
Bromochloromethane	0.0125U	0.0250	0.00780	mg/kg
Bromodichloromethane	0.00100U	0.00200	0.000620	mg/kg
Bromoform	0.0125U	0.0250	0.00780	mg/kg
Bromomethane	0.0100U	0.0200	0.00620	mg/kg
Carbon disulfide	0.0500U	0.100	0.0310	mg/kg
Carbon tetrachloride	0.00625U	0.0125	0.00390	mg/kg
Chlorobenzene	0.0125U	0.0250	0.00780	mg/kg
Chloroethane	0.100U	0.200	0.0620	mg/kg

Print Date: 04/01/2021 3:17:01PM

## Method Blank

Blank ID: MB for HBN 1817092 [VXX/36891]  
 Blank Lab ID: 1603736

Matrix: Soil/Solid (dry weight)

### QC for Samples:

1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloroform	0.00200U	0.00400	0.00100	mg/kg
Chloromethane	0.0125U	0.0250	0.00780	mg/kg
cis-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
cis-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Dibromochloromethane	0.00250U	0.00500	0.00150	mg/kg
Dibromomethane	0.0125U	0.0250	0.00780	mg/kg
Dichlorodifluoromethane	0.0250U	0.0500	0.0150	mg/kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/kg
Freon-113	0.0500U	0.100	0.0310	mg/kg
Hexachlorobutadiene	0.0100U	0.0200	0.00620	mg/kg
Isopropylbenzene (Cumene)	0.0125U	0.0250	0.00780	mg/kg
Methylene chloride	0.0500U	0.100	0.0310	mg/kg
Methyl-t-butyl ether	0.0500U	0.100	0.0310	mg/kg
Naphthalene	0.0125U	0.0250	0.00780	mg/kg
n-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
n-Propylbenzene	0.0125U	0.0250	0.00780	mg/kg
o-Xylene	0.0125U	0.0250	0.00780	mg/kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/kg
sec-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Styrene	0.0125U	0.0250	0.00780	mg/kg
tert-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Tetrachloroethene	0.00625U	0.0125	0.00390	mg/kg
Toluene	0.0125U	0.0250	0.00780	mg/kg
trans-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
trans-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Trichloroethene	0.00250U	0.00500	0.00150	mg/kg
Trichlorofluoromethane	0.0250U	0.0500	0.0150	mg/kg
Vinyl acetate	0.0500U	0.100	0.0310	mg/kg
Vinyl chloride	0.000400U	0.000800	0.000250	mg/kg
Xylenes (total)	0.0375U	0.0750	0.0228	mg/kg

### Surrogates

1,2-Dichloroethane-D4 (surr)	102	71-136	%
4-Bromofluorobenzene (surr)	90.1	55-151	%
Toluene-d8 (surr)	94.3	85-116	%



**Method Blank**

Blank ID: MB for HBN 1817092 [VXX/36891]  
Blank Lab ID: 1603736

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009,  
1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018,  
1211172019, 1211172020

Results by **SW8260D**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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**Batch Information**

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: JMG  
Analytical Date/Time: 3/18/2021 12:32:00PM

Prep Batch: VXX36891  
Prep Method: SW5035A  
Prep Date/Time: 3/18/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 04/01/2021 3:17:01PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36891]

Blank Spike Lab ID: 1603737

Date Analyzed: 03/18/2021 12:47

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
1,1,1,2-Tetrachloroethane	0.750	0.721	96	(78-125)
1,1,1-Trichloroethane	0.750	0.795	106	(73-130)
1,1,2,2-Tetrachloroethane	0.750	0.701	93	(70-124)
1,1,2-Trichloroethane	0.750	0.713	95	(78-121)
1,1-Dichloroethane	0.750	0.767	102	(76-125)
1,1-Dichloroethene	0.750	0.814	109	(70-131)
1,1-Dichloropropene	0.750	0.776	104	(76-125)
1,2,3-Trichlorobenzene	0.750	0.672	90	(66-130)
1,2,3-Trichloropropane	0.750	0.670	89	(73-125)
1,2,4-Trichlorobenzene	0.750	0.702	94	(67-129)
1,2,4-Trimethylbenzene	0.750	0.695	93	(75-123)
1,2-Dibromo-3-chloropropane	0.750	0.705	94	(61-132)
1,2-Dibromoethane	0.750	0.723	96	(78-122)
1,2-Dichlorobenzene	0.750	0.689	92	(78-121)
1,2-Dichloroethane	0.750	0.743	99	(73-128)
1,2-Dichloropropane	0.750	0.785	105	(76-123)
1,3,5-Trimethylbenzene	0.750	0.687	92	(73-124)
1,3-Dichlorobenzene	0.750	0.698	93	(77-121)
1,3-Dichloropropane	0.750	0.703	94	(77-121)
1,4-Dichlorobenzene	0.750	0.694	93	(75-120)
2,2-Dichloropropane	0.750	0.844	112	(67-133)
2-Butanone (MEK)	2.25	2.57	114	(51-148)
2-Chlorotoluene	0.750	0.693	92	(75-122)
2-Hexanone	2.25	2.24	99	(53-145)
4-Chlorotoluene	0.750	0.708	94	(72-124)
4-Isopropyltoluene	0.750	0.704	94	(73-127)
4-Methyl-2-pentanone (MIBK)	2.25	2.48	110	(65-135)
Acetone	2.25	2.25	100	(36-164)
Benzene	0.750	0.766	102	(77-121)
Bromobenzene	0.750	0.703	94	(78-121)
Bromochloromethane	0.750	0.763	102	(78-125)
Bromodichloromethane	0.750	0.854	114	(75-127)
Bromoform	0.750	0.793	106	(67-132)
Bromomethane	0.750	0.859	115	(53-143)

Print Date: 04/01/2021 3:17:03PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36891]

Blank Spike Lab ID: 1603737

Date Analyzed: 03/18/2021 12:47

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
Carbon disulfide	1.13	1.45	129	(63-132)
Carbon tetrachloride	0.750	0.835	111	(70-135)
Chlorobenzene	0.750	0.714	95	(79-120)
Chloroethane	0.750	0.807	108	(59-139)
Chloroform	0.750	0.728	97	(78-123)
Chloromethane	0.750	0.767	102	(50-136)
cis-1,2-Dichloroethene	0.750	0.755	101	(77-123)
cis-1,3-Dichloropropene	0.750	0.866	115	(74-126)
Dibromochloromethane	0.750	0.800	107	(74-126)
Dibromomethane	0.750	0.796	106	(78-125)
Dichlorodifluoromethane	0.750	0.766	102	(29-149)
Ethylbenzene	0.750	0.691	92	(76-122)
Freon-113	1.13	1.34	119	(66-136)
Hexachlorobutadiene	0.750	0.748	100	(61-135)
Isopropylbenzene (Cumene)	0.750	0.708	94	(68-134)
Methylene chloride	0.750	0.838	112	(70-128)
Methyl-t-butyl ether	1.13	1.19	106	(73-125)
Naphthalene	0.750	0.638	85	(62-129)
n-Butylbenzene	0.750	0.729	97	(70-128)
n-Propylbenzene	0.750	0.700	93	(73-125)
o-Xylene	0.750	0.694	93	(77-123)
P & M -Xylene	1.50	1.38	92	(77-124)
sec-Butylbenzene	0.750	0.683	91	(73-126)
Styrene	0.750	0.715	95	(76-124)
tert-Butylbenzene	0.750	0.680	91	(73-125)
Tetrachloroethene	0.750	0.721	96	(73-128)
Toluene	0.750	0.670	89	(77-121)
trans-1,2-Dichloroethene	0.750	0.821	109	(74-125)
trans-1,3-Dichloropropene	0.750	0.773	103	(71-130)
Trichloroethene	0.750	0.810	108	(77-123)
Trichlorofluoromethane	0.750	0.954	127	(62-140)
Vinyl acetate	0.750	0.917	122	(50-151)
Vinyl chloride	0.750	0.853	114	(56-135)
Xylenes (total)	2.25	2.07	92	(78-124)

Print Date: 04/01/2021 3:17:03PM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36891]  
 Blank Spike Lab ID: 1603737  
 Date Analyzed: 03/18/2021 12:47

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007,  
 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014,  
 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	0.750		99	( 71-136 )
4-Bromofluorobenzene (surr)	0.750		90	( 55-151 )
Toluene-d8 (surr)	0.750		94	( 85-116 )

## Batch Information

Analytical Batch: **VMS20611**  
 Analytical Method: **SW8260D**  
 Instrument: **VRA Agilent GC/MS 7890B/5977A**  
 Analyst: **JMG**

Prep Batch: **VXX36891**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **03/18/2021 06:00**  
 Spike Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: Extract Vol:

### Matrix Spike Summary

Original Sample ID: 1211172001  
 MS Sample ID: 1603738 MS  
 MSD Sample ID: 1603739 MSD

Analysis Date: 03/18/2021 15:30  
 Analysis Date: 03/18/2021 14:12  
 Analysis Date: 03/18/2021 14:28  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020

### Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	0.0106U	0.669	0.652	98	0.669	0.642	96	78-125	1.60	(< 20)
1,1,1-Trichloroethane	0.0132U	0.669	0.712	107	0.669	0.706	106	73-130	0.85	(< 20)
1,1,2,2-Tetrachloroethane	0.00105U	0.669	0.632	95	0.669	0.636	95	70-124	0.70	(< 20)
1,1,2-Trichloroethane	0.000423U	0.669	0.652	98	0.669	0.653	98	78-121	0.14	(< 20)
1,1-Dichloroethane	0.0132U	0.669	0.685	102	0.669	0.684	102	76-125	0.13	(< 20)
1,1-Dichloroethene	0.0132U	0.669	0.737	110	0.669	0.723	108	70-131	1.90	(< 20)
1,1-Dichloropropene	0.0132U	0.669	0.695	104	0.669	0.690	103	76-125	0.58	(< 20)
1,2,3-Trichlorobenzene	0.0265U	0.669	0.552	83	0.669	0.634	95	66-130	13.90	(< 20)
1,2,3-Trichloropropane	0.00105U	0.669	0.605	91	0.669	0.603	90	73-125	0.37	(< 20)
1,2,4-Trichlorobenzene	0.0132U	0.669	0.603	90	0.669	0.637	95	67-129	5.70	(< 20)
1,2,4-Trimethylbenzene	0.0265U	0.669	0.614	92	0.669	0.616	92	75-123	0.22	(< 20)
1,2-Dibromo-3-chloropropane	0.0530U	0.669	0.614	92	0.669	0.632	95	61-132	2.90	(< 20)
1,2-Dibromoethane	0.000530U	0.669	0.656	98	0.669	0.655	98	78-122	0.24	(< 20)
1,2-Dichlorobenzene	0.0132U	0.669	0.595	89	0.669	0.606	91	78-121	1.90	(< 20)
1,2-Dichloroethane	0.00105U	0.669	0.666	100	0.669	0.662	99	73-128	0.54	(< 20)
1,2-Dichloropropane	0.00530U	0.669	0.699	105	0.669	0.696	104	76-123	0.54	(< 20)
1,3,5-Trimethylbenzene	0.0132U	0.669	0.610	91	0.669	0.603	90	73-124	1.30	(< 20)
1,3-Dichlorobenzene	0.0132U	0.669	0.615	92	0.669	0.611	92	77-121	0.47	(< 20)
1,3-Dichloropropane	0.00530U	0.669	0.639	95	0.669	0.632	95	77-121	0.98	(< 20)
1,4-Dichlorobenzene	0.0132U	0.669	0.611	91	0.669	0.608	91	75-120	0.48	(< 20)
2,2-Dichloropropane	0.0132U	0.669	0.759	113	0.669	0.754	113	67-133	0.53	(< 20)
2-Butanone (MEK)	0.132U	2.00	2.36	118	2.00	2.35	117	51-148	0.75	(< 20)
2-Chlorotoluene	0.0132U	0.669	0.607	91	0.669	0.616	92	75-122	1.50	(< 20)
2-Hexanone	0.0530U	2.00	2.09	104	2.00	2.07	103	53-145	0.88	(< 20)
4-Chlorotoluene	0.0132U	0.669	0.608	91	0.669	0.617	92	72-124	1.30	(< 20)
4-Isopropyltoluene	0.0530U	0.669	0.631	94	0.669	0.613	92	73-127	3.00	(< 20)
4-Methyl-2-pentanone (MIBK)	0.132U	2.00	2.27	113	2.00	2.27	113	65-135	0.06	(< 20)
Acetone	0.132U	2.00	2.13	106	2.00	2.10	105	36-164	1.20	(< 20)
Benzene	0.00660U	0.669	0.686	103	0.669	0.682	102	77-121	0.55	(< 20)
Bromobenzene	0.0132U	0.669	0.622	93	0.669	0.618	92	78-121	0.75	(< 20)
Bromochloromethane	0.0132U	0.669	0.687	103	0.669	0.685	102	78-125	0.39	(< 20)
Bromodichloromethane	0.00105U	0.669	0.762	114	0.669	0.760	114	75-127	0.32	(< 20)
Bromoform	0.0132U	0.669	0.725	109	0.669	0.719	108	67-132	0.89	(< 20)
Bromomethane	0.0106U	0.669	0.759	113	0.669	0.778	116	53-143	2.60	(< 20)
Carbon disulfide	0.0530U	1.00	1.32	131	1.00	1.30	130	63-132	1.00	(< 20)
Carbon tetrachloride	0.00660U	0.669	0.750	112	0.669	0.746	111	70-135	0.63	(< 20)
Chlorobenzene	0.0132U	0.669	0.628	94	0.669	0.620	93	79-120	1.30	(< 20)

Print Date: 04/01/2021 3:17:05PM



### Matrix Spike Summary

Original Sample ID: 1211172001  
 MS Sample ID: 1603738 MS  
 MSD Sample ID: 1603739 MSD

Analysis Date: 03/18/2021 15:30  
 Analysis Date: 03/18/2021 14:12  
 Analysis Date: 03/18/2021 14:28  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020

### Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloroethane	0.106U	0.669	0.707	106	0.669	0.715	107	59-139	1.20	(< 20)
Chloroform	0.00211J	0.669	0.650	97	0.669	0.648	97	78-123	0.34	(< 20)
Chloromethane	0.0132U	0.669	0.701	105	0.669	0.685	103	50-136	2.30	(< 20)
cis-1,2-Dichloroethene	0.0132U	0.669	0.690	103	0.669	0.685	103	77-123	0.81	(< 20)
cis-1,3-Dichloropropene	0.00660U	0.669	0.771	115	0.669	0.766	115	74-126	0.58	(< 20)
Dibromochloromethane	0.00265U	0.669	0.735	110	0.669	0.728	109	74-126	0.97	(< 20)
Dibromomethane	0.0132U	0.669	0.716	107	0.669	0.714	107	78-125	0.28	(< 20)
Dichlorodifluoromethane	0.0265U	0.669	0.671	100	0.669	0.645	97	29-149	3.90	(< 20)
Ethylbenzene	0.0132U	0.669	0.620	93	0.669	0.613	92	76-122	1.20	(< 20)
Freon-113	0.0530U	1.00	1.21	121	1.00	1.18	118	66-136	2.50	(< 20)
Hexachlorobutadiene	0.0106U	0.669	0.856	128	0.669	0.851	127	61-135	0.55	(< 20)
Isopropylbenzene (Cumene)	0.0132U	0.669	0.630	94	0.669	0.620	93	68-134	1.50	(< 20)
Methylene chloride	0.0530U	0.669	0.685	102	0.669	0.699	105	70-128	2.00	(< 20)
Methyl-t-butyl ether	0.0530U	1.00	1.07	107	1.00	1.08	107	73-125	0.50	(< 20)
Naphthalene	0.0132U	0.669	0.542	81	0.669	0.597	89	62-129	9.70	(< 20)
n-Butylbenzene	0.0132U	0.669	0.666	100	0.669	0.663	99	70-128	0.40	(< 20)
n-Propylbenzene	0.0132U	0.669	0.627	94	0.669	0.623	93	73-125	0.61	(< 20)
o-Xylene	0.0132U	0.669	0.619	93	0.669	0.615	92	77-123	0.65	(< 20)
P & M -Xylene	0.0265U	1.34	1.23	93	1.34	1.22	91	77-124	1.30	(< 20)
sec-Butylbenzene	0.0132U	0.669	0.607	91	0.669	0.596	89	73-126	1.70	(< 20)
Styrene	0.0132U	0.669	0.643	96	0.669	0.632	95	76-124	1.60	(< 20)
tert-Butylbenzene	0.0132U	0.669	0.605	90	0.669	0.602	90	73-125	0.52	(< 20)
Tetrachloroethene	0.00660U	0.669	0.617	92	0.669	0.654	98	73-128	5.80	(< 20)
Toluene	0.00978J	0.669	0.611	90	0.669	0.604	89	77-121	1.20	(< 20)
trans-1,2-Dichloroethene	0.0132U	0.669	0.738	110	0.669	0.736	110	74-125	0.30	(< 20)
trans-1,3-Dichloropropene	0.00660U	0.669	0.699	105	0.669	0.700	105	71-130	0.13	(< 20)
Trichloroethene	0.00265U	0.669	0.723	108	0.669	0.715	107	77-123	0.93	(< 20)
Trichlorofluoromethane	0.0265U	0.669	0.771	115	0.669	0.865	129	62-140	11.40	(< 20)
Vinyl acetate	0.0530U	0.669	0.840	126	0.669	0.837	125	50-151	0.40	(< 20)
Vinyl chloride	0.00291	0.669	0.764	114	0.669	0.750	112	56-135	1.90	(< 20)
Xylenes (total)	0.0396U	2.00	1.86	93	2.00	1.84	92	78-124	1.10	(< 20)
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		0.669	0.668	100	0.669	0.661	99	71-136	1.00	
4-Bromofluorobenzene (surr)		1.11	0.758	68	1.11	0.759	68	55-151	0.15	
Toluene-d8 (surr)		0.669	0.640	96	0.669	0.633	95	85-116	1.00	

Print Date: 04/01/2021 3:17:05PM



### Matrix Spike Summary

Original Sample ID: 1211172001  
MS Sample ID: 1603738 MS  
MSD Sample ID: 1603739 MSD

Analysis Date:  
Analysis Date: 03/18/2021 14:12  
Analysis Date: 03/18/2021 14:28  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011, 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020

### Results by SW8260D

Parameter	Sample	Matrix Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			

### Batch Information

Analytical Batch: VMS20611  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: JMG  
Analytical Date/Time: 3/18/2021 2:12:00PM

Prep Batch: VXX36891  
Prep Method: Vol. Extraction SW8260 Field Extracted L  
Prep Date/Time: 3/18/2021 6:00:00AM  
Prep Initial Wt./Vol.: 60.71g  
Prep Extract Vol: 25.00mL

Print Date: 04/01/2021 3:17:05PM



### Method Blank

Blank ID: MB for HBN 1817151 [VXX/36895]  
Blank Lab ID: 1603921

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029,  
1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172039, 1211172040

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.0100U	0.0200	0.00620	mg/kg
1,1,1-Trichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1,2,2-Tetrachloroethane	0.00100U	0.00200	0.000620	mg/kg
1,1,2-Trichloroethane	0.000400U	0.000800	0.000250	mg/kg
1,1-Dichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloropropene	0.0125U	0.0250	0.00780	mg/kg
1,2,3-Trichlorobenzene	0.0250U	0.0500	0.0150	mg/kg
1,2,3-Trichloropropane	0.00100U	0.00200	0.000620	mg/kg
1,2,4-Trichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2,4-Trimethylbenzene	0.0250U	0.0500	0.0150	mg/kg
1,2-Dibromo-3-chloropropane	0.0500U	0.100	0.0310	mg/kg
1,2-Dibromoethane	0.000500U	0.00100	0.000400	mg/kg
1,2-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2-Dichloroethane	0.00100U	0.00200	0.000700	mg/kg
1,2-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,3,5-Trimethylbenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,4-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
2,2-Dichloropropane	0.0125U	0.0250	0.00780	mg/kg
2-Butanone (MEK)	0.125U	0.250	0.0780	mg/kg
2-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
2-Hexanone	0.0500U	0.100	0.0310	mg/kg
4-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
4-Isopropyltoluene	0.0500U	0.100	0.0250	mg/kg
4-Methyl-2-pentanone (MIBK)	0.125U	0.250	0.0780	mg/kg
Acetone	0.125U	0.250	0.0780	mg/kg
Benzene	0.00625U	0.0125	0.00390	mg/kg
Bromobenzene	0.0125U	0.0250	0.00780	mg/kg
Bromochloromethane	0.0125U	0.0250	0.00780	mg/kg
Bromodichloromethane	0.00100U	0.00200	0.000620	mg/kg
Bromoform	0.0125U	0.0250	0.00780	mg/kg
Bromomethane	0.0100U	0.0200	0.00620	mg/kg
Carbon disulfide	0.0500U	0.100	0.0310	mg/kg
Carbon tetrachloride	0.00625U	0.0125	0.00390	mg/kg
Chlorobenzene	0.0125U	0.0250	0.00780	mg/kg
Chloroethane	0.100U	0.200	0.0620	mg/kg

Print Date: 04/01/2021 3:17:06PM



### Method Blank

Blank ID: MB for HBN 1817151 [VXX/36895]  
Blank Lab ID: 1603921

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172039, 1211172040

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloroform	0.00200U	0.00400	0.00100	mg/kg
Chloromethane	0.0125U	0.0250	0.00780	mg/kg
cis-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
cis-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Dibromochloromethane	0.00250U	0.00500	0.00150	mg/kg
Dibromomethane	0.0125U	0.0250	0.00780	mg/kg
Dichlorodifluoromethane	0.0250U	0.0500	0.0150	mg/kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/kg
Freon-113	0.0500U	0.100	0.0310	mg/kg
Hexachlorobutadiene	0.0100U	0.0200	0.00620	mg/kg
Isopropylbenzene (Cumene)	0.0125U	0.0250	0.00780	mg/kg
Methylene chloride	0.0500U	0.100	0.0310	mg/kg
Methyl-t-butyl ether	0.0500U	0.100	0.0310	mg/kg
Naphthalene	0.0125U	0.0250	0.00780	mg/kg
n-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
n-Propylbenzene	0.0125U	0.0250	0.00780	mg/kg
o-Xylene	0.0125U	0.0250	0.00780	mg/kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/kg
sec-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Styrene	0.0125U	0.0250	0.00780	mg/kg
tert-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Tetrachloroethene	0.00625U	0.0125	0.00390	mg/kg
Toluene	0.0125U	0.0250	0.00780	mg/kg
trans-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
trans-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Trichloroethene	0.00250U	0.00500	0.00150	mg/kg
Trichlorofluoromethane	0.0250U	0.0500	0.0150	mg/kg
Vinyl acetate	0.0500U	0.100	0.0310	mg/kg
Vinyl chloride	0.000400U	0.000800	0.000250	mg/kg
Xylenes (total)	0.0375U	0.0750	0.0228	mg/kg

### Surrogates

1,2-Dichloroethane-D4 (surr)	102	71-136	%
4-Bromofluorobenzene (surr)	98.8	55-151	%
Toluene-d8 (surr)	98.2	85-116	%

Print Date: 04/01/2021 3:17:06PM



**Method Blank**

Blank ID: MB for HBN 1817151 [VXX/36895]  
Blank Lab ID: 1603921

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172039, 1211172040

**Results by SW8260D**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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**Batch Information**

Analytical Batch: VMS20615  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: JMG  
Analytical Date/Time: 3/24/2021 10:31:00AM

Prep Batch: VXX36895  
Prep Method: SW5035A  
Prep Date/Time: 3/24/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 04/01/2021 3:17:06PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36895]

Blank Spike Lab ID: 1603922

Date Analyzed: 03/24/2021 14:42

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172039, 1211172040

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
1,1,1,2-Tetrachloroethane	0.750	0.800	107	(78-125)
1,1,1-Trichloroethane	0.750	0.759	101	(73-130)
1,1,2,2-Tetrachloroethane	0.750	0.822	110	(70-124)
1,1,2-Trichloroethane	0.750	0.758	101	(78-121)
1,1-Dichloroethane	0.750	0.724	97	(76-125)
1,1-Dichloroethene	0.750	0.720	96	(70-131)
1,1-Dichloropropene	0.750	0.760	101	(76-125)
1,2,3-Trichlorobenzene	0.750	0.910	121	(66-130)
1,2,3-Trichloropropane	0.750	0.775	103	(73-125)
1,2,4-Trichlorobenzene	0.750	0.835	111	(67-129)
1,2,4-Trimethylbenzene	0.750	0.785	105	(75-123)
1,2-Dibromo-3-chloropropane	0.750	0.861	115	(61-132)
1,2-Dibromoethane	0.750	0.787	105	(78-122)
1,2-Dichlorobenzene	0.750	0.782	104	(78-121)
1,2-Dichloroethane	0.750	0.721	96	(73-128)
1,2-Dichloropropane	0.750	0.777	104	(76-123)
1,3,5-Trimethylbenzene	0.750	0.788	105	(73-124)
1,3-Dichlorobenzene	0.750	0.788	105	(77-121)
1,3-Dichloropropane	0.750	0.779	104	(77-121)
1,4-Dichlorobenzene	0.750	0.801	107	(75-120)
2,2-Dichloropropane	0.750	0.759	101	(67-133)
2-Butanone (MEK)	2.25	2.48	110	(51-148)
2-Chlorotoluene	0.750	0.789	105	(75-122)
2-Hexanone	2.25	2.44	109	(53-145)
4-Chlorotoluene	0.750	0.777	104	(72-124)
4-Isopropyltoluene	0.750	0.789	105	(73-127)
4-Methyl-2-pentanone (MIBK)	2.25	2.24	99	(65-135)
Acetone	2.25	2.05	91	(36-164)
Benzene	0.750	0.743	99	(77-121)
Bromobenzene	0.750	0.801	107	(78-121)
Bromochloromethane	0.750	0.747	100	(78-125)
Bromodichloromethane	0.750	0.819	109	(75-127)
Bromoform	0.750	0.764	102	(67-132)
Bromomethane	0.750	0.739	99	(53-143)

Print Date: 04/01/2021 3:17:09PM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36895]

Blank Spike Lab ID: 1603922

Date Analyzed: 03/24/2021 14:42

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172039, 1211172040

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
Carbon disulfide	1.13	1.15	102	(63-132)
Carbon tetrachloride	0.750	0.785	105	(70-135)
Chlorobenzene	0.750	0.761	101	(79-120)
Chloroethane	0.750	0.664	89	(59-139)
Chloroform	0.750	0.746	99	(78-123)
Chloromethane	0.750	0.657	88	(50-136)
cis-1,2-Dichloroethene	0.750	0.757	101	(77-123)
cis-1,3-Dichloropropene	0.750	0.767	102	(74-126)
Dibromochloromethane	0.750	0.771	103	(74-126)
Dibromomethane	0.750	0.784	104	(78-125)
Dichlorodifluoromethane	0.750	0.619	83	(29-149)
Ethylbenzene	0.750	0.763	102	(76-122)
Freon-113	1.13	1.05	94	(66-136)
Hexachlorobutadiene	0.750	0.812	108	(61-135)
Isopropylbenzene (Cumene)	0.750	0.755	101	(68-134)
Methylene chloride	0.750	0.712	95	(70-128)
Methyl-t-butyl ether	1.13	1.08	96	(73-125)
Naphthalene	0.750	0.850	113	(62-129)
n-Butylbenzene	0.750	0.812	108	(70-128)
n-Propylbenzene	0.750	0.792	106	(73-125)
o-Xylene	0.750	0.758	101	(77-123)
P & M -Xylene	1.50	1.47	98	(77-124)
sec-Butylbenzene	0.750	0.783	104	(73-126)
Styrene	0.750	0.780	104	(76-124)
tert-Butylbenzene	0.750	0.770	103	(73-125)
Tetrachloroethene	0.750	0.746	99	(73-128)
Toluene	0.750	0.746	99	(77-121)
trans-1,2-Dichloroethene	0.750	0.691	92	(74-125)
trans-1,3-Dichloropropene	0.750	0.834	111	(71-130)
Trichloroethene	0.750	0.763	102	(77-123)
Trichlorofluoromethane	0.750	0.712	95	(62-140)
Vinyl acetate	0.750	0.828	110	(50-151)
Vinyl chloride	0.750	0.667	89	(56-135)
Xylenes (total)	2.25	2.23	99	(78-124)

Print Date: 04/01/2021 3:17:09PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36895]  
 Blank Spike Lab ID: 1603922  
 Date Analyzed: 03/24/2021 14:42

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027,  
 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034,  
 1211172035, 1211172036, 1211172039, 1211172040

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	0.750		99	( 71-136 )
4-Bromofluorobenzene (surr)	0.750		99	( 55-151 )
Toluene-d8 (surr)	0.750		100	( 85-116 )

## Batch Information

Analytical Batch: **VMS20615**  
 Analytical Method: **SW8260D**  
 Instrument: **VRA Agilent GC/MS 7890B/5977A**  
 Analyst: **JMG**

Prep Batch: **VXX36895**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **03/24/2021 06:00**  
 Spike Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: Extract Vol:



### Matrix Spike Summary

Original Sample ID: 1603925  
 MS Sample ID: 1603923 MS  
 MSD Sample ID: 1603924 MSD

Analysis Date: 03/24/2021 15:28  
 Analysis Date: 03/24/2021 14:57  
 Analysis Date: 03/24/2021 15:13  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172039, 1211172040

### Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	0.0185U	1.38	1.47	106	1.38	1.46	105	78-125	0.98	(< 20)
1,1,1-Trichloroethane	0.0231U	1.38	1.41	102	1.38	1.41	102	73-130	0.16	(< 20)
1,1,2,2-Tetrachloroethane	0.00185U	1.38	1.47	106	1.38	1.46	106	70-124	0.38	(< 20)
1,1,2-Trichloroethane	0.000740U	1.38	1.39	100	1.38	1.35	98	78-121	2.60	(< 20)
1,1-Dichloroethane	0.0231U	1.38	1.42	103	1.38	1.34	97	76-125	6.10	(< 20)
1,1-Dichloroethene	0.0231U	1.38	1.38	100	1.38	1.40	101	70-131	1.40	(< 20)
1,1-Dichloropropene	0.0231U	1.38	1.40	101	1.38	1.40	101	76-125	0.33	(< 20)
1,2,3-Trichlorobenzene	0.226	1.38	1.57	97	1.38	1.42	86	66-130	10.10	(< 20)
1,2,3-Trichloropropane	0.00185U	1.38	1.42	103	1.38	1.41	102	73-125	0.59	(< 20)
1,2,4-Trichlorobenzene	0.0965	1.38	1.47	99	1.38	1.33	89	67-129	9.90	(< 20)
1,2,4-Trimethylbenzene	0.0461U	1.38	1.43	104	1.38	1.50	108	75-123	4.30	(< 20)
1,2-Dibromo-3-chloropropane	0.0925U	1.38	1.52	110	1.38	1.48	107	61-132	3.20	(< 20)
1,2-Dibromoethane	0.000925U	1.38	1.44	104	1.38	1.39	101	78-122	3.50	(< 20)
1,2-Dichlorobenzene	0.0231U	1.38	1.41	102	1.38	1.41	101	78-121	0.20	(< 20)
1,2-Dichloroethane	0.00185U	1.38	1.33	96	1.38	1.30	94	73-128	2.00	(< 20)
1,2-Dichloropropane	0.00925U	1.38	1.43	103	1.38	1.40	101	76-123	1.90	(< 20)
1,3,5-Trimethylbenzene	0.0231U	1.38	1.43	103	1.38	1.49	108	73-124	4.00	(< 20)
1,3-Dichlorobenzene	0.0231U	1.38	1.43	103	1.38	1.49	108	77-121	4.30	(< 20)
1,3-Dichloropropane	0.00925U	1.38	1.43	103	1.38	1.37	99	77-121	3.80	(< 20)
1,4-Dichlorobenzene	0.0231U	1.38	1.43	103	1.38	1.45	105	75-120	1.50	(< 20)
2,2-Dichloropropane	0.0231U	1.38	1.39	101	1.38	1.40	101	67-133	0.26	(< 20)
2-Butanone (MEK)	0.231U	4.15	4.62	111	4.15	4.31	104	51-148	7.00	(< 20)
2-Chlorotoluene	0.0231U	1.38	1.43	103	1.38	1.48	107	75-122	3.20	(< 20)
2-Hexanone	0.0925U	4.15	4.47	108	4.15	4.21	101	53-145	6.00	(< 20)
4-Chlorotoluene	0.0231U	1.38	1.40	101	1.38	1.45	105	72-124	3.80	(< 20)
4-Isopropyltoluene	0.0925U	1.38	1.44	104	1.38	1.51	109	73-127	4.40	(< 20)
4-Methyl-2-pentanone (MIBK)	0.231U	4.15	4.38	105	4.15	4.15	100	65-135	5.30	(< 20)
Acetone	0.231U	4.15	3.98	96	4.15	3.79	91	36-164	4.80	(< 20)
Benzene	0.0116U	1.38	1.37	99	1.38	1.35	98	77-121	1.50	(< 20)
Bromobenzene	0.0231U	1.38	1.44	104	1.38	1.49	107	78-121	3.10	(< 20)
Bromochloromethane	0.0231U	1.38	1.39	101	1.38	1.37	99	78-125	1.50	(< 20)
Bromodichloromethane	0.00185U	1.38	1.52	109	1.38	1.49	107	75-127	1.90	(< 20)
Bromoform	0.0231U	1.38	1.39	100	1.38	1.34	97	67-132	3.40	(< 20)
Bromomethane	0.0185U	1.38	1.40	101	1.38	1.49	107	53-143	6.00	(< 20)
Carbon disulfide	0.0925U	2.08	2.22	107	2.08	2.25	108	63-132	1.40	(< 20)
Carbon tetrachloride	0.0116U	1.38	1.47	106	1.38	1.47	106	70-135	0.16	(< 20)
Chlorobenzene	0.0231U	1.38	1.41	101	1.38	1.38	100	79-120	1.70	(< 20)

Print Date: 04/01/2021 3:17:11PM



### Matrix Spike Summary

Original Sample ID: 1603925  
 MS Sample ID: 1603923 MS  
 MSD Sample ID: 1603924 MSD

Analysis Date: 03/24/2021 15:28  
 Analysis Date: 03/24/2021 14:57  
 Analysis Date: 03/24/2021 15:13  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172039, 1211172040

### Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloroethane	0.185U	1.38	1.25	90	1.38	1.30	94	59-139	3.50	(< 20)
Chloroform	0.00369U	1.38	1.38	99	1.38	1.37	99	78-123	0.20	(< 20)
Chloromethane	0.0231U	1.38	1.26	91	1.38	1.33	96	50-136	5.00	(< 20)
cis-1,2-Dichloroethene	0.0231U	1.38	1.46	105	1.38	1.40	101	77-123	4.30	(< 20)
cis-1,3-Dichloropropene	0.0116U	1.38	1.50	109	1.38	1.48	107	74-126	1.50	(< 20)
Dibromochloromethane	0.00462U	1.38	1.41	102	1.38	1.37	99	74-126	3.20	(< 20)
Dibromomethane	0.0231U	1.38	1.44	104	1.38	1.40	101	78-125	3.00	(< 20)
Dichlorodifluoromethane	0.0461U	1.38	1.28	93	1.38	1.29	93	29-149	0.25	(< 20)
Ethylbenzene	0.0231U	1.38	1.39	100	1.38	1.39	101	76-122	0.23	(< 20)
Freon-113	0.0925U	2.08	2.02	97	2.08	2.04	98	66-136	1.00	(< 20)
Hexachlorobutadiene	0.0688	1.38	1.45	100	1.38	1.43	98	61-135	1.60	(< 20)
Isopropylbenzene (Cumene)	0.0231U	1.38	1.40	101	1.38	1.40	101	68-134	0.56	(< 20)
Methylene chloride	0.0925U	1.38	1.35	97	1.38	1.37	99	70-128	1.30	(< 20)
Methyl-t-butyl ether	0.0925U	2.08	2.13	103	2.08	1.98	95	73-125	7.40	(< 20)
Naphthalene	0.103	1.38	1.48	99	1.38	1.34	89	62-129	9.90	(< 20)
n-Butylbenzene	0.0231U	1.38	1.46	105	1.38	1.50	108	70-128	2.80	(< 20)
n-Propylbenzene	0.0231U	1.38	1.43	103	1.38	1.49	108	73-125	4.20	(< 20)
o-Xylene	0.0231U	1.38	1.38	100	1.38	1.39	101	77-123	1.00	(< 20)
P & M -Xylene	0.0461U	2.77	2.70	98	2.77	2.68	97	77-124	0.63	(< 20)
sec-Butylbenzene	0.0231U	1.38	1.44	104	1.38	1.49	108	73-126	3.60	(< 20)
Styrene	0.0231U	1.38	1.42	103	1.38	1.43	103	76-124	0.45	(< 20)
tert-Butylbenzene	0.0231U	1.38	1.40	101	1.38	1.47	106	73-125	4.80	(< 20)
Tetrachloroethene	0.0116U	1.38	1.40	101	1.38	1.42	102	73-128	1.30	(< 20)
Toluene	0.0231U	1.38	1.36	99	1.38	1.35	98	77-121	0.85	(< 20)
trans-1,2-Dichloroethene	0.0231U	1.38	1.37	99	1.38	1.39	101	74-125	1.60	(< 20)
trans-1,3-Dichloropropene	0.0116U	1.38	1.51	109	1.38	1.49	108	71-130	1.60	(< 20)
Trichloroethene	0.00462U	1.38	1.41	102	1.38	1.40	101	77-123	0.26	(< 20)
Trichlorofluoromethane	0.0461U	1.38	1.01	73	1.38	1.52	109	62-140	40.00	* (< 20)
Vinyl acetate	0.0925U	1.38	1.63	118	1.38	1.47	106	50-151	10.70	(< 20)
Vinyl chloride	0.000740U	1.38	1.33	96	1.38	1.30	94	56-135	2.10	(< 20)
Xylenes (total)	0.0690U	4.15	4.08	98	4.15	4.08	98	78-124	0.08	(< 20)
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		1.38	1.37	99	1.38	1.31	95	71-136	4.40	
4-Bromofluorobenzene (surr)		2.31	2.12	92	2.31	2.20	95	55-151	3.60	
Toluene-d8 (surr)		1.38	1.37	99	1.38	1.38	99	85-116	0.47	

Print Date: 04/01/2021 3:17:11PM

## Matrix Spike Summary

Original Sample ID: 1603925  
 MS Sample ID: 1603923 MS  
 MSD Sample ID: 1603924 MSD

Analysis Date:  
 Analysis Date: 03/24/2021 14:57  
 Analysis Date: 03/24/2021 15:13  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026, 1211172027,  
 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034,  
 1211172035, 1211172036, 1211172039, 1211172040

## Results by SW8260D

Parameter	Sample	Matrix Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			

## Batch Information

Analytical Batch: VMS20615  
 Analytical Method: SW8260D  
 Instrument: VRA Agilent GC/MS 7890B/5977A  
 Analyst: JMG  
 Analytical Date/Time: 3/24/2021 2:57:00PM

Prep Batch: VXX36895  
 Prep Method: Vol. Extraction SW8260 Field Extracted L  
 Prep Date/Time: 3/24/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 27.08g  
 Prep Extract Vol: 25.00mL



### Method Blank

Blank ID: MB for HBN 1817225 [VXX/36901]

Blank Lab ID: 1604277

QC for Samples:

1211172037, 1211172038

Matrix: Soil/Solid (dry weight)

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.0100U	0.0200	0.00620	mg/kg
1,1,1-Trichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1,2,2-Tetrachloroethane	0.00100U	0.00200	0.000620	mg/kg
1,1,2-Trichloroethane	0.000400U	0.000800	0.000250	mg/kg
1,1-Dichloroethane	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
1,1-Dichloropropene	0.0125U	0.0250	0.00780	mg/kg
1,2,3-Trichlorobenzene	0.0250U	0.0500	0.0150	mg/kg
1,2,3-Trichloropropane	0.00100U	0.00200	0.000620	mg/kg
1,2,4-Trichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2,4-Trimethylbenzene	0.0250U	0.0500	0.0150	mg/kg
1,2-Dibromo-3-chloropropane	0.0500U	0.100	0.0310	mg/kg
1,2-Dibromoethane	0.000500U	0.00100	0.000400	mg/kg
1,2-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,2-Dichloroethane	0.00100U	0.00200	0.000700	mg/kg
1,2-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,3,5-Trimethylbenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
1,3-Dichloropropane	0.00500U	0.0100	0.00310	mg/kg
1,4-Dichlorobenzene	0.0125U	0.0250	0.00780	mg/kg
2,2-Dichloropropane	0.0125U	0.0250	0.00780	mg/kg
2-Butanone (MEK)	0.125U	0.250	0.0780	mg/kg
2-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
2-Hexanone	0.0500U	0.100	0.0310	mg/kg
4-Chlorotoluene	0.0125U	0.0250	0.00780	mg/kg
4-Isopropyltoluene	0.0500U	0.100	0.0250	mg/kg
4-Methyl-2-pentanone (MIBK)	0.125U	0.250	0.0780	mg/kg
Acetone	0.125U	0.250	0.0780	mg/kg
Benzene	0.00625U	0.0125	0.00390	mg/kg
Bromobenzene	0.0125U	0.0250	0.00780	mg/kg
Bromochloromethane	0.0125U	0.0250	0.00780	mg/kg
Bromodichloromethane	0.00100U	0.00200	0.000620	mg/kg
Bromoform	0.0125U	0.0250	0.00780	mg/kg
Bromomethane	0.0100U	0.0200	0.00620	mg/kg
Carbon disulfide	0.0500U	0.100	0.0310	mg/kg
Carbon tetrachloride	0.00625U	0.0125	0.00390	mg/kg
Chlorobenzene	0.0125U	0.0250	0.00780	mg/kg
Chloroethane	0.100U	0.200	0.0620	mg/kg

Print Date: 04/01/2021 3:17:13PM



### Method Blank

Blank ID: MB for HBN 1817225 [VXX/36901]  
Blank Lab ID: 1604277

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211172037, 1211172038

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloroform	0.00200U	0.00400	0.00100	mg/kg
Chloromethane	0.0125U	0.0250	0.00780	mg/kg
cis-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
cis-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Dibromochloromethane	0.00250U	0.00500	0.00150	mg/kg
Dibromomethane	0.0125U	0.0250	0.00780	mg/kg
Dichlorodifluoromethane	0.0250U	0.0500	0.0150	mg/kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/kg
Freon-113	0.0500U	0.100	0.0310	mg/kg
Hexachlorobutadiene	0.0100U	0.0200	0.00620	mg/kg
Isopropylbenzene (Cumene)	0.0125U	0.0250	0.00780	mg/kg
Methylene chloride	0.0500U	0.100	0.0310	mg/kg
Methyl-t-butyl ether	0.0500U	0.100	0.0310	mg/kg
Naphthalene	0.0125U	0.0250	0.00780	mg/kg
n-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
n-Propylbenzene	0.0125U	0.0250	0.00780	mg/kg
o-Xylene	0.0125U	0.0250	0.00780	mg/kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/kg
sec-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Styrene	0.0125U	0.0250	0.00780	mg/kg
tert-Butylbenzene	0.0125U	0.0250	0.00780	mg/kg
Tetrachloroethene	0.00625U	0.0125	0.00390	mg/kg
Toluene	0.0125U	0.0250	0.00780	mg/kg
trans-1,2-Dichloroethene	0.0125U	0.0250	0.00780	mg/kg
trans-1,3-Dichloropropene	0.00625U	0.0125	0.00390	mg/kg
Trichloroethene	0.00250U	0.00500	0.00150	mg/kg
Trichlorofluoromethane	0.0250U	0.0500	0.0150	mg/kg
Vinyl acetate	0.0500U	0.100	0.0310	mg/kg
Vinyl chloride	0.000400U	0.000800	0.000250	mg/kg
Xylenes (total)	0.0375U	0.0750	0.0228	mg/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	102	71-136		%
4-Bromofluorobenzene (surr)	97.2	55-151		%
Toluene-d8 (surr)	98.7	85-116		%

Print Date: 04/01/2021 3:17:13PM



**Method Blank**

Blank ID: MB for HBN 1817225 [VXX/36901]  
Blank Lab ID: 1604277

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211172037, 1211172038

**Results by SW8260D**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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**Batch Information**

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: JMG  
Analytical Date/Time: 3/25/2021 10:41:00AM

Prep Batch: VXX36901  
Prep Method: SW5035A  
Prep Date/Time: 3/25/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 04/01/2021 3:17:13PM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36901]

Blank Spike Lab ID: 1604278

Date Analyzed: 03/25/2021 10:57

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172037, 1211172038

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
1,1,1,2-Tetrachloroethane	0.750	0.811	108	(78-125)
1,1,1-Trichloroethane	0.750	0.787	105	(73-130)
1,1,2,2-Tetrachloroethane	0.750	0.800	107	(70-124)
1,1,2-Trichloroethane	0.750	0.764	102	(78-121)
1,1-Dichloroethane	0.750	0.789	105	(76-125)
1,1-Dichloroethene	0.750	0.783	104	(70-131)
1,1-Dichloropropene	0.750	0.783	104	(76-125)
1,2,3-Trichlorobenzene	0.750	0.785	105	(66-130)
1,2,3-Trichloropropane	0.750	0.769	103	(73-125)
1,2,4-Trichlorobenzene	0.750	0.782	104	(67-129)
1,2,4-Trimethylbenzene	0.750	0.792	106	(75-123)
1,2-Dibromo-3-chloropropane	0.750	0.823	110	(61-132)
1,2-Dibromoethane	0.750	0.795	106	(78-122)
1,2-Dichlorobenzene	0.750	0.785	105	(78-121)
1,2-Dichloroethane	0.750	0.741	99	(73-128)
1,2-Dichloropropane	0.750	0.786	105	(76-123)
1,3,5-Trimethylbenzene	0.750	0.792	106	(73-124)
1,3-Dichlorobenzene	0.750	0.790	105	(77-121)
1,3-Dichloropropane	0.750	0.785	105	(77-121)
1,4-Dichlorobenzene	0.750	0.795	106	(75-120)
2,2-Dichloropropane	0.750	0.797	106	(67-133)
2-Butanone (MEK)	2.25	2.49	111	(51-148)
2-Chlorotoluene	0.750	0.784	104	(75-122)
2-Hexanone	2.25	2.46	109	(53-145)
4-Chlorotoluene	0.750	0.772	103	(72-124)
4-Isopropyltoluene	0.750	0.793	106	(73-127)
4-Methyl-2-pentanone (MIBK)	2.25	2.40	107	(65-135)
Acetone	2.25	2.18	97	(36-164)
Benzene	0.750	0.755	101	(77-121)
Bromobenzene	0.750	0.802	107	(78-121)
Bromochloromethane	0.750	0.774	103	(78-125)
Bromodichloromethane	0.750	0.835	111	(75-127)
Bromoform	0.750	0.751	100	(67-132)
Bromomethane	0.750	0.717	96	(53-143)

Print Date: 04/01/2021 3:17:15PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36901]

Blank Spike Lab ID: 1604278

Date Analyzed: 03/25/2021 10:57

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172037, 1211172038

### Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
Carbon disulfide	1.13	1.24	110	(63-132)
Carbon tetrachloride	0.750	0.811	108	(70-135)
Chlorobenzene	0.750	0.770	103	(79-120)
Chloroethane	0.750	0.738	98	(59-139)
Chloroform	0.750	0.764	102	(78-123)
Chloromethane	0.750	0.696	93	(50-136)
cis-1,2-Dichloroethene	0.750	0.761	101	(77-123)
cis-1,3-Dichloropropene	0.750	0.834	111	(74-126)
Dibromochloromethane	0.750	0.771	103	(74-126)
Dibromomethane	0.750	0.791	105	(78-125)
Dichlorodifluoromethane	0.750	0.760	101	(29-149)
Ethylbenzene	0.750	0.776	103	(76-122)
Freon-113	1.13	1.16	103	(66-136)
Hexachlorobutadiene	0.750	0.806	107	(61-135)
Isopropylbenzene (Cumene)	0.750	0.779	104	(68-134)
Methylene chloride	0.750	0.762	102	(70-128)
Methyl-t-butyl ether	1.13	1.17	104	(73-125)
Naphthalene	0.750	0.770	103	(62-129)
n-Butylbenzene	0.750	0.831	111	(70-128)
n-Propylbenzene	0.750	0.800	107	(73-125)
o-Xylene	0.750	0.762	102	(77-123)
P & M -Xylene	1.50	1.50	100	(77-124)
sec-Butylbenzene	0.750	0.793	106	(73-126)
Styrene	0.750	0.796	106	(76-124)
tert-Butylbenzene	0.750	0.776	103	(73-125)
Tetrachloroethene	0.750	0.763	102	(73-128)
Toluene	0.750	0.750	100	(77-121)
trans-1,2-Dichloroethene	0.750	0.768	102	(74-125)
trans-1,3-Dichloropropene	0.750	0.835	111	(71-130)
Trichloroethene	0.750	0.782	104	(77-123)
Trichlorofluoromethane	0.750	0.770	103	(62-140)
Vinyl acetate	0.750	0.832	111	(50-151)
Vinyl chloride	0.750	0.746	99	(56-135)
Xylenes (total)	2.25	2.26	100	(78-124)

Print Date: 04/01/2021 3:17:15PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [VXX36901]

Blank Spike Lab ID: 1604278

Date Analyzed: 03/25/2021 10:57

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172037, 1211172038

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	0.750	99		( 71-136 )
4-Bromofluorobenzene (surr)	0.750	96		( 55-151 )
Toluene-d8 (surr)	0.750	99		( 85-116 )

## Batch Information

Analytical Batch: VMS20618

Analytical Method: SW8260D

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: JMG

Prep Batch: VXX36901

Prep Method: SW5035A

Prep Date/Time: 03/25/2021 06:00

Spike Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

### Matrix Spike Summary

Original Sample ID: 1211252001  
 MS Sample ID: 1604279 MS  
 MSD Sample ID: 1604280 MSD

Analysis Date: 03/25/2021 16:45  
 Analysis Date: 03/25/2021 12:22  
 Analysis Date: 03/25/2021 12:38  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172037, 1211172038

### Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	0.0153U	0.808	0.870	108	0.808	0.859	106	78-125	1.20	(< 20)
1,1,1-Trichloroethane	0.0191U	0.808	0.837	104	0.808	0.813	101	73-130	2.90	(< 20)
1,1,2,2-Tetrachloroethane	0.00153U	0.808	0.862	107	0.808	0.882	109	70-124	2.30	(< 20)
1,1,2-Trichloroethane	0.000610U	0.808	0.875	108	0.808	0.849	105	78-121	3.00	(< 20)
1,1-Dichloroethane	0.0191U	0.808	0.842	104	0.808	0.781	97	76-125	7.50	(< 20)
1,1-Dichloroethene	0.0191U	0.808	0.826	102	0.808	0.819	101	70-131	0.88	(< 20)
1,1-Dichloropropene	0.0191U	0.808	0.826	102	0.808	0.810	100	76-125	1.90	(< 20)
1,2,3-Trichlorobenzene	0.0382U	0.808	0.898	111	0.808	1.01	125	66-130	11.80	(< 20)
1,2,3-Trichloropropane	0.00153U	0.808	0.810	100	0.808	0.841	104	73-125	3.70	(< 20)
1,2,4-Trichlorobenzene	0.0191U	0.808	0.877	109	0.808	0.923	114	67-129	5.10	(< 20)
1,2,4-Trimethylbenzene	0.297	0.808	1.01	89	0.808	1.06	94	75-123	4.00	(< 20)
1,2-Dibromo-3-chloropropane	0.0765U	0.808	0.934	116	0.808	0.936	116	61-132	0.20	(< 20)
1,2-Dibromoethane	0.000765U	0.808	0.860	107	0.808	0.860	106	78-122	0.06	(< 20)
1,2-Dichlorobenzene	0.0191U	0.808	0.822	102	0.808	0.839	104	78-121	2.00	(< 20)
1,2-Dichloroethane	0.00153U	0.808	0.801	99	0.808	0.784	97	73-128	2.10	(< 20)
1,2-Dichloropropane	0.00765U	0.808	0.870	108	0.808	0.830	103	76-123	4.80	(< 20)
1,3,5-Trimethylbenzene	0.102	0.808	0.881	96	0.808	0.901	99	73-124	2.20	(< 20)
1,3-Dichlorobenzene	0.0191U	0.808	0.828	103	0.808	0.839	104	77-121	1.40	(< 20)
1,3-Dichloropropane	0.00765U	0.808	0.842	104	0.808	0.833	103	77-121	1.00	(< 20)
1,4-Dichlorobenzene	0.0191U	0.808	0.828	103	0.808	0.887	110	75-120	6.90	(< 20)
2,2-Dichloropropane	0.0191U	0.808	0.849	105	0.808	0.839	104	67-133	1.10	(< 20)
2-Butanone (MEK)	0.191U	2.43	2.71	112	2.43	2.68	111	51-148	0.62	(< 20)
2-Chlorotoluene	0.0191U	0.808	0.810	100	0.808	0.831	103	75-122	2.50	(< 20)
2-Hexanone	0.0765U	2.43	2.68	111	2.43	2.66	110	53-145	0.72	(< 20)
4-Chlorotoluene	0.0191U	0.808	0.793	98	0.808	0.847	105	72-124	6.70	(< 20)
4-Isopropyltoluene	0.0699J	0.808	0.884	101	0.808	0.900	103	73-127	1.80	(< 20)
4-Methyl-2-pentanone (MIBK)	0.191U	2.43	2.79	115	2.43	2.63	109	65-135	5.70	(< 20)
Acetone	0.191U	2.43	2.35	97	2.43	2.40	99	36-164	1.90	(< 20)
Benzene	0.00955U	0.808	0.803	99	0.808	0.790	98	77-121	1.60	(< 20)
Bromobenzene	0.0191U	0.808	0.832	103	0.808	0.841	104	78-121	1.00	(< 20)
Bromochloromethane	0.0191U	0.808	0.837	104	0.808	0.828	103	78-125	1.00	(< 20)
Bromodichloromethane	0.00153U	0.808	0.922	114	0.808	0.886	110	75-127	4.00	(< 20)
Bromoform	0.0191U	0.808	0.808	100	0.808	0.838	104	67-132	3.80	(< 20)
Bromomethane	0.0153U	0.808	0.799	99	0.808	0.813	101	53-143	1.60	(< 20)
Carbon disulfide	0.0765U	1.21	1.31	108	1.21	1.30	108	63-132	0.23	(< 20)
Carbon tetrachloride	0.00955U	0.808	0.865	107	0.808	0.849	105	70-135	1.80	(< 20)
Chlorobenzene	0.0191U	0.808	0.814	101	0.808	0.819	101	79-120	0.69	(< 20)

Print Date: 04/01/2021 3:17:17PM



### Matrix Spike Summary

Original Sample ID: 1211252001  
 MS Sample ID: 1604279 MS  
 MSD Sample ID: 1604280 MSD

Analysis Date: 03/25/2021 16:45  
 Analysis Date: 03/25/2021 12:22  
 Analysis Date: 03/25/2021 12:38  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172037, 1211172038

### Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloroethane	0.153U	0.808	0.809	100	0.808	0.787	97	59-139	2.80	(< 20)
Chloroform	0.00306U	0.808	0.815	101	0.808	0.800	99	78-123	1.80	(< 20)
Chloromethane	0.0191U	0.808	0.752	93	0.808	0.732	91	50-136	2.80	(< 20)
cis-1,2-Dichloroethene	0.0191U	0.808	0.809	100	0.808	0.803	99	77-123	0.87	(< 20)
cis-1,3-Dichloropropene	0.00955U	0.808	0.917	113	0.808	0.884	109	74-126	3.60	(< 20)
Dibromochloromethane	0.00382U	0.808	0.832	103	0.808	0.827	102	74-126	0.65	(< 20)
Dibromomethane	0.0191U	0.808	0.884	109	0.808	0.849	105	78-125	3.90	(< 20)
Dichlorodifluoromethane	0.0382U	0.808	0.755	93	0.808	0.716	89	29-149	5.30	(< 20)
Ethylbenzene	0.0195J	0.808	0.841	102	0.808	0.817	99	76-122	2.80	(< 20)
Freon-113	0.0765U	1.21	1.22	100	1.21	1.21	100	66-136	0.67	(< 20)
Hexachlorobutadiene	0.0153U	0.808	0.922	114	0.808	0.961	119	61-135	4.10	(< 20)
Isopropylbenzene (Cumene)	0.0168J	0.808	0.821	100	0.808	0.828	100	68-134	0.85	(< 20)
Methylene chloride	0.0765U	0.808	0.815	101	0.808	0.817	101	70-128	0.30	(< 20)
Methyl-t-butyl ether	0.0765U	1.21	1.26	104	1.21	1.18	97	73-125	6.80	(< 20)
Naphthalene	0.0283J	0.808	0.892	107	0.808	0.963	116	62-129	7.60	(< 20)
n-Butylbenzene	0.0191U	0.808	0.939	116	0.808	0.983	122	70-128	4.60	(< 20)
n-Propylbenzene	0.0523	0.808	0.844	98	0.808	0.864	100	73-125	2.20	(< 20)
o-Xylene	0.0611	0.808	0.848	97	0.808	0.854	98	77-123	0.82	(< 20)
P & M -Xylene	0.112	1.62	1.67	97	1.62	1.63	94	77-124	2.50	(< 20)
sec-Butylbenzene	0.0286J	0.808	0.849	102	0.808	0.881	106	73-126	3.60	(< 20)
Styrene	0.0191U	0.808	0.826	102	0.808	0.838	104	76-124	1.50	(< 20)
tert-Butylbenzene	0.0191U	0.808	0.795	99	0.808	0.850	105	73-125	6.60	(< 20)
Tetrachloroethene	0.00955U	0.808	0.835	103	0.808	0.794	98	73-128	5.00	(< 20)
Toluene	0.0191U	0.808	0.798	99	0.808	0.790	98	77-121	1.00	(< 20)
trans-1,2-Dichloroethene	0.0191U	0.808	0.877	109	0.808	0.822	102	74-125	6.40	(< 20)
trans-1,3-Dichloropropene	0.00955U	0.808	0.933	116	0.808	0.904	112	71-130	3.10	(< 20)
Trichloroethene	0.00382U	0.808	0.855	106	0.808	0.817	101	77-123	4.50	(< 20)
Trichlorofluoromethane	0.0382U	0.808	0.977	121	0.808	0.956	118	62-140	2.20	(< 20)
Vinyl acetate	0.0765U	0.808	0.945	117	0.808	0.900	111	50-151	4.90	(< 20)
Vinyl chloride	0.000610U	0.808	0.781	97	0.808	0.765	95	56-135	2.10	(< 20)
Xylenes (total)	0.173	2.43	2.51	97	2.43	2.49	95	78-124	1.40	(< 20)
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		0.808	0.804	100	0.808	0.800	99	71-136	0.47	
4-Bromofluorobenzene (surr)		1.35	0.941	70	1.35	0.952	71	55-151	1.10	
Toluene-d8 (surr)		0.808	0.795	98	0.808	0.801	99	85-116	0.74	

Print Date: 04/01/2021 3:17:17PM



### Matrix Spike Summary

Original Sample ID: 1211252001  
MS Sample ID: 1604279 MS  
MSD Sample ID: 1604280 MSD

Analysis Date:  
Analysis Date: 03/25/2021 12:22  
Analysis Date: 03/25/2021 12:38  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172037, 1211172038

### Results by SW8260D

Parameter	Sample	Matrix Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			

### Batch Information

Analytical Batch: VMS20618  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: JMG  
Analytical Date/Time: 3/25/2021 12:22:00PM

Prep Batch: VXX36901  
Prep Method: Vol. Extraction SW8260 Field Extracted L  
Prep Date/Time: 3/25/2021 6:00:00AM  
Prep Initial Wt./Vol.: 56.90g  
Prep Extract Vol: 25.00mL

Print Date: 04/01/2021 3:17:17PM

## Method Blank

Blank ID: MB for HBN 1817067 [XXX/44542]  
 Blank Lab ID: 1603608

Matrix: Soil/Solid (dry weight)

### QC for Samples:

1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011

## Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/kg
<b>Surrogates</b>				
5a Androstane (surr)	95	60-120		%

## Batch Information

Analytical Batch: XFC15880  
 Analytical Method: AK102  
 Instrument: Agilent 7890B R  
 Analyst: IVM  
 Analytical Date/Time: 3/23/2021 11:16:00AM

Prep Batch: XXX44542  
 Prep Method: SW3550C  
 Prep Date/Time: 3/22/2021 3:09:40PM  
 Prep Initial Wt./Vol.: 30 g  
 Prep Extract Vol: 5 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [XXX44542]  
 Blank Spike Lab ID: 1603609  
 Date Analyzed: 03/23/2021 11:26

Spike Duplicate ID: LCSD for HBN 1211172 [XXX44542]  
 Spike Duplicate Lab ID: 1603610  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011

## Results by AK102

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	667	752	113	667	746	112	( 75-125 )	0.87	(< 20 )
<b>Surrogates</b>									
5a Androstane (surr)	16.7		115	16.7		114	( 60-120 )	0.89	

## Batch Information

Analytical Batch: **XFC15880**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **IVM**

Prep Batch: **XXX44542**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **03/22/2021 15:09**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL





### Method Blank

Blank ID: MB for HBN 1817067 [XXX/44542]  
Blank Lab ID: 1603608

Matrix: Soil/Solid (dry weight)

#### QC for Samples:

1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011

### Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	50.0U	100	43.0	mg/kg
<b>Surrogates</b>				
n-Triacontane-d62 (surr)	93.9	60-120		%

### Batch Information

Analytical Batch: XFC15880  
Analytical Method: AK103  
Instrument: Agilent 7890B R  
Analyst: IVM  
Analytical Date/Time: 3/23/2021 11:16:00AM

Prep Batch: XXX44542  
Prep Method: SW3550C  
Prep Date/Time: 3/22/2021 3:09:40PM  
Prep Initial Wt./Vol.: 30 g  
Prep Extract Vol: 5 mL

Print Date: 04/01/2021 3:17:24PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [XXX44542]  
 Blank Spike Lab ID: 1603609  
 Date Analyzed: 03/23/2021 11:26

Spike Duplicate ID: LCSD for HBN 1211172 [XXX44542]  
 Spike Duplicate Lab ID: 1603610  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172001, 1211172002, 1211172003, 1211172004, 1211172005, 1211172006, 1211172007, 1211172008, 1211172009, 1211172010, 1211172011

## Results by AK103

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	667	746	112	667	739	111	( 60-120 )	1.00	(< 20 )
<b>Surrogates</b>									
n-Triacontane-d62 (surr)	16.7		108	16.7		105	( 60-120 )	3.00	

## Batch Information

Analytical Batch: XFC15880  
 Analytical Method: AK103  
 Instrument: Agilent 7890B R  
 Analyst: IVM

Prep Batch: XXX44542  
 Prep Method: SW3550C  
 Prep Date/Time: 03/22/2021 15:09  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL



### Method Blank

Blank ID: MB for HBN 1817090 [XXX/44543]  
Blank Lab ID: 1603727

Matrix: Soil/Solid (dry weight)

#### QC for Samples:

1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020, 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026

### Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	7.18J	20.0	6.20	mg/kg
<b>Surrogates</b>				
5a Androstane (surr)	98.5	60-120		%

### Batch Information

Analytical Batch: XFC15880  
Analytical Method: AK102  
Instrument: Agilent 7890B R  
Analyst: IVM  
Analytical Date/Time: 3/23/2021 5:14:00PM

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 3/23/2021 1:15:07PM  
Prep Initial Wt./Vol.: 30 g  
Prep Extract Vol: 5 mL

Print Date: 04/01/2021 3:17:30PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [XXX44543]  
 Blank Spike Lab ID: 1603728  
 Date Analyzed: 03/23/2021 17:24

Spike Duplicate ID: LCSD for HBN 1211172 [XXX44543]  
 Spike Duplicate Lab ID: 1603729  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018, 1211172019, 1211172020, 1211172021, 1211172022, 1211172023, 1211172024, 1211172025, 1211172026

## Results by AK102

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	667	661	99	667	698	105	( 75-125 )	5.50	(< 20 )
<b>Surrogates</b>									
5a Androstane (surr)	16.7		101	16.7		106	( 60-120 )	4.90	

## Batch Information

Analytical Batch: **XFC15880**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **IVM**

Prep Batch: **XXX44543**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **03/23/2021 13:15**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL



**Method Blank**

Blank ID: MB for HBN 1817090 [XXX/44543]  
Blank Lab ID: 1603727

Matrix: Soil/Solid (dry weight)

QC for Samples

1211172 012, 12 11172013, 12 11172014, 12 11172015, 1211172 016, 1211172 017, 1211172 018, 12 11172 019, 12 11172020, 1211172 02 1, 12 1117202 2, 12 11172023, 12 11172024, 1211172 025, 1211172 02 6

**Results by AK103**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	50.0U	100	43.0	mg/kg
<b>Surrogates</b>				
n- Triacontane-d62 (surr)	95.1	60-120		%

**Batch Information**

Analytical Batch: XFC15880  
Analytical Method: AK103  
Instrument: Agilent 7890B R  
Analyst: IVM  
Analytical Date/Time: 3/23/2021 5:14:00PM

Prep Batch: XXX44543  
Prep Method: SW3550C  
Prep Date/Time: 3/23/2021 1:15:07PM  
Prep Initial Wt./Vol.: 30 g  
Prep Extract Vol: 5 mL

Print Date: 04/01/2021 3:17:35PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [XXX44543]  
 Blank Spike Lab ID: 1603728  
 Date Analyzed: 03/23/2021 17:24

Spike Duplicate ID: LCSD for HBN 1211172  
 [XXX44543]  
 Spike Duplicate Lab ID: 1603729  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172012, 1211172013, 1211172014, 1211172015, 1211172016, 1211172017, 1211172018,  
 1211172019, 1211172020, 1211172021, 1211172022, 1211172023, 1211172024, 1211172025,  
 1211172026

## Results by AK103

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	667	646	97	667	681	102	( 60-120 )	5.40	(< 20 )

### Surrogates

n-Triacontane-d62 (surr)	16.7		94	16.7		96	( 60-120 )	2.70	
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## Batch Information

Analytical Batch: **XFC15880**  
 Analytical Method: **AK103**  
 Instrument: **Agilent 7890B R**  
 Analyst: **IVM**

Prep Batch: **XXX44543**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **03/23/2021 13:15**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

## Method Blank

Blank ID: MB for HBN 1817111 [XXX4454]  
 Blank Lab ID: 1603798

Matrix: Soil/Solid (dry weight)

### QC for Samples:

121117207, 121117208, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035  
 1211172036, 1211172037, 1211172038

## Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	2.0	62	mg/kg
<b>Surrogates</b>				
5 $\alpha$ Androstane (surr)	91.1	10-12		%

## Batch Information

Analytical Batch: XFC1881  
 Analytical Method: AK102  
 Instrument: Agilent 7890B R  
 Analyst: IVM  
 Analytical Date/Time: 3/24/2021 6:01:00PM

Prep Batch: XXX4454  
 Prep Method: SW350C  
 Prep Date/Time: 3/24/2021 8:55:34AM  
 Prep Initial Wt./Vol.: 30 g  
 Prep Extract Vol: 5mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [XXX44545]  
 Blank Spike Lab ID: 1603799  
 Date Analyzed: 03/24/2021 18:11

Spike Duplicate ID: LCSD for HBN 1211172  
 [XXX44545]  
 Spike Duplicate Lab ID: 1603800  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033,  
 1211172034, 1211172035, 1211172036, 1211172037, 1211172038

### Results by AK102

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	667	651	98	667	667	100	( 75-125 )	2.50	(< 20 )
<b>Surrogates</b>									
5a Androstane (surr)	16.7		100	16.7		102	( 60-120 )	2.10	

### Batch Information

Analytical Batch: XFC15881  
 Analytical Method: AK102  
 Instrument: Agilent 7890B R  
 Analyst: IVM

Prep Batch: XXX44545  
 Prep Method: SW3550C  
 Prep Date/Time: 03/24/2021 08:55  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL



## Method Blank

Blank ID: MB for HBN 1817111 [XXX4454]  
 Blank Lab ID: 1603798

Matrix: Soil/Solid (dry weight)

### QC for Samples:

121117207, 121117208, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035  
 1211172036, 1211172037, 1211172038

## Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.0U	100	43.0	mg/kg
<b>Surrogates</b>				
n- Triacontane-d6 (surr)	93.8	0-10		%

## Batch Information

Analytical Batch: XFC1B81  
 Analytical Method: AK103  
 Instrument: Agilent 7890B R  
 Analyst: IVM  
 Analytical Date/Time: 3/2/2021 6:01:00PM

Prep Batch: XXX4455  
 Prep Method: SW350C  
 Prep Date/Time: 3/2/2021 8:5534AM  
 Prep Initial Wt./Vol.: 30 g  
 Prep Extract Vol: 5mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [XXX44545]  
Blank Spike Lab ID: 1603799  
Date Analyzed: 03/24/2021 18:11

Spike Duplicate ID: LCSD for HBN 1211172 [XXX44545]  
Spike Duplicate Lab ID: 1603800  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172027, 1211172028, 1211172029, 1211172030, 1211172031, 1211172032, 1211172033, 1211172034, 1211172035, 1211172036, 1211172037, 1211172038

### Results by AK103

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	667	666	100	667	683	102	( 60-120 )	2.50	(< 20 )
<b>Surrogates</b>									
n-Triacontane-d62 (surr)	16.7		94	16.7		95	( 60-120 )	1.70	

### Batch Information

Analytical Batch: XFC15881  
Analytical Method: AK103  
Instrument: Agilent 7890B R  
Analyst: IVM

Prep Batch: XXX44545  
Prep Method: SW 3550C  
Prep Date/Time: 03/24/2021 08:55  
Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

## Method Blank

Blank ID: MB for HBN 1817186 [XXX/44556]  
 Blank Lab ID: 1604097

Matrix: Soil/Solid (dry weight)

QC for Samples:  
 1211172011, 1211172012, 1211172025, 1211172030

## Results by 8270D SIM (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
2-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthylene	0.0125U	0.0250	0.00625	mg/kg
Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo(a)Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo[a]pyrene	0.0125U	0.0250	0.00625	mg/kg
Benzo[b]Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Benzo[g,h,i]perylene	0.0125U	0.0250	0.00625	mg/kg
Benzo[k]fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Chrysene	0.0125U	0.0250	0.00625	mg/kg
Dibenzo[a,h]anthracene	0.0125U	0.0250	0.00625	mg/kg
Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Fluorene	0.0125U	0.0250	0.00625	mg/kg
Indeno[1,2,3-c,d] pyrene	0.0125U	0.0250	0.00625	mg/kg
Naphthalene	0.0100U	0.0200	0.00500	mg/kg
Phenanthrene	0.0125U	0.0250	0.00625	mg/kg
Pyrene	0.0125U	0.0250	0.00625	mg/kg
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	72.1	58-103		%
Fluoranthene-d10 (surr)	71	54-113		%

## Batch Information

Analytical Batch: XMS12541  
 Analytical Method: 8270D SIM (PAH)  
 Instrument: SVA Agilent 780/5975 GC/MS  
 Analyst: CDM  
 Analytical Date/Time: 3/29/2021 6:29:00PM

Prep Batch: XXX44556  
 Prep Method: SW3550C  
 Prep Date/Time: 3/26/2021 8:52:49AM  
 Prep Initial Wt./Vol.: 22.5 g  
 Prep Extract Vol: 5 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211172 [XXX44556]

Blank Spike Lab ID: 1604098

Date Analyzed: 03/29/2021 18:49

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172011, 1211172012, 1211172025, 1211172030

## Results by 8270D SIM (PAH)

### Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	0.111	0.0888	80	(43-111)
2-Methylnaphthalene	0.111	0.0906	82	(39-114)
Acenaphthene	0.111	0.0913	82	(44-111)
Acenaphthylene	0.111	0.0956	86	(39-116)
Anthracene	0.111	0.0960	86	(50-114)
Benzo(a)Anthracene	0.111	0.0905	81	(54-122)
Benzo[a]pyrene	0.111	0.0999	90	(50-125)
Benzo[b]Fluoranthene	0.111	0.105	94	(53-128)
Benzo[g,h,i]perylene	0.111	0.102	92	(49-127)
Benzo[k]fluoranthene	0.111	0.0977	88	(56-123)
Chrysene	0.111	0.0941	85	(57-118)
Dibenzo[a,h]anthracene	0.111	0.111	100	(50-129)
Fluoranthene	0.111	0.0994	90	(55-119)
Fluorene	0.111	0.0978	88	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.115	103	(49-130)
Naphthalene	0.111	0.0888	80	(38-111)
Phenanthrene	0.111	0.0926	83	(49-113)
Pyrene	0.111	0.0896	81	(55-117)

### Surrogates

2-Methylnaphthalene-d10 (surr)	0.111		72	(58-103)
Fluoranthene-d10 (surr)	0.111		72	(54-113)

## Batch Information

Analytical Batch: XMS12541

Analytical Method: 8270D SIM (PAH)

Instrument: SVA Agilent 780/5975 GC/MS

Analyst: CDM

Prep Batch: XXX44556

Prep Method: SW3550C

Prep Date/Time: 03/26/2021 08:52

Spike Init Wt./Vol.: 0.111 mg/Kg Extract Vol: 5 mL

Dupe Init Wt./Vol.: Extract Vol:



### Matrix Spike Summary

Original Sample ID: 1211252005  
 MS Sample ID: 1604100 MS  
 MSD Sample ID: 1604101 MSD

Analysis Date: 03/29/2021 21:12  
 Analysis Date: 03/29/2021 21:33  
 Analysis Date: 03/29/2021 21:53  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211172011, 1211172012, 1211172025, 1211172030

### Results by 8270D SIM (PAH)

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0136U	0.122	0.0933	77	0.122	0.0962	79	43-111	3.00	(< 20)
2-Methylnaphthalene	0.0136U	0.122	0.0955	79	0.122	0.0973	80	39-114	1.80	(< 20)
Acenaphthene	0.0136U	0.122	0.0943	78	0.122	0.0963	79	44-111	2.00	(< 20)
Acenaphthylene	0.0136U	0.122	0.0987	81	0.122	0.101	83	39-116	2.10	(< 20)
Anthracene	0.0136U	0.122	0.0958	79	0.122	0.0976	81	50-114	1.90	(< 20)
Benzo(a)Anthracene	0.0136U	0.122	0.0916	75	0.122	0.0927	76	54-122	1.20	(< 20)
Benzo[a]pyrene	0.0136U	0.122	0.0996	82	0.122	0.0999	82	50-125	0.35	(< 20)
Benzo[b]Fluoranthene	0.0136U	0.122	0.103	85	0.122	0.104	86	53-128	0.89	(< 20)
Benzo[g,h,i]perylene	0.0136U	0.122	0.0903	74	0.122	0.0884	73	49-127	2.10	(< 20)
Benzo[k]fluoranthene	0.0136U	0.122	0.0981	81	0.122	0.0977	81	56-123	0.42	(< 20)
Chrysene	0.0136U	0.122	0.0941	77	0.122	0.0961	79	57-118	2.10	(< 20)
Dibenzo[a,h]anthracene	0.0136U	0.122	0.105	87	0.122	0.103	85	50-129	2.00	(< 20)
Fluoranthene	0.0136U	0.122	0.101	83	0.122	0.102	84	55-119	1.50	(< 20)
Fluorene	0.0136U	0.122	0.0976	80	0.122	0.102	84	47-114	4.60	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0136U	0.122	0.108	89	0.122	0.107	88	49-130	0.61	(< 20)
Naphthalene	0.0109U	0.122	0.0962	79	0.122	0.0978	81	38-111	1.60	(< 20)
Phenanthrene	0.0136U	0.122	0.0924	76	0.122	0.0943	78	49-113	2.10	(< 20)
Pyrene	0.0136U	0.122	0.0911	75	0.122	0.0926	76	55-117	1.50	(< 20)
<b>Surrogates</b>										
2-Methylnaphthalene-d10 (surr)		0.122	0.0823	68	0.122	0.0849	70	58-103	3.10	
Fluoranthene-d10 (surr)		0.122	0.0801	66	0.122	0.0814	67	54-113	1.70	

### Batch Information

Analytical Batch: XMS12541  
 Analytical Method: 8270D SIM (PAH)  
 Instrument: SVA Agilent 780/5975 GC/MS  
 Analyst: CDM  
 Analytical Date/Time: 3/29/2021 9:33:00PM

Prep Batch: XXX44556  
 Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml  
 Prep Date/Time: 3/26/2021 8:52:49AM  
 Prep Initial Wt./Vol.: 22.50g  
 Prep Extract Vol: 5.00mL

Print Date: 04/01/2021 3:17:56PM

# 338928 du

**SHANNON & WILSON, INC.**  
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS  
 2355 Hill Road  
 Fairbanks, AK 99709  
 (907) 479-0600  
 www.shannonwilson.com

# CHAIN-OF-CUSTODY RECORD

Laboratory SGS Page 1 of 4  
 Attn: Jen Dawkins

Analytical Methods (include preservative if used)

GRD (AK101) ✓  
 VOCs (8260) ✓  
 DRO / RPO (AK103) ✓  
 PHT (AK103) ✓  
 8270-D-SIM

Turn Around Time:  Normal  Rush  
 Please Specify \_\_\_\_\_  
 Quote No: \_\_\_\_\_  
 J-Flags:  Yes  No

1211172



Sample Identity	Lab No.	Time	Date Sampled	Total	Composition/Grab? Sample Containers
SB MW 1 - 1	1A-B	1415	3/11/21	X	Soil (TB-1)
SB MW 1 - 2	2A-B	1510	3/11/21	X	
SB MW 2 - 1	3A-B	1237	3/12/21	X	
SB MW 2 - 2	4A-B	1322	3/12/21	X	
SB MW 3 - 1	5A-B	1002	3/11/21	X	
SB MW 3 - 101	6A-B	952	↓	X	
SB MW 3 - 2	7A-B	1105	↓	X	
SB MW 4 - 1	8A-B	1040	3/13/21	X	
SB MW 4 - 2	9A-B	1125	3/13/21	X	
SB TWP 5 - 1	10A-B	1030	3/12/21	X	

Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Number: 103311-009	Total No. of Containers: 80	Signature: <i>Dana Fure</i>	Signature: _____	Signature: _____
Name: Cordova SREB	COC Seals/Intact? Y/N/NA	Date: 3/11/21	Date: _____	Date: _____
Contact: VEW	Received Good Cond./Cold	Printed Name: Dana Fure	Printed Name: _____	Printed Name: _____
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temp: _____	Company: Shannon & Wilson, Inc	Company: _____	Company: _____
Sampler: RLW, DHF	Delivery Method: Goldspeak	Received By: 1. _____	Received By: 2. _____	Received By: 3. _____
Notes: Trip blank remained in cooler with samples at all times.				
Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report Yellow - w/shipment - for consignee files Pink - Shannon & Wilson - job file				

# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

**1211172**



AK101 GRD + Methanol  
 VOC (8260) + Methanol  
 (K102 / K103)  
 PHH 8270D-SIM

Quote No: \_\_\_\_\_  
 Turn Around Time:  
 Normal  Rush  
 J-Flags:  Yes  No

Please Specify

Sample Identity	Lab No.	Time	Date Sampled	Total	Remarks/Initials Composition/Grab? Sample Containers
SB TWP 5 - 2	(11A-B)	1045	3/12/21	2	S61 (TB-1)
SB TWP 5 - 102	(12A-B)	1035	3/12/21		(TB-1) (TB-1)
SB TWP 6 - 1	(13A-B)	1215	3/13/21		(Time 1225) (TB-1)
SB TWP 6 - 101	(14A-B)	1215			(TB-1)
SB TWP 6 - 2	(15A-B)	1245			(TB-1)
SB TWP 7 - 1	(16A-B)	915			(TB-1)
SB TWP 7 - 2	(17A-B)	1000			(TB-1)
SB MW 4 - 101	(18A-B)	1030			(TB-1)
SB 9 - 1	(19A-B)	1620	3/11/21		(TB-1)
SB 9 - 2	(20A-B)	1648	3/11/21		(TB-1)

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <i>[Signature]</i> Printed Name: Dana Fjave Company: Shannon & Wilson, Inc.	Signature: _____ Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: 800 Date: 3/11/21	Time: _____ Date: _____	Time: 08:17 Date: 3/17/21
Received By: 1. _____	Received By: 2. _____	Received By: 3. _____
Signature: _____ Printed Name: _____ Company: _____	Signature: <i>[Signature]</i> Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: _____ Date: _____	Time: _____ Date: _____	Time: _____ Date: _____

**Sample Receipt**

Total No. of Containers: **80**

COC Seals/Intact? Y/N/NA

Received Good Cond./Cold

Temp: \_\_\_\_\_

Delivery Method: **Goldstrak**

**Project Information**

Number: **103311-009**

Name: **Cordoba SREB**

Contact: **VEN**

Ongoing Project? Yes  No

Sampler: **RLW, DHF**

**Notes:**  
 see page 1.

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

PHH 8270-SIM  
 VOC (8260) (Methanol)  
 BRO/RPD (AK103)  
 AR ID1 (GRB) (Methanol)

Quote No: **1211172**



Turn Around Time:  
 Normal  Rush  
 Please Specify

J-Flags:  Yes  No

Sample Identity	Lab No.	Time	Date Sampled	AR ID1 (GRB) (Methanol)	BRO/RPD (AK103)	VOC (8260) (Methanol)	PHH 8270-SIM	Total	Remarks/Initials Composition/Grab? Sample Containers
SB10-1	21A-B	1700	3/10/21	X	X	X		2	Soil (TB-2)
SB10-2	22A-B	1750	3/10/21						(TB-1)
SB11-1	23A-B	1730	3/12/21						(TB-2)
SB11-2	24A-B	1751	3/12/21		X				
SB12-1	25A-B	1412	3/10/21						
SB12-2	26A-B	1455	3/10/21						
SB13-1	27A-B	1537	↓						
SB13-2	28A-B	1615							
SB14-1	29A-B	918	3/12/21						
SB14-2	30A-B	945	3/12/21		X				

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Dana Fjare</u> Printed Name: <u>Dana Fjare</u> Company: <u>Shannon &amp; Wilson, Inc.</u>	Signature: _____ Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: <u>3/16/21</u> Date: <u>3/16/21</u>	Time: _____ Date: _____	Time: _____ Date: <u>03/17/21</u>
Received By: 1. _____ Signature: _____ Printed Name: _____ Company: _____	Received By: 2. _____ Signature: _____ Printed Name: _____ Company: _____	Received By: 3. _____ Signature: <u>[Signature]</u> Printed Name: <u>cooker 1</u> Company: <u>242 062</u> <u>intact, 2F</u>
Time: _____ Date: _____	Time: _____ Date: _____	Time: <u>08:17</u> Date: <u>03/17/21</u>

**Sample Receipt**

Total No. of Containers: 90

COC Seals/intact? Y/N/A

Received Good Cond./Cold

Temp: \_\_\_\_\_

Delivery Method: Coldstream

**Project Information**

Number: 103311-009

Name: Cordoba SREB

Contact: VEW

Ongoing Project? Yes  No

Sampler: RW, DHF

Notes:  
See page 1.

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file



# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

GRD (AK101) - EMERALD  
 VOCs (8260) - EMERALD  
 DRG / PRD (AK103) - EMERALD  
 PHT 82700-5M

1211172



Quote No: \_\_\_\_\_  
 J-Flags:  Yes  No

Turn Around Time:  Normal  Rush  
 Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Total No.	Remarks/Matrix Composition/Grab? Sample Containers
SB15-1	31A-B	1215	3/11/21	2	50.1 (TB-2)
SB15-2	32A-B	1305	3/11/21		
SB16-1	33A-B	1500	3/12/21		
SB16-2	34A-B	1552	3/12/21		
SB17-1	35A-B	1130			
SB17-2	36A-B	1150			
SB18-1	37A-B	1633			
SB18-2	38A-B	1655			
Trip Blank (TB-1)	39A	Lab Provided		1	# 1 Lab Provided
Trip Blank (TB-2)	40A	Lab Provided		1	# 2 Lab Provided

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>[Signature]</u> Printed Name: <u>Dana Fare</u> Company: <u>Shannon &amp; Wilson, Inc.</u>	Signature: _____ Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: <u>800</u> Date: <u>3/11/21</u>	Time: _____ Date: _____	Time: _____ Date: _____
Received By: 1. Signature: _____ Printed Name: _____ Company: _____	Received By: 2. Signature: <u>[Signature]</u> Printed Name: _____ Company: _____	Received By: 3. Signature: _____ Printed Name: _____ Company: _____
Time: _____ Date: _____	Time: _____ Date: _____	Time: <u>08:17</u> Date: <u>3/17/21</u>
Company: _____	Company: _____	Company: <u>cooler 1 cooler 2</u> <u>2.4°C 062 cooler temp</u> <u>in tact, 2F 2.7 052</u> <u>in tact, 2F</u>

**Sample Receipt**

Total No. of Containers: 80  
 COC Seals/Intact? Y/N/NA  
 Received Good Cond./Cold \_\_\_\_\_  
 Temp: \_\_\_\_\_  
 Delivery Method: Goldstreak

**Project Information**

Number: 103311-009  
 Name: Cordova SREB  
 Contact: VEW  
 Ongoing Project? Yes  No   
 Sampler: RLW, DHF


**Notes:**  
see page 1.

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

*Alert*

*Big Cooler*

Shipper's Name and Address Shannon and Wilson Inc 2355 Hill Rd Fairbanks, AK 99712 USA Tel: 907-479-0600	Shipper's Account Number 27400200733 Customer's ID Number 10926	Not Negotiable <b>Air Waybill</b> Issued By <i>Alaska.</i> AIR CARGO P.O. BOX 68900 SEATTLE, WA 98168 800-225-2752 ALASKACARGO.COM
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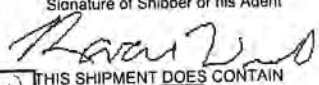
Consignee's Name and Address SGS North America 200 W Potter Drive Anchorage, AK 99518 USA Tel: 907-562-2343	Consignee's Account Number 27400215947	Also Notify N <b>1211172</b>  Tel:
--	---	---

Issuing Carrier's Agent and City Agent's IATA Code Account No. Airport of Departure (Addr. of First Carrier) and Requested Routing <b>Cordova</b>	Accounting Information Shannon and Wilson Inc 2355 Hill Rd Fairbanks, AK 99712 USA SRN/103311009 GoldStreak	10926
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To By First Carrier <b>ANC Alaska Airlines</b>	To / By To / By Currency <b>USD PP X X</b>	Declared Value For Carriage <b>NVD</b>	Declared Value For Customs <b>NCV</b>
Airport of Destination <b>Anchorage</b>	Flight/Date <b>AS 061/16</b>	Amount of Insurance <b>XXX</b>	

Handling Information  
**DANGEROUS GOODS IN EXCEPTED QUANTITIES DGD AND NOTOC NOT REQUIRED**  
**DOT-SP-15368, 3 BOXES EXCEPTED QUANTITIES, 2 BOX JUST SAMPLES**

No of Pieces	Gross Weight	kg lb	Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (Incl. Dimensions or Volume)
5	194.0	L Q		194.0		AS AGREED	SOIL & WATER SAMPLES  Dims: 24 x 13 x14 x 5
5	194.0					AS AGREED	REQ GSX Volume: 12.639

Prepaid <b>AS AGREED</b>	Weight Charge Collect Other Charges <b>XBC 10.00</b>
Valuation Charge Tax	
Total Other Charges Due Agent Total Other Charges Due Carrier	Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. I consent to the inspection of this cargo. For: Shannon and Wilson Inc Signature of Shipper or his Agent 
Total Prepaid <b>AS AGREED</b>	Total Collect Executed On (Date) <b>16 Mar 2021 10:43</b> at (Place) <b>Cordova</b> Signature of Issuing Carrier or its Agent <b>Alaska Airlines</b>

#411511

**Alert Expeditors Inc.**

Citywide Delivery • 440-3351  
8421 Flamingo Drive • Anchorage, Alaska 99502

Date 3-17-21


From Shannon-Wilson

To SGS Labs  Prepay  Advance Charges

Job # CPV PO# AS 2436-4846

Samples XS

5 at 194 LBS

Shipped Signature 

Total Charge

Page 270 of 273

Received By: \_\_\_\_\_



e-Sample Receipt Form

SGS Workorder #:

1211172



1 2 1 1 1 7 2

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
<b>Chain of Custody / Temperature Requirements</b>			N/A	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	#1:2F #2:2F		
COC accompanied samples?	Yes			
DOD: Were samples received in COC corresponding coolers?	N/A			
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required				
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID:	1	@ 2.4 °C Therm. ID: D62
	Yes	Cooler ID:	2	@ 2.7 °C Therm. ID: D52
		Cooler ID:		@ °C Therm. ID:
		Cooler ID:		@ °C Therm. ID:
		Cooler ID:		@ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?		N/A		
If <0°C, were sample containers ice free?		N/A		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
<b>Holding Time / Documentation / Sample Condition Requirements</b>		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes			
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes			
**Note: If times differ <1hr, record details & login per COC. ***Note: If sample information on containers differs from COC, SGS will default to COC information				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes			
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A	***Exemption permitted for metals (e.g, 200.8/6020B).	
<b>Volatile / LL-Hg Requirements</b>				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A			
Were all soil VOAs field extracted with MeOH+BFB?	Yes			
<b>Note to Client:</b> Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				



Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates that an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

**Laboratory Data Review Checklist**

Completed By:

Justin Risley

Title:

Engineering Staff

Date:

4/2/21

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1211172

Laboratory Report Date:

4/1/2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

ADEC File Number:

2215.38.035

Hazard Identification Number:

27304

1211172

Laboratory Report Date:

4/1/2021

CS Site Name:

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**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all the submitted sample analyses?

Yes  No  N/A  Comments:

Analyses were performed by SGS North America, Inc. in Anchorage, AK.

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

Analyses were not transferred or subcontracted.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

Cooler 1 was received at 2.4°C and cooler 2 was received at 2.7°C.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:



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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

The laboratory report noted that samples were received in good condition.

e. Data quality or usability affected?

Comments:

Data quality and usability were not affected; see above.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

Sample *SB12-1* was extracted outside of hold time for polynuclear aromatic hydrocarbons (PAH) analysis by method SW8270D SIM. The out of hold data is reported.

The volatile organic compound (VOC) matrix spike duplicate (MSD) had a relative percent difference (RPD) for trichlorofluoromethane that does not meet QC criteria. This analyte is less than the LOQ in the parent sample.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

The laboratory did not specify any corrective actions.

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d. What is the effect on data quality/usability according to the case narrative?

Comments:

The laboratory does not specify an effect on the data quality/usability. The QC errors noted above are discussed in the subsequent sections.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

Sample *SB12-1* was extracted outside of the holding time for PAH analysis by method SW8270D-SIM. The PAH analytes were not detected in the project samples. The non-detect results are considered estimated and are flagged "UJ" in the analytical database.

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

Analytical sensitivity was evaluated to verify that LODs met the applicable DEC cleanup level. The LODs for non-detect results were below the applicable DEC cleanup levels. The data were not affected.

e. Data quality or usability affected?

Yes  No  N/A

See above.

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6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

Method blank results were below the LOQ; however, gasoline range organics (GRO) were detected at an estimated concentration below the LOQ (0.952 J mg/kg) in method blank 1603693 associated with preparation batch VXX36889, diesel range organics (DRO) were detected an estimated concentration below the LOQ (7.18 J mg/kg) in method blank 1603727 associated with preparation batch XXX44543.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Samples are considered affected if they are associated with the same preparation batch and have detections within ten times the method blank detection.  
  
Project samples *SB10-1, SB10-2, SB11-1, SB11-2, SB12-1, SB12-2, SB13-1, SB13-2, SB14-1, SB14-2, SB15-1, SB15-2, SB16-1, SB16-2, SB17-1, SB17-2, SB18-1, SB18-2, TB-1, and TB-2* are associated with the preparation batch containing the method blank detection for GRO.  
  
Project samples *SBTWP5-102, SBTWP6-1, SBTWP6-101, SBTWP6-2, SBTWP7-1, SBTWP7-2, SBMW4-101, SB9-1, SB9-2, SB10-1, SB10-2, SB11-1, SB11-2, SB12-1, and SB12-2* are associated with the preparation batch containing the method blank detection for DRO.

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iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

GRO was detected below the LOQ in project samples *SB10-1, SB-10-2, SB11-1, SB11-2, SB12-2, SB13-1, SB13-2, SB14-1, SB14-2, SB15-1, SB15-2, SB16-1, SB16-2, SB17-2, SB18-1, SB18-2, TB-1,* and *TB-2* within five times the associated method blank detection. These results are considered not detected and flagged 'UB' at the LOQ in the analytical database.

DRO was detected in project samples *SBTWP5-102, SBTWP6-2, SBTWP7-1, SBTWP7-2, SBMW4-101, SB9-1, SB9-2, SB10-1, SB10-2, SB11-1,* and *SB11-2* within five times the associated method blank detection. These results are considered not detected and flagged 'UB' at the LOQ or the detected result, whichever value is greater, in the analytical database.

DRO was also detected above the LOQ in project sample *SB12-1* greater than five times but less than ten times the associated method blank detection. The result is considered estimated, biased high, and flagged 'JH' in the analytical database.

The remaining samples did not have detections for these analytes or had detections greater than ten times the associated method blank detections

v. Data quality or usability affected?

Comments:

Yes; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

An LCS was reported for VOC and PAH analyses. Refer to Section 6.c. for assessment of laboratory precision.

LCS/LCSD samples were reported for GRO, DRO, and RRO analyses.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

No metals/inorganics we submitted with this work order.

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iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

The %R for Chloromethane is above the control limit.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

The LCS/LCSD percent recoveries and RPDs were within acceptance criteria. Project samples are not affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

The LCS/LCSD percent recoveries and RPDs were within acceptance criteria. Project samples are not affected.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability are not affected; see above.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

MS/MSD samples were reported for VOC and PAH analyses.

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ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

No metals/inorganics we submitted with this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  Comments:

The VOC MS/MSD associated with preparation batch VXX36895 had an RPD failure for trichlorofluoromethane. The parent sample used to prepare these QC samples was not a part of the project sample set. Project samples are not affected.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A; see above.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability are not affected; see above.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

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ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

iv. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes  No  N/A  Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Trip blank results were below the LOQ; however, gasoline range organics (GRO) was detected in the trip blank samples TB-1 and TB-2. The detections for GRO in the trip blank and associated project samples were previously attributed to a method blank detection. Refer to Section 6.a. for applied qualifiers to the data.

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; see above.

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v. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A

Comments:

ii. Submitted blind to lab?

Yes  No  N/A

Comments:

Field duplicate sample pairs *SBMW3-1/SBMW3-101*, *SBMW4-1/SBMW4-101*, *SBMW5-2/SBMW5-102*, and *SBMW6-1/SBMW6-101* were submitted with this work order.

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

Yes  No  N/A

Comments:

Field-duplicate RPDs were within the recommended DQO of 50%, where calculable.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability are not affected; see above.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A

Comments:

Project samples were not collected with reusable sampling equipment. An equipment blank was not required for this project sample set.



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i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Project samples were not collected with reusable sampling equipment. An equipment blank was not required for this project sample set.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; project samples were not collected with reusable sampling equipment. An equipment blank was not required for this project sample set.

iii. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

Other data flags or qualifiers were not required.

## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-71351-1  
Client Project/Site: Cordova SREB

**For:**

Shannon & Wilson, Inc  
2355 Hill Rd.  
Fairbanks, Alaska 99709-5244

Attn: Valerie Webb



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Authorized for release by:  
3/26/2021 2:08:01 PM

David Alltucker, Project Manager I  
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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Definitions/Glossary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

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**Job ID: 320-71351-1**

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**Laboratory: Eurofins TestAmerica, Sacramento**

## Narrative

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**Job Narrative**  
**320-71351-1**

### Receipt

The samples were received on 3/17/2021 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.4° C.

### LCMS

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. TWP-6 (320-71351-10), (CCB 320-472487/2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Organic Prep

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-471656.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Client Sample ID: MW-4

## Lab Sample ID: 320-71351-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.77	J	1.7	0.50	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.30	J	1.7	0.21	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.85	J	1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.6	J B	1.7	0.46	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: EB-4

## Lab Sample ID: 320-71351-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.48	J B	1.8	0.48	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: MW-1

## Lab Sample ID: 320-71351-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.61	J	1.7	0.50	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.1	J	1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6	B	1.7	0.47	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: MW-2

## Lab Sample ID: 320-71351-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	6.5		1.7	0.51	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.2		1.7	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.1		1.7	0.74	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	2.0		1.7	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.3	J	1.7	0.50	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.7	B	1.7	0.47	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: MW-102

## Lab Sample ID: 320-71351-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	6.3		1.7	0.50	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.1		1.7	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	2.9		1.7	0.73	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.8		1.7	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.5	J	1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.1	B	1.7	0.47	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: MW-3

## Lab Sample ID: 320-71351-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.0		1.7	0.50	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.72	J	1.7	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.79	J	1.7	0.73	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.18	J	1.7	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.1	B	1.7	0.47	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: TWP-7

## Lab Sample ID: 320-71351-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.1		1.8	0.52	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.6	J	1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.4	J	1.8	0.77	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.76	J	1.8	0.24	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Client Sample ID: TWP-7 (Continued)

Lab Sample ID: 320-71351-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	0.30	J	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.9		1.8	0.51	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.3	B	1.8	0.49	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: TWP-5

Lab Sample ID: 320-71351-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.86	J	1.8	0.53	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.48	J	1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.3	J	1.8	0.77	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.20	J	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		1.8	0.52	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	82	B	1.8	0.49	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: TWP-105

Lab Sample ID: 320-71351-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.0	J	1.8	0.53	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.1	J	1.8	0.78	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.2		1.8	0.52	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	90	B	1.8	0.50	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: TWP-6

Lab Sample ID: 320-71351-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.9		1.8	0.53	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.53	J	1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.3		1.8	0.77	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	1.8	I	1.8	1.2	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.52	J	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	11		1.8	0.52	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	48	B	1.8	0.49	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurolins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: MW-4**  
**Date Collected: 03/14/21 16:43**  
**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-1**  
**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.77	J	1.7	0.50	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluoroheptanoic acid (PFHpA)	0.30	J	1.7	0.21	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.73	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.94	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluorohexanesulfonic acid (PFHxS)	0.85	J	1.7	0.49	ng/L		03/18/21 12:02	03/21/21 07:58	1
Perfluorooctanesulfonic acid (PFOS)	1.6	J B	1.7	0.46	ng/L		03/18/21 12:02	03/21/21 07:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		03/18/21 12:02	03/21/21 07:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		03/18/21 12:02	03/21/21 07:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		03/18/21 12:02	03/21/21 07:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		03/18/21 12:02	03/21/21 07:58	1
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.27	ng/L		03/18/21 12:02	03/21/21 07:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		03/18/21 12:02	03/21/21 07:58	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	74		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C4 PFHpA	79		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C4 PFOA	78		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C5 PFNA	84		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C2 PFDA	74		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C2 PFUnA	77		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C2 PFDoA	77		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C2 PFTeDA	81		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C3 PFBS	70		50 - 150	03/18/21 12:02	03/21/21 07:58	1
18O2 PFHxS	75		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C4 PFOS	70		50 - 150	03/18/21 12:02	03/21/21 07:58	1
d3-NMeFOSAA	85		50 - 150	03/18/21 12:02	03/21/21 07:58	1
d5-NEtFOSAA	81		50 - 150	03/18/21 12:02	03/21/21 07:58	1
13C3 HFPO-DA	73		50 - 150	03/18/21 12:02	03/21/21 07:58	1

**Client Sample ID: EB-4**  
**Date Collected: 03/14/21 16:53**  
**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-2**  
**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		03/18/21 12:02	03/21/21 08:07	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		03/18/21 12:02	03/21/21 08:07	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		03/18/21 12:02	03/21/21 08:07	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		03/18/21 12:02	03/21/21 08:07	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: EB-4**  
**Date Collected: 03/14/21 16:53**  
**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-2**  
**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		03/18/21 12:02	03/21/21 08:07	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		03/18/21 12:02	03/21/21 08:07	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		03/18/21 12:02	03/21/21 08:07	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		03/18/21 12:02	03/21/21 08:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		03/18/21 12:02	03/21/21 08:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		03/18/21 12:02	03/21/21 08:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.51	ng/L		03/18/21 12:02	03/21/21 08:07	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.48</b>	<b>J B</b>	1.8	0.48	ng/L		03/18/21 12:02	03/21/21 08:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.1	ng/L		03/18/21 12:02	03/21/21 08:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.2	ng/L		03/18/21 12:02	03/21/21 08:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.21	ng/L		03/18/21 12:02	03/21/21 08:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.3	ng/L		03/18/21 12:02	03/21/21 08:07	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		1.8	0.28	ng/L		03/18/21 12:02	03/21/21 08:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		03/18/21 12:02	03/21/21 08:07	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	76		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C4 PFHpA	86		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C4 PFOA	83		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C5 PFNA	80		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C2 PFDA	77		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C2 PFUnA	79		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C2 PFDoA	77		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C2 PFTeDA	77		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C3 PFBS	72		50 - 150				03/18/21 12:02	03/21/21 08:07	1
18O2 PFHxS	75		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C4 PFOS	74		50 - 150				03/18/21 12:02	03/21/21 08:07	1
d3-NMeFOSAA	88		50 - 150				03/18/21 12:02	03/21/21 08:07	1
d5-NEtFOSAA	75		50 - 150				03/18/21 12:02	03/21/21 08:07	1
13C3 HFPO-DA	77		50 - 150				03/18/21 12:02	03/21/21 08:07	1

**Client Sample ID: MW-1**  
**Date Collected: 03/14/21 14:06**  
**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-3**  
**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.61</b>	<b>J</b>	1.7	0.50	ng/L		03/18/21 12:02	03/21/21 08:17	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.22	ng/L		03/18/21 12:02	03/21/21 08:17	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.74	ng/L		03/18/21 12:02	03/21/21 08:17	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		03/18/21 12:02	03/21/21 08:17	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		03/18/21 12:02	03/21/21 08:17	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		03/18/21 12:02	03/21/21 08:17	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		03/18/21 12:02	03/21/21 08:17	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		03/18/21 12:02	03/21/21 08:17	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: MW-1**  
**Date Collected: 03/14/21 14:06**  
**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-3**  
**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		03/18/21 12:02	03/21/21 08:17	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		03/18/21 12:02	03/21/21 08:17	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>1.1</b>	<b>J</b>	1.7	0.49	ng/L		03/18/21 12:02	03/21/21 08:17	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.6</b>	<b>B</b>	1.7	0.47	ng/L		03/18/21 12:02	03/21/21 08:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		03/18/21 12:02	03/21/21 08:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		03/18/21 12:02	03/21/21 08:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		03/18/21 12:02	03/21/21 08:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		03/18/21 12:02	03/21/21 08:17	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.28	ng/L		03/18/21 12:02	03/21/21 08:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		03/18/21 12:02	03/21/21 08:17	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	77		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C4 PFHpA	85		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C4 PFOA	84		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C5 PFNA	74		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C2 PFDA	76		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C2 PFUnA	77		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C2 PFDoA	82		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C2 PFTeDA	77		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C3 PFBS	70		50 - 150				03/18/21 12:02	03/21/21 08:17	1
18O2 PFHxS	74		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C4 PFOS	72		50 - 150				03/18/21 12:02	03/21/21 08:17	1
d3-NMeFOSAA	85		50 - 150				03/18/21 12:02	03/21/21 08:17	1
d5-NEtFOSAA	82		50 - 150				03/18/21 12:02	03/21/21 08:17	1
13C3 HFPO-DA	78		50 - 150				03/18/21 12:02	03/21/21 08:17	1

**Client Sample ID: MW-2**  
**Date Collected: 03/14/21 12:07**  
**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-4**  
**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>6.5</b>		1.7	0.51	ng/L		03/18/21 12:02	03/21/21 08:26	1
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>3.2</b>		1.7	0.22	ng/L		03/18/21 12:02	03/21/21 08:26	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>3.1</b>		1.7	0.74	ng/L		03/18/21 12:02	03/21/21 08:26	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>2.0</b>		1.7	0.24	ng/L		03/18/21 12:02	03/21/21 08:26	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		03/18/21 12:02	03/21/21 08:26	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.96	ng/L		03/18/21 12:02	03/21/21 08:26	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		03/18/21 12:02	03/21/21 08:26	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		03/18/21 12:02	03/21/21 08:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.64	ng/L		03/18/21 12:02	03/21/21 08:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		03/18/21 12:02	03/21/21 08:26	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>1.3</b>	<b>J</b>	1.7	0.50	ng/L		03/18/21 12:02	03/21/21 08:26	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: MW-2**  
**Date Collected: 03/14/21 12:07**  
**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-4**  
**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>7.7</b>	<b>B</b>	1.7	0.47	ng/L		03/18/21 12:02	03/21/21 08:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.0	ng/L		03/18/21 12:02	03/21/21 08:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		03/18/21 12:02	03/21/21 08:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		03/18/21 12:02	03/21/21 08:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		03/18/21 12:02	03/21/21 08:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.28	ng/L		03/18/21 12:02	03/21/21 08:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		03/18/21 12:02	03/21/21 08:26	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	72		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C4 PFHpA	78		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C4 PFOA	73		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C5 PFNA	79		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C2 PFDA	76		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C2 PFUnA	72		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C2 PFDoA	82		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C2 PFTeDA	76		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C3 PFBS	65		50 - 150				03/18/21 12:02	03/21/21 08:26	1
18O2 PFHxS	70		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C4 PFOS	73		50 - 150				03/18/21 12:02	03/21/21 08:26	1
d3-NMeFOSAA	83		50 - 150				03/18/21 12:02	03/21/21 08:26	1
d5-NEtFOSAA	84		50 - 150				03/18/21 12:02	03/21/21 08:26	1
13C3 HFPO-DA	76		50 - 150				03/18/21 12:02	03/21/21 08:26	1

**Client Sample ID: MW-102**  
**Date Collected: 03/14/21 11:57**  
**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-5**  
**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>6.3</b>		1.7	0.50	ng/L		03/18/21 12:02	03/21/21 08:35	1
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>3.1</b>		1.7	0.22	ng/L		03/18/21 12:02	03/21/21 08:35	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.9</b>		1.7	0.73	ng/L		03/18/21 12:02	03/21/21 08:35	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>1.8</b>		1.7	0.23	ng/L		03/18/21 12:02	03/21/21 08:35	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		03/18/21 12:02	03/21/21 08:35	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		03/18/21 12:02	03/21/21 08:35	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		03/18/21 12:02	03/21/21 08:35	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		03/18/21 12:02	03/21/21 08:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		03/18/21 12:02	03/21/21 08:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		03/18/21 12:02	03/21/21 08:35	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>1.5</b>	<b>J</b>	1.7	0.49	ng/L		03/18/21 12:02	03/21/21 08:35	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>7.1</b>	<b>B</b>	1.7	0.47	ng/L		03/18/21 12:02	03/21/21 08:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		03/18/21 12:02	03/21/21 08:35	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: MW-102**

**Lab Sample ID: 320-71351-5**

Date Collected: 03/14/21 11:57

Matrix: Water

Date Received: 03/17/21 10:10

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		03/18/21 12:02	03/21/21 08:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		03/18/21 12:02	03/21/21 08:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.5	1.3	ng/L		03/18/21 12:02	03/21/21 08:35	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.28	ng/L		03/18/21 12:02	03/21/21 08:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.35	ng/L		03/18/21 12:02	03/21/21 08:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C4 PFHpA	90		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C4 PFOA	89		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C5 PFNA	85		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C2 PFDA	84		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C2 PFUnA	87		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C2 PFDoA	86		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C2 PFTeDA	84		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C3 PFBS	73		50 - 150				03/18/21 12:02	03/21/21 08:35	1
18O2 PFHxS	79		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C4 PFOS	82		50 - 150				03/18/21 12:02	03/21/21 08:35	1
d3-NMeFOSAA	97		50 - 150				03/18/21 12:02	03/21/21 08:35	1
d5-NEtFOSAA	85		50 - 150				03/18/21 12:02	03/21/21 08:35	1
13C3 HFPO-DA	81		50 - 150				03/18/21 12:02	03/21/21 08:35	1

**Client Sample ID: MW-3**

**Lab Sample ID: 320-71351-6**

Date Collected: 03/14/21 10:09

Matrix: Water

Date Received: 03/17/21 10:10

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.0		1.7	0.50	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluoroheptanoic acid (PFHpA)	0.72	J	1.7	0.22	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluorooctanoic acid (PFOA)	0.79	J	1.7	0.73	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.63	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluorobutanesulfonic acid (PFBS)	0.18	J	1.7	0.17	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluorohexanesulfonic acid (PFHxS)	2.8		1.7	0.49	ng/L		03/18/21 12:02	03/21/21 08:45	1
Perfluorooctanesulfonic acid (PFOS)	6.1	B	1.7	0.47	ng/L		03/18/21 12:02	03/21/21 08:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.3	1.0	ng/L		03/18/21 12:02	03/21/21 08:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.3	1.1	ng/L		03/18/21 12:02	03/21/21 08:45	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: MW-3**

**Lab Sample ID: 320-71351-6**

Date Collected: 03/14/21 10:09

Matrix: Water

Date Received: 03/17/21 10:10

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.21	ng/L		03/18/21 12:02	03/21/21 08:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		03/18/21 12:02	03/21/21 08:45	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.28	ng/L		03/18/21 12:02	03/21/21 08:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		03/18/21 12:02	03/21/21 08:45	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C4 PFHpA	82		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C4 PFOA	81		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C5 PFNA	82		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C2 PFDA	75		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C2 PFUnA	76		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C2 PFDoA	77		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C2 PFTeDA	75		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C3 PFBS	68		50 - 150				03/18/21 12:02	03/21/21 08:45	1
18O2 PFHxS	70		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C4 PFOS	72		50 - 150				03/18/21 12:02	03/21/21 08:45	1
d3-NMeFOSAA	75		50 - 150				03/18/21 12:02	03/21/21 08:45	1
d5-NEtFOSAA	74		50 - 150				03/18/21 12:02	03/21/21 08:45	1
13C3 HFPO-DA	73		50 - 150				03/18/21 12:02	03/21/21 08:45	1

**Client Sample ID: TWP-7**

**Lab Sample ID: 320-71351-7**

Date Collected: 03/13/21 16:43

Matrix: Water

Date Received: 03/17/21 10:10

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	3.1		1.8	0.52	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluoroheptanoic acid (PFHpA)	1.6	J	1.8	0.23	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluorooctanoic acid (PFOA)	1.4	J	1.8	0.77	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluorononanoic acid (PFNA)	0.76	J	1.8	0.24	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.99	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.66	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluorobutanesulfonic acid (PFBS)	0.30	J	1.8	0.18	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluorohexanesulfonic acid (PFHxS)	2.9		1.8	0.51	ng/L		03/18/21 12:02	03/21/21 08:54	1
Perfluorooctanesulfonic acid (PFOS)	5.3	B	1.8	0.49	ng/L		03/18/21 12:02	03/21/21 08:54	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		03/18/21 12:02	03/21/21 08:54	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		03/18/21 12:02	03/21/21 08:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.22	ng/L		03/18/21 12:02	03/21/21 08:54	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: TWP-7**

**Date Collected: 03/13/21 16:43**

**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-7**

**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.4	ng/L		03/18/21 12:02	03/21/21 08:54	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.8	0.29	ng/L		03/18/21 12:02	03/21/21 08:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		03/18/21 12:02	03/21/21 08:54	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	78		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C4 PFHpA	80		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C4 PFOA	81		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C5 PFNA	82		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C2 PFDA	73		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C2 PFUnA	76		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C2 PFDoA	78		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C2 PFTeDA	84		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C3 PFBS	68		50 - 150				03/18/21 12:02	03/21/21 08:54	1
18O2 PFHxS	73		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C4 PFOS	70		50 - 150				03/18/21 12:02	03/21/21 08:54	1
d3-NMeFOSAA	80		50 - 150				03/18/21 12:02	03/21/21 08:54	1
d5-NEtFOSAA	76		50 - 150				03/18/21 12:02	03/21/21 08:54	1
13C3 HFPO-DA	74		50 - 150				03/18/21 12:02	03/21/21 08:54	1

**Client Sample ID: TWP-5**

**Date Collected: 03/13/21 15:12**

**Date Received: 03/17/21 10:10**

**Lab Sample ID: 320-71351-8**

**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.86	J	1.8	0.53	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluoroheptanoic acid (PFHpA)	0.48	J	1.8	0.23	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluorooctanoic acid (PFOA)	1.3	J	1.8	0.77	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.66	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluorobutanesulfonic acid (PFBS)	0.20	J	1.8	0.18	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluorohexanesulfonic acid (PFHxS)	2.8		1.8	0.52	ng/L		03/18/21 12:02	03/21/21 09:13	1
Perfluorooctanesulfonic acid (PFOS)	82	B	1.8	0.49	ng/L		03/18/21 12:02	03/21/21 09:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		03/18/21 12:02	03/21/21 09:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		03/18/21 12:02	03/21/21 09:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.22	ng/L		03/18/21 12:02	03/21/21 09:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.4	ng/L		03/18/21 12:02	03/21/21 09:13	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: TWP-5**

**Lab Sample ID: 320-71351-8**

Date Collected: 03/13/21 15:12

Matrix: Water

Date Received: 03/17/21 10:10

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		03/18/21 12:02	03/21/21 09:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		03/18/21 12:02	03/21/21 09:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C4 PFHpA	89		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C4 PFOA	83		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C5 PFNA	80		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C2 PFDA	79		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C2 PFUnA	84		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C2 PFDoA	86		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C2 PFTeDA	80		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C3 PFBS	70		50 - 150				03/18/21 12:02	03/21/21 09:13	1
18O2 PFHxS	78		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C4 PFOS	83		50 - 150				03/18/21 12:02	03/21/21 09:13	1
d3-NMeFOSAA	83		50 - 150				03/18/21 12:02	03/21/21 09:13	1
d5-NEtFOSAA	82		50 - 150				03/18/21 12:02	03/21/21 09:13	1
13C3 HFPO-DA	94		50 - 150				03/18/21 12:02	03/21/21 09:13	1

**Client Sample ID: TWP-105**

**Lab Sample ID: 320-71351-9**

Date Collected: 03/13/21 15:02

Matrix: Water

Date Received: 03/17/21 10:10

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>1.0</b>	<b>J</b>	1.8	0.53	ng/L		03/18/21 12:02	03/21/21 09:22	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.23	ng/L		03/18/21 12:02	03/21/21 09:22	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>1.1</b>	<b>J</b>	1.8	0.78	ng/L		03/18/21 12:02	03/21/21 09:22	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		03/18/21 12:02	03/21/21 09:22	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.29	ng/L		03/18/21 12:02	03/21/21 09:22	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		03/18/21 12:02	03/21/21 09:22	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.51	ng/L		03/18/21 12:02	03/21/21 09:22	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		03/18/21 12:02	03/21/21 09:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.67	ng/L		03/18/21 12:02	03/21/21 09:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		03/18/21 12:02	03/21/21 09:22	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.2</b>		1.8	0.52	ng/L		03/18/21 12:02	03/21/21 09:22	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>90</b>	<b>B</b>	1.8	0.50	ng/L		03/18/21 12:02	03/21/21 09:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		03/18/21 12:02	03/21/21 09:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		03/18/21 12:02	03/21/21 09:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.22	ng/L		03/18/21 12:02	03/21/21 09:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.7	1.4	ng/L		03/18/21 12:02	03/21/21 09:22	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid	ND		1.8	0.29	ng/L		03/18/21 12:02	03/21/21 09:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.37	ng/L		03/18/21 12:02	03/21/21 09:22	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: TWP-105**

**Lab Sample ID: 320-71351-9**

**Date Collected: 03/13/21 15:02**

**Matrix: Water**

**Date Received: 03/17/21 10:10**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	87		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C4 PFHpA	91		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C4 PFOA	89		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C5 PFNA	91		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C2 PFDA	80		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C2 PFUnA	86		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C2 PFDoA	86		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C2 PFTeDA	78		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C3 PFBS	73		50 - 150	03/18/21 12:02	03/21/21 09:22	1
18O2 PFHxS	79		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C4 PFOS	79		50 - 150	03/18/21 12:02	03/21/21 09:22	1
d3-NMeFOSAA	85		50 - 150	03/18/21 12:02	03/21/21 09:22	1
d5-NEtFOSAA	84		50 - 150	03/18/21 12:02	03/21/21 09:22	1
13C3 HFPO-DA	91		50 - 150	03/18/21 12:02	03/21/21 09:22	1

**Client Sample ID: TWP-6**

**Lab Sample ID: 320-71351-10**

**Date Collected: 03/13/21 14:20**

**Matrix: Water**

**Date Received: 03/17/21 10:10**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Perfluorohexanoic acid (PFHxA)	1.9		1.8	0.53	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluoroheptanoic acid (PFHpA)	0.53	J	1.8	0.23	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluorooctanoic acid (PFOA)	3.3		1.8	0.77	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluorotridecanoic acid (PFTriA)	1.8	I	1.8	1.2	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.66	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluorobutanesulfonic acid (PFBS)	0.52	J	1.8	0.18	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluorohexanesulfonic acid (PFHxS)	11		1.8	0.52	ng/L		03/18/21 12:02	03/21/21 09:31	1
Perfluorooctanesulfonic acid (PFOS)	48	B	1.8	0.49	ng/L		03/18/21 12:02	03/21/21 09:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		03/18/21 12:02	03/21/21 09:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		03/18/21 12:02	03/21/21 09:31	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.22	ng/L		03/18/21 12:02	03/21/21 09:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.4	ng/L		03/18/21 12:02	03/21/21 09:31	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		1.8	0.29	ng/L		03/18/21 12:02	03/21/21 09:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		03/18/21 12:02	03/21/21 09:31	1

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	96		50 - 150	03/18/21 12:02	03/21/21 09:31	1
13C4 PFHpA	100		50 - 150	03/18/21 12:02	03/21/21 09:31	1
13C4 PFOA	97		50 - 150	03/18/21 12:02	03/21/21 09:31	1
13C5 PFNA	90		50 - 150	03/18/21 12:02	03/21/21 09:31	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

**Client Sample ID: TWP-6**

**Lab Sample ID: 320-71351-10**

**Date Collected: 03/13/21 14:20**

**Matrix: Water**

**Date Received: 03/17/21 10:10**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFDA	93		50 - 150	03/18/21 12:02	03/21/21 09:31	1
13C2 PFUnA	95		50 - 150	03/18/21 12:02	03/21/21 09:31	1
13C2 PFDoA	95		50 - 150	03/18/21 12:02	03/21/21 09:31	1
13C2 PFTeDA	94		50 - 150	03/18/21 12:02	03/21/21 09:31	1
13C3 PFBS	92		50 - 150	03/18/21 12:02	03/21/21 09:31	1
18O2 PFHxS	93		50 - 150	03/18/21 12:02	03/21/21 09:31	1
13C4 PFOS	93		50 - 150	03/18/21 12:02	03/21/21 09:31	1
d3-NMeFOSAA	99		50 - 150	03/18/21 12:02	03/21/21 09:31	1
d5-NEtFOSAA	90		50 - 150	03/18/21 12:02	03/21/21 09:31	1
13C3 HFPO-DA	98		50 - 150	03/18/21 12:02	03/21/21 09:31	1

# Isotope Dilution Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDoA (50-150)	PFTDA (50-150)
320-71351-1	MW-4	74	79	78	84	74	77	77	81
320-71351-2	EB-4	76	86	83	80	77	79	77	77
320-71351-3	MW-1	77	85	84	74	76	77	82	77
320-71351-4	MW-2	72	78	73	79	76	72	82	76
320-71351-5	MW-102	82	90	89	85	84	87	86	84
320-71351-6	MW-3	81	82	81	82	75	76	77	75
320-71351-7	TWP-7	78	80	81	82	73	76	78	84
320-71351-8	TWP-5	82	89	83	80	79	84	86	80
320-71351-9	TWP-105	87	91	89	91	80	86	86	78
320-71351-10	TWP-6	96	100	97	90	93	95	95	94
LCS 320-471656/2-A	Lab Control Sample	80	82	86	77	74	82	80	79
LCSD 320-471656/3-A	Lab Control Sample Dup	88	87	83	90	79	90	88	88
MB 320-471656/1-A	Method Blank	83	88	84	83	81	84	90	79

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)
320-71351-1	MW-4	70	75	70	85	81	73
320-71351-2	EB-4	72	75	74	88	75	77
320-71351-3	MW-1	70	74	72	85	82	78
320-71351-4	MW-2	65	70	73	83	84	76
320-71351-5	MW-102	73	79	82	97	85	81
320-71351-6	MW-3	68	70	72	75	74	73
320-71351-7	TWP-7	68	73	70	80	76	74
320-71351-8	TWP-5	70	78	83	83	82	94
320-71351-9	TWP-105	73	79	79	85	84	91
320-71351-10	TWP-6	92	93	93	99	90	98
LCS 320-471656/2-A	Lab Control Sample	76	76	74	80	79	76
LCSD 320-471656/3-A	Lab Control Sample Dup	81	80	88	100	89	82
MB 320-471656/1-A	Method Blank	80	81	79	93	94	82

#### Surrogate Legend

- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- HFPODA = 13C3 HFPO-DA

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

**Lab Sample ID: MB 320-471656/1-A**  
**Matrix: Water**  
**Analysis Batch: 472501**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 471656**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		03/18/21 12:02	03/21/21 07:30	1
Perfluorooctanesulfonic acid (PFOS)	0.877	J	2.0	0.54	ng/L		03/18/21 12:02	03/21/21 07:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		03/18/21 12:02	03/21/21 07:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		03/18/21 12:02	03/21/21 07:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		03/18/21 12:02	03/21/21 07:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		03/18/21 12:02	03/21/21 07:30	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	ng/L		03/18/21 12:02	03/21/21 07:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		03/18/21 12:02	03/21/21 07:30	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	83		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C4 PFHpA	88		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C4 PFOA	84		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C5 PFNA	83		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C2 PFDA	81		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C2 PFUnA	84		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C2 PFDoA	90		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C2 PFTeDA	79		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C3 PFBS	80		50 - 150	03/18/21 12:02	03/21/21 07:30	1
18O2 PFHxS	81		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C4 PFOS	79		50 - 150	03/18/21 12:02	03/21/21 07:30	1
d3-NMeFOSAA	93		50 - 150	03/18/21 12:02	03/21/21 07:30	1
d5-NEtFOSAA	94		50 - 150	03/18/21 12:02	03/21/21 07:30	1
13C3 HFPO-DA	82		50 - 150	03/18/21 12:02	03/21/21 07:30	1

**Lab Sample ID: LCS 320-471656/2-A**  
**Matrix: Water**  
**Analysis Batch: 472501**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471656**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluoroheptanoic acid (PFHpA)	40.0	43.5		ng/L		109	72 - 130
Perfluorooctanoic acid (PFOA)	40.0	44.2		ng/L		111	71 - 133
Perfluorononanoic acid (PFNA)	40.0	48.3		ng/L		121	69 - 130

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCS 320-471656/2-A**  
**Matrix: Water**  
**Analysis Batch: 472501**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471656**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	40.0	47.5		ng/L		119	71 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	46.6		ng/L		117	69 - 133
Perfluorododecanoic acid (PFDoA)	40.0	47.6		ng/L		119	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	43.9		ng/L		110	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	44.9		ng/L		112	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	38.3		ng/L		108	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	44.2		ng/L		121	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	43.3		ng/L		117	65 - 140
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	40.0	39.4		ng/L		99	65 - 136
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	40.0	48.7		ng/L		122	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	47.0		ng/L		126	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	44.6		ng/L		112	72 - 132
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	37.7	47.2		ng/L		125	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	46.7		ng/L		124	81 - 141

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	80		50 - 150
13C4 PFHpA	82		50 - 150
13C4 PFOA	86		50 - 150
13C5 PFNA	77		50 - 150
13C2 PFDA	74		50 - 150
13C2 PFUnA	82		50 - 150
13C2 PFDoA	80		50 - 150
13C2 PFTeDA	79		50 - 150
13C3 PFBS	76		50 - 150
18O2 PFHxS	76		50 - 150
13C4 PFOS	74		50 - 150
d3-NMeFOSAA	80		50 - 150
d5-NEtFOSAA	79		50 - 150
13C3 HFPO-DA	76		50 - 150

**Lab Sample ID: LCSD 320-471656/3-A**  
**Matrix: Water**  
**Analysis Batch: 472501**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 471656**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
Perfluorohexanoic acid (PFHxA)	40.0	46.4		ng/L		116	72 - 129	11	30
Perfluoroheptanoic acid (PFHpA)	40.0	46.2		ng/L		115	72 - 130	6	30
Perfluorooctanoic acid (PFOA)	40.0	46.3		ng/L		116	71 - 133	4	30

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCSD 320-471656/3-A**  
**Matrix: Water**  
**Analysis Batch: 472501**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 471656**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorononanoic acid (PFNA)	40.0	44.5		ng/L		111	69 - 130	8	30
Perfluorodecanoic acid (PFDA)	40.0	45.6		ng/L		114	71 - 129	4	30
Perfluoroundecanoic acid (PFUnA)	40.0	44.4		ng/L		111	69 - 133	5	30
Perfluorododecanoic acid (PFDoA)	40.0	43.9		ng/L		110	72 - 134	8	30
Perfluorotridecanoic acid (PFTriA)	40.0	42.9		ng/L		107	65 - 144	2	30
Perfluorotetradecanoic acid (PFTeA)	40.0	47.2		ng/L		118	71 - 132	5	30
Perfluorobutanesulfonic acid (PFBS)	35.4	39.8		ng/L		112	72 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	44.3		ng/L		122	68 - 131	0	30
Perfluorooctanesulfonic acid (PFOS)	37.1	39.8		ng/L		107	65 - 140	8	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.2		ng/L		95	65 - 136	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	42.5		ng/L		106	61 - 135	14	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	42.4		ng/L		114	77 - 137	10	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	42.9		ng/L		107	72 - 132	4	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	37.7	41.8		ng/L		111	76 - 136	12	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	42.7		ng/L		113	81 - 141	9	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	88		50 - 150
13C4 PFHpA	87		50 - 150
13C4 PFOA	83		50 - 150
13C5 PFNA	90		50 - 150
13C2 PFDA	79		50 - 150
13C2 PFUnA	90		50 - 150
13C2 PFDoA	88		50 - 150
13C2 PFTeDA	88		50 - 150
13C3 PFBS	81		50 - 150
18O2 PFHxS	80		50 - 150
13C4 PFOS	88		50 - 150
d3-NMeFOSAA	100		50 - 150
d5-NEtFOSAA	89		50 - 150
13C3 HFPO-DA	82		50 - 150

# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## LCMS

### Prep Batch: 471656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71351-1	MW-4	Total/NA	Water	3535	
320-71351-2	EB-4	Total/NA	Water	3535	
320-71351-3	MW-1	Total/NA	Water	3535	
320-71351-4	MW-2	Total/NA	Water	3535	
320-71351-5	MW-102	Total/NA	Water	3535	
320-71351-6	MW-3	Total/NA	Water	3535	
320-71351-7	TWP-7	Total/NA	Water	3535	
320-71351-8	TWP-5	Total/NA	Water	3535	
320-71351-9	TWP-105	Total/NA	Water	3535	
320-71351-10	TWP-6	Total/NA	Water	3535	
MB 320-471656/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-471656/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-471656/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

### Analysis Batch: 472501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71351-1	MW-4	Total/NA	Water	EPA 537(Mod)	471656
320-71351-2	EB-4	Total/NA	Water	EPA 537(Mod)	471656
320-71351-3	MW-1	Total/NA	Water	EPA 537(Mod)	471656
320-71351-4	MW-2	Total/NA	Water	EPA 537(Mod)	471656
320-71351-5	MW-102	Total/NA	Water	EPA 537(Mod)	471656
320-71351-6	MW-3	Total/NA	Water	EPA 537(Mod)	471656
320-71351-7	TWP-7	Total/NA	Water	EPA 537(Mod)	471656
320-71351-8	TWP-5	Total/NA	Water	EPA 537(Mod)	471656
320-71351-9	TWP-105	Total/NA	Water	EPA 537(Mod)	471656
320-71351-10	TWP-6	Total/NA	Water	EPA 537(Mod)	471656
MB 320-471656/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	471656
LCS 320-471656/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	471656
LCSD 320-471656/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	471656

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Client Sample ID: MW-4

Date Collected: 03/14/21 16:43

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			291.4 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 07:58	RS1	TAL SAC

## Client Sample ID: EB-4

Date Collected: 03/14/21 16:53

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			280.9 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 08:07	RS1	TAL SAC

## Client Sample ID: MW-1

Date Collected: 03/14/21 14:06

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			288.5 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 08:17	RS1	TAL SAC

## Client Sample ID: MW-2

Date Collected: 03/14/21 12:07

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			286 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 08:26	RS1	TAL SAC

## Client Sample ID: MW-102

Date Collected: 03/14/21 11:57

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			289.5 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 08:35	RS1	TAL SAC

## Client Sample ID: MW-3

Date Collected: 03/14/21 10:09

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			290.2 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 08:45	RS1	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Client Sample ID: TWP-7

Date Collected: 03/13/21 16:43

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			276.9 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 08:54	RS1	TAL SAC

## Client Sample ID: TWP-5

Date Collected: 03/13/21 15:12

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			275.6 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 09:13	RS1	TAL SAC

## Client Sample ID: TWP-105

Date Collected: 03/13/21 15:02

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			271.9 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 09:22	RS1	TAL SAC

## Client Sample ID: TWP-6

Date Collected: 03/13/21 14:20

Date Received: 03/17/21 10:10

## Lab Sample ID: 320-71351-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			275.3 mL	10.0 mL	471656	03/18/21 12:02	LN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472501	03/21/21 09:31	RS1	TAL SAC

### Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Accreditation/Certification Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

## Laboratory: Eurofins TestAmerica, Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Method Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod) 3535	PFAS for QSM 5.3, Table B-15 Solid-Phase Extraction (SPE)	EPA SW846	TAL SAC TAL SAC

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Sample Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71351-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-71351-1	MW-4	Water	03/14/21 16:43	03/17/21 10:10	
320-71351-2	EB-4	Water	03/14/21 16:53	03/17/21 10:10	
320-71351-3	MW-1	Water	03/14/21 14:06	03/17/21 10:10	
320-71351-4	MW-2	Water	03/14/21 12:07	03/17/21 10:10	
320-71351-5	MW-102	Water	03/14/21 11:57	03/17/21 10:10	
320-71351-6	MW-3	Water	03/14/21 10:09	03/17/21 10:10	
320-71351-7	TWP-7	Water	03/13/21 16:43	03/17/21 10:10	
320-71351-8	TWP-5	Water	03/13/21 15:12	03/17/21 10:10	
320-71351-9	TWP-105	Water	03/13/21 15:02	03/17/21 10:10	
320-71351-10	TWP-6	Water	03/13/21 14:20	03/17/21 10:10	



2355 Hill Road  
Fairbanks, AK 99709  
(907) 479-0600  
www.shannonwilson.com

# CHAIN-OF-CUSTODY RECORD

Laboratory Attn: David Alftucker

Analytical Methods (include preservative if used)

Quote No: \_\_\_\_\_

J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
 Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
MW-4		1643	3/14/21	2	Groundwater
EB-4		1653			
MW-1		1406			
MW-2		1207			
MW-102		1157			
MW-3		1009			
TWP-7		1643	3/13/21		
TWP-5		1512			
TWP-105		1502			
TWP-6		1420			



Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Number: 103311-009	Total No. of Containers: 20	Signature: <u>Rachel Walker</u>	Signature: _____	Signature: _____
Name: Cordova SRES	COC Seals/Intact? Y/N/NA	Printed Name: <u>Rachel Walker</u>	Printed Name: _____	Printed Name: _____
Contact: <u>VEW@sharwil.com</u>	Received Good Cond./Cold	Date: <u>3/16/21</u>	Date: _____	Date: _____
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temp: _____	Company: <u>Shannon + Wilson</u>	Company: _____	Company: _____
Sampler: <u>RLW + DHF</u>	Delivery Method: _____	Received By: 1. Signature: <u>Shannon + Wilson</u>	Received By: 2. Signature: _____	Received By: 3. Signature: _____
Notes: _____				

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

# Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-71351-1

**Login Number: 71351**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Nuval, Mark-Anthony M**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



**Laboratory Data Review Checklist**

Completed By:

Justin Risley

Title:

Engineering Staff

Date:

3/29/21

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

Eurofins TestAmerica, Sacramento

Laboratory Report Number:

320-71351-1

Laboratory Report Date:

3/26/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

ADEC File Number:

2215.38.035

Hazard Identification Number:

27304

320-71351-1

Laboratory Report Date:

3/26/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes  No  N/A  Comments:

TestAmerica/Eurofins Laboratories West Sacramento, CA is CS certified for the analysis of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) by method 537.

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

Analysis was performed by Eurofins TestAmerica laboratory in Sacraments, CA.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

The temperature of the cooler at receipt was 0.4° C.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

The laboratory report noted that samples were received in good condition.

e. Data quality or usability affected?

Comments:

Data quality and usability were not affected; see above.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

The “I” qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. *TWP-6*

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-471656.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

The case narrative does not list any corrective actions. See the following sections of our assessment.



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d. What is the effect on data quality/usability according to the case narrative?

Comments:

The "I" flag applied to PFTriA in sample *TWP-6* denotes a degree of uncertainty with a high bias, according to the case narrative. This analyte has been flagged with a "JH" in the associated data table.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

Soils were not reported with this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

e. Data quality or usability affected?

Data quality and usability were not affected; see above.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

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ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

Method blank results were below the LOQ; however, perfluorooctanesulfonic acid (PFOS) was detected below the LOQ in method blank 320-471656/1-A.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Method blank 320-471656/1-A is a quality-control sample associated with project samples *MW-4*, *EB-4*, *MW-1*, *MW-2*, *MW-102*, *MW-3*, *TWP-7*, *TWP-5*, *TWP-105*, and *TWP-6*.

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iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

The PFOS result in *MW-4* was less than the LOQ. The result is considered not detected and is qualified 'UB' at the LOQ.

The PFOS result in *MW-1* was greater than the LOQ but less than ten times the concentration detected in the method blank. The result is considered not detected and is qualified 'UB' at the detected result.

The PFOS result in *EB-4* was less than the LOQ. The result is considered not detected and is qualified 'UB' at the LOQ.

The PFOS results in project samples *MW-2* and *MW-102* were greater than the respective LOQ but less than ten times the concentration detected in the method blank. The results are considered not detected and is qualified 'UB' at the detected concentrations.

The PFOS result in *MW-3* was greater than the LOQ but less than ten times the concentration detected in the method blank. The result is considered not detected and is qualified 'UB' at the detected result.

The PFOS result in *TWP-7* was greater than the LOQ but less than ten times the concentration detected in the method blank. The result is considered not detected and is qualified 'UB' at the detected result.

The PFOS result in *TWP-5* was greater than ten times the concentration detected in the method blank. The result is not given a qualification.

The PFOS result in *TWP-105* was greater than ten-times the concentration detected in the method blank. The result is not given a qualification.

The PFOS result in *TWP-6* was greater than ten-times the concentration detected in the method blank. The result is not given a qualification.

v. Data quality or usability affected?

Comments:

Yes; see above.

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b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

An LCS/LCSD was reported.

- ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/Inorganic analyses were not requested with this work order.

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A; see above.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were not affected; see above.

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c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

There was not a sufficient amount of sample volume available to perform MS/MSD samples. LCS and LCSD samples were used to demonstrate laboratory precision and accuracy.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/inorganics analysis was not requested with this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

See above.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  Comments:

See above.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A; see above.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

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3/26/21

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vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were not affected; see above.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

IDA recoveries were within laboratory control limits.

iv. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes  No  N/A  Comments:

PFAS are not volatile compounds; therefore, a trip blank is not required.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

See above.

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ADOT&PF Cordova Airport ARFF Bldg

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

See above.

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; see above.

v. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

Field duplicate sample pairs MW-2/MW-102 and TWP-5/TWP-105 were submitted with this work order.

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R<sub>1</sub> = Sample Concentration  
R<sub>2</sub> = Field Duplicate Concentration

Yes  No  N/A  Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability are not affected; see above.

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g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Equipment blank *EB-4* was submitted with this work order.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

PFOS was detected below the LOQ in the EB sample; however, the EB was affected by laboratory contamination, as reported in the associated method blank sample.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; see above.

iii. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

Other data flags or qualifiers were not required.



## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-71353-1  
Client Project/Site: Cordova SREB  
Revision: 1

For:  
Shannon & Wilson, Inc  
2355 Hill Rd.  
Fairbanks, Alaska 99709-5244

Attn: Valerie Webb



---

Authorized for release by:  
4/21/2021 11:32:56 AM

David Alltucker, Project Manager I  
(916)374-4383  
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*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Definitions/Glossary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

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**Job ID: 320-71353-1**

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**Laboratory: Eurofins TestAmerica, Sacramento**

## Narrative

**Job Narrative  
320-71353-1**

### Receipt

The samples were received on 3/17/2021 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.4° C.

### LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Organic Prep

Method 537.1 DW: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-471713.

Method 537.1 DW: The following samples PW-002 (320-71353-2) and PW-102 (320-71353-3) in preparation batch 320-471713 were observed to be yellow in color prior to extraction.

Method 537.1 DW: The following samples PW-002 (320-71353-2) and PW-102 (320-71353-3) in preparation batch 320-471713 were observed to be light brown in color after extraction and final voluming.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

## Client Sample ID: PW-001

Lab Sample ID: 320-71353-1

No Detections.

## Client Sample ID: PW-002

Lab Sample ID: 320-71353-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.3		1.9	0.48	ng/L	1		537.1 DW	Total/NA

## Client Sample ID: PW-102

Lab Sample ID: 320-71353-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.1		1.9	0.47	ng/L	1		537.1 DW	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

**Client Sample ID: PW-001**

**Lab Sample ID: 320-71353-1**

**Date Collected: 03/10/21 09:34**

**Matrix: Water**

**Date Received: 03/17/21 11:00**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.46	ng/L		03/18/21 13:04	03/19/21 11:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		70 - 130	03/18/21 13:04	03/19/21 11:51	1
13C2 PFDA	121		70 - 130	03/18/21 13:04	03/19/21 11:51	1
d5-NEtFOSAA	104		70 - 130	03/18/21 13:04	03/19/21 11:51	1
13C3 HFPO-DA	110		70 - 130	03/18/21 13:04	03/19/21 11:51	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

**Client Sample ID: PW-002**

**Lab Sample ID: 320-71353-2**

**Date Collected: 03/10/21 10:30**

**Matrix: Water**

**Date Received: 03/17/21 11:00**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.3</b>		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.48	ng/L		03/18/21 13:04	03/19/21 11:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	112		70 - 130				03/18/21 13:04	03/19/21 11:59	1
13C2 PFDA	114		70 - 130				03/18/21 13:04	03/19/21 11:59	1
d5-NEtFOSAA	111		70 - 130				03/18/21 13:04	03/19/21 11:59	1
13C3 HFPO-DA	101		70 - 130				03/18/21 13:04	03/19/21 11:59	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

**Client Sample ID: PW-102**

**Lab Sample ID: 320-71353-3**

**Date Collected: 03/10/21 10:20**

**Matrix: Water**

**Date Received: 03/17/21 11:00**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.1</b>		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.47	ng/L		03/18/21 13:04	03/19/21 12:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		70 - 130	03/18/21 13:04	03/19/21 12:07	1
13C2 PFDA	109		70 - 130	03/18/21 13:04	03/19/21 12:07	1
d5-NEtFOSAA	114		70 - 130	03/18/21 13:04	03/19/21 12:07	1
13C3 HFPO-DA	104		70 - 130	03/18/21 13:04	03/19/21 12:07	1



# Surrogate Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA	PFDA	d5NEFOS	HFPODA
		(70-130)	(70-130)	(70-130)	(70-130)
320-71353-1	PW-001	110	121	104	110
320-71353-2	PW-002	112	114	111	101
320-71353-3	PW-102	110	109	114	104
LCS 320-471713/2-A	Lab Control Sample	107	111	103	102
LCSD 320-471713/3-A	Lab Control Sample Dup	112	123	111	107
MB 320-471713/1-A	Method Blank	107	111	102	97

### Surrogate Legend

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

d5NEFOS = d5-NEtFOSAA

HFPODA = 13C3 HFPO-DA

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

## Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)

**Lab Sample ID: MB 320-471713/1-A**  
**Matrix: Water**  
**Analysis Batch: 471998**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 471713**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.50	ng/L		03/18/21 13:04	03/19/21 11:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	107		70 - 130	03/18/21 13:04	03/19/21 11:44	1
13C2 PFDA	111		70 - 130	03/18/21 13:04	03/19/21 11:44	1
d5-NEtFOSAA	102		70 - 130	03/18/21 13:04	03/19/21 11:44	1
13C3 HFPO-DA	97		70 - 130	03/18/21 13:04	03/19/21 11:44	1

**Lab Sample ID: LCS 320-471713/2-A**  
**Matrix: Water**  
**Analysis Batch: 471998**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471713**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	80.0	78.7		ng/L		98	70 - 130
Perfluoroheptanoic acid (PFHpA)	80.0	81.2		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	80.0	76.6		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	80.0	86.1		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	80.0	77.7		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	80.0	83.0		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	80.0	73.6		ng/L		92	70 - 130
Perfluorotridecanoic acid (PFTriA)	80.0	75.7		ng/L		95	70 - 130
Perfluorotetradecanoic acid (PFTeA)	80.0	74.3		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	70.7	68.1		ng/L		96	70 - 130

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-71353-1

## Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS) (Continued)

**Lab Sample ID: LCS 320-471713/2-A**  
**Matrix: Water**  
**Analysis Batch: 471998**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471713**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanesulfonic acid (PFHxS)	72.8	67.6		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	74.2	67.4		ng/L		91	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	80.0	76.4		ng/L		95	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	80.0	81.9		ng/L		102	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	74.6	68.3		ng/L		92	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PFHexafluoropropylene Oxide Dimer Acid (HFPO-DA)	75.4	70.5		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	80.0	74.0		ng/L		92	70 - 130
	75.4	76.8		ng/L		102	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	107		70 - 130
13C2 PFDA	111		70 - 130
d5-NEtFOSAA	103		70 - 130
13C3 HFPO-DA	102		70 - 130

**Lab Sample ID: LCSD 320-471713/3-A**  
**Matrix: Water**  
**Analysis Batch: 471998**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 471713**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	80.0	82.6		ng/L		103	70 - 130	5	30
Perfluoroheptanoic acid (PFHpA)	80.0	88.5		ng/L		111	70 - 130	9	30
Perfluorooctanoic acid (PFOA)	80.0	81.0		ng/L		101	70 - 130	6	30
Perfluorononanoic acid (PFNA)	80.0	91.7		ng/L		115	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	80.0	81.9		ng/L		102	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	80.0	90.7		ng/L		113	70 - 130	9	30
Perfluorododecanoic acid (PFDoA)	80.0	88.9		ng/L		111	70 - 130	19	30
Perfluorotridecanoic acid (PFTriA)	80.0	85.7		ng/L		107	70 - 130	12	30
Perfluorotetradecanoic acid (PFTeA)	80.0	80.9		ng/L		101	70 - 130	9	30
Perfluorobutanesulfonic acid (PFBS)	70.7	70.2		ng/L		99	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	72.8	70.7		ng/L		97	70 - 130	5	30
Perfluorooctanesulfonic acid (PFOS)	74.2	69.7		ng/L		94	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	80.0	79.7		ng/L		100	70 - 130	4	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	80.0	83.6		ng/L		105	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	74.6	72.3		ng/L		97	70 - 130	6	30

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-71353-1

## Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS) (Continued)

**Lab Sample ID: LCSD 320-471713/3-A**  
**Matrix: Water**  
**Analysis Batch: 471998**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 471713**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	75.4	73.5		ng/L		98	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	80.0	77.7		ng/L		97	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	75.4	81.2		ng/L		108	70 - 130	6	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C2 PFHxA	112		70 - 130
13C2 PFDA	123		70 - 130
d5-NEtFOSAA	111		70 - 130
13C3 HFPO-DA	107		70 - 130

# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

## LCMS

### Prep Batch: 471713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71353-1	PW-001	Total/NA	Water	537.1 DW	
320-71353-2	PW-002	Total/NA	Water	537.1 DW	
320-71353-3	PW-102	Total/NA	Water	537.1 DW	
MB 320-471713/1-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 320-471713/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 320-471713/3-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	

### Analysis Batch: 471998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71353-1	PW-001	Total/NA	Water	537.1 DW	471713
320-71353-2	PW-002	Total/NA	Water	537.1 DW	471713
320-71353-3	PW-102	Total/NA	Water	537.1 DW	471713
MB 320-471713/1-A	Method Blank	Total/NA	Water	537.1 DW	471713
LCS 320-471713/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	471713
LCSD 320-471713/3-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	471713

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

**Client Sample ID: PW-001**

**Date Collected: 03/10/21 09:34**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71353-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			270.6 mL	1.00 mL	471713	03/18/21 13:04	EH	TAL SAC
Total/NA	Analysis	537.1 DW		1			471998	03/19/21 11:51	D1R	TAL SAC

**Client Sample ID: PW-002**

**Date Collected: 03/10/21 10:30**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71353-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			262.9 mL	1.00 mL	471713	03/18/21 13:04	EH	TAL SAC
Total/NA	Analysis	537.1 DW		1			471998	03/19/21 11:59	D1R	TAL SAC

**Client Sample ID: PW-102**

**Date Collected: 03/10/21 10:20**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71353-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			267.3 mL	1.00 mL	471713	03/18/21 13:04	EH	TAL SAC
Total/NA	Analysis	537.1 DW		1			471998	03/19/21 12:07	D1R	TAL SAC

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Accreditation/Certification Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-71353-1

## Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
537.1 DW	537.1 DW	Water	11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)
537.1 DW	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1 DW	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)
537.1 DW	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)
537.1 DW	537.1 DW	Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537.1 DW	537.1 DW	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537.1 DW	537.1 DW	Water	Perfluorobutanesulfonic acid (PFBS)
537.1 DW	537.1 DW	Water	Perfluorodecanoic acid (PFDA)
537.1 DW	537.1 DW	Water	Perfluorododecanoic acid (PFDoA)
537.1 DW	537.1 DW	Water	Perfluoroheptanoic acid (PFHpA)
537.1 DW	537.1 DW	Water	Perfluorohexanesulfonic acid (PFHxS)
537.1 DW	537.1 DW	Water	Perfluorohexanoic acid (PFHxA)
537.1 DW	537.1 DW	Water	Perfluorononanoic acid (PFNA)
537.1 DW	537.1 DW	Water	Perfluorooctanesulfonic acid (PFOS)
537.1 DW	537.1 DW	Water	Perfluorooctanoic acid (PFOA)
537.1 DW	537.1 DW	Water	Perfluorotetradecanoic acid (PFTeA)
537.1 DW	537.1 DW	Water	Perfluorotridecanoic acid (PFTriA)
537.1 DW	537.1 DW	Water	Perfluoroundecanoic acid (PFUnA)

# Method Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

Method	Method Description	Protocol	Laboratory
537.1 DW	Perfluorinated Alkyl Acids (LC/MS)	EPA	TAL SAC
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	TAL SAC

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600





# Sample Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71353-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-71353-1	PW-001	Water	03/10/21 09:34	03/17/21 11:00	
320-71353-2	PW-002	Water	03/10/21 10:30	03/17/21 11:00	
320-71353-3	PW-102	Water	03/10/21 10:20	03/17/21 11:00	

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2355 Hill Road  
Fairbanks, AK 99709  
(907) 479-0600  
www.shannonwilson.com

# CHAIN-OF-CUSTODY RECORD

Page of 1  
Laboratory TestAmerica  
Attn: DAVID HILFUCKER

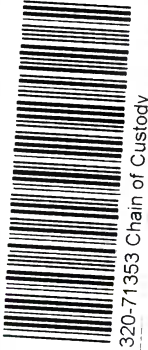
Analytical Methods (include preservative if used)

Quote No: \_\_\_\_\_

J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
 Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
PW-001		934	3/10/21	2	Drinking Water
PW-002		1030	3/10/21	2	
PW-102		1020	3/10/21	2	



PFAS 18 (637-1)  
 PFAS 18 (637-1)  
 PFAS 18 (637-1)

Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Number: 103311-009 Name: Cordova SREB Contact: VEW@shannonwilson.com Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Sampler: RLW	Total No. of Containers: 6 COC Seals/Intact? Y/N/NA Received Good Cond./Cold Temp: Delivery Method:	Signature: <u>Michael Wadler</u> Printed Name: <u>Michael Wadler</u> Date: <u>3/10/21</u>	Signature: _____ Printed Name: _____ Date: _____	Signature: _____ Printed Name: _____ Date: _____
Notes:		Signature: <u>Shannon + Wilson</u> Printed Name: <u>Shannon + Wilson</u> Date: <u>3/10/21</u>	Signature: _____ Printed Name: _____ Date: _____	Signature: _____ Printed Name: _____ Date: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

# Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-71353-1

**Login Number: 71353**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Nuval, Mark-Anthony M**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**Laboratory Data Review Checklist**

Completed By:

Rachel Willis

Title:

Environmental Scientist

Date:

4/21/21

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

Eurofins TestAmerica Laboratories, Inc.

Laboratory Report Number:

320-71353-1 Revision 1

Laboratory Report Date:

4/21/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

ADEC File Number:

2215.38.035

Hazard Identification Number:

27304

Laboratory Report Date:

4/21/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes  No  N/A  Comments:

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

The samples were analyzed by the Eurofins TestAmerica Laboratory in Sacramento, California.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

Laboratory Report Date:

4/21/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

The laboratory sample receipt indicates the samples were received in good condition.

e. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

The laboratory notes two samples, *PW-002* and *PW-102* were yellow in color prior to extraction and light brown after extraction.

The laboratory also notes there was not sufficient sample volume to perform MS/MSD analysis for preparation batch 320-471713.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Data quality and/or usability may be affected.

Laboratory Report Date:

4/21/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

Soil samples are not included in this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

Analytical sensitivity was evaluated to verify that RLs met the applicable DEC action level for non-detected results, as appropriate. All RLs for non-detect results met applicable action levels.

e. Data quality or usability affected?

Data quality and/or usability are not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

Laboratory Report Date:

4/21/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No samples are affected; method blank results are below the LOQ (all non-detect).

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Flags are not required; see above.

v. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:



Laboratory Report Date:

4/21/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No samples are affected. Accuracy and precision for the LCS/LCSD samples are within laboratory limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Flags are not required; see above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and/or usability are not affected.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

No MS/MSD samples were reported with this work order. See the LCS/LCSD section for accuracy and precision information.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

No metal or inorganic analyses were requested as a part of this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

No MS/MSD samples were reported with this work order.

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4/21/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

No MS/MSD samples were reported with this work order.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Not applicable, no MS/MSD samples were reported with this work order.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

No MS/MSD samples were reported with this work order.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and/or usability are not affected.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

No samples had failed IDA recoveries.

Laboratory Report Date:

4/21/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

iv. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?  
(If not, enter explanation below.)

Yes  No  N/A  Comments:

Volatile analyses were not requested as a part of this work order.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?  
(If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

Volatile analyses were not requested as a part of this work order.

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Volatile analyses were not requested as a part of this work order.

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

Not applicable; volatile analyses were not requested as a part of this work order.

v. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

Laboratory Report Date:

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ii. Submitted blind to lab?

Yes  No  N/A  Comments:

Sample PW-102 is a field duplicate for sample PW-002.

iii. Precision – All relative percent differences (RPD) less than specified project objectives?  
(Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R<sub>1</sub> = Sample Concentration  
R<sub>2</sub> = Field Duplicate Concentration

Yes  No  N/A  Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and/or usability are not affected.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Samples were collected with non-reusable equipment. An equipment blank is not required.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

See above.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Not applicable; see above.

iii. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

320-71353-1 Revision 1

Laboratory Report Date:

4/21/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A

Comments:

No other flags are needed.

## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-71360-1  
Client Project/Site: Cordova SREB

For:  
Shannon & Wilson, Inc  
2355 Hill Rd.  
Fairbanks, Alaska 99709-5244

Attn: Valerie Webb



---

Authorized for release by:  
4/1/2021 8:34:21 AM

David Alltucker, Project Manager I  
(916)374-4383  
[David.Alltucker@Eurofinset.com](mailto:David.Alltucker@Eurofinset.com)

### LINKS

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results through  
**TotalAccess**

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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count



# Case Narrative

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Job ID: 320-71360-1**

**Laboratory: Eurofins TestAmerica, Sacramento**

## Narrative

### Job Narrative 320-71360-1

#### Receipt

The samples were received on 3/17/2021 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0° C.

#### LCMS

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte(s) was/ were outside of the established ratio limit(s). The qualitative identification of the analyte(s) has/ have some degree of uncertainty, and the reported value(s) may have some high bias. However, analyst judgment was used to positively identify the analytes. SBMW4-1 (320-71360-8), SBTWP5-102 (320-71360-12), SBMW4-101 (320-71360-17) and SB9-1 (320-71360-18), SB16-2 (320-71360-34), SB17-1 (320-71360-35), SBIW19-1 (320-71360-42), (320-71360-A-42-B MS) and (320-71360-A-42-C MSD), (CCVL 320-473543/2)

Method EPA 537(Mod): Due to the high concentration of Perfluorooctanesulfonic acid (PFOS), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-471686 and analytical batch 320-474422 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method EPA 537(Mod): The matrix spike (MS) recoveries for Perfluorohexanesulfonic acid (PFHxS) and DONA of preparation batch 320-471686 and analytical batch 320-473142 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method EPA 537(Mod): The matrix spike duplicate (MSD) recoveries for DONA of preparation batch 320-471686 and analytical batch 320-473142 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method EPA 537(Mod): The matrix spike / matrix spike duplicate (MS/MSD) recoveries and/or precision for preparation batch 320-471897 and analytical batch 320-472276 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method EPA 537(Mod): The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: SBIW20-1 (320-71360-39), SBIW20-101 (320-71360-40), SBIW19-1 (320-71360-42), (320-71360-A-42-B MS) and (320-71360-A-42-C MSD). These analytes have been qualified; however, the peaks did saturate the instrument detector. This likely due to sample matrix interference. There was very high target recoveries for several analytes in the samples. The samples were not re-run at a lower dilution. The client was contacted and the data was reported with narration.

Method EPA 537(Mod): Results for samples SBTWP5-1 (320-71360-10), (320-71360-A-10-B MS) and (320-71360-A-10-C MSD) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method EPA 537(Mod): Results for sample SBTWP5-102 (320-71360-12) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method EPA 537(Mod): Results for samples SB15-1 (320-71360-31) and SB15-2 (320-71360-32) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method EPA 537(Mod): Results for samples SBIW20-2 (320-71360-41) and SBIW19-2 (320-71360-43) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method EPA 537(Mod): Several Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: SB15-2 (320-71360-32). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater

# Case Narrative

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

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## Job ID: 320-71360-1 (Continued)

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### Laboratory: Eurofins TestAmerica, Sacramento (Continued)

than 10:1, which is achieved for all IDA in the sample(s).

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for several analytes: SBIW20-1 (320-71360-39), SBIW20-101 (320-71360-40), SBIW19-1 (320-71360-42), (320-71360-A-42-B MS) and (320-71360-A-42-C MSD). This is due to sample matrix interference. There was very high target recovery for Perfluorooctanesulfonic Acid, so the samples were not re-run at a lower dilution. The client was contacted and the data was reported with narration.

Method EPA 537(Mod): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes in the following samples: SBIW19-1 (320-71360-42), (320-71360-A-42-B MS) and (320-71360-A-42-C MSD). Since the high recovery is due to matrix interferences, the analytes associated with this IDA may have a low bias. The samples were not re-run at a lower dilution. The client was contacted and the data was reported with narration.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit in 13C2 PFTeDA: SBIW19-2 (320-71360-43). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method EPA 537(Mod): Internal standard (ISTD) response for 13C2 PFOA for the following samples was outside acceptance criteria: SBIW20-101 (320-71360-40), SBIW19-1 (320-71360-42), (320-71360-A-42-B MS) and (320-71360-A-42-C MSD). This anomaly is due to sample matrix interference. There was very high target recovery for Perfluorooctanesulfonic Acid, so the samples were not re-run at a lower dilution. The client was contacted and the data was reported with narration.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SBMW1-1

## Lab Sample ID: 320-71360-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.32	J	0.51	0.20	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SBMW1-2

## Lab Sample ID: 320-71360-2

No Detections.

## Client Sample ID: SBMW2-1

## Lab Sample ID: 320-71360-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorodecanoic acid (PFDA)	0.078	J	0.22	0.025	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.13	J	0.22	0.040	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.039	J	0.22	0.035	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2		0.56	0.22	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SBMW2-2

## Lab Sample ID: 320-71360-4

No Detections.

## Client Sample ID: SBMW3-1

## Lab Sample ID: 320-71360-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.051	J	0.25	0.045	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.26		0.25	0.027	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.067	J	0.25	0.039	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.0		0.62	0.25	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SBMW3-101

## Lab Sample ID: 320-71360-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.065	J	0.21	0.039	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.41		0.21	0.024	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.053	J	0.21	0.033	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		0.54	0.21	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SBMW3-2

## Lab Sample ID: 320-71360-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.042	J	0.19	0.040	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.17	J	0.19	0.081	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.38	J	0.47	0.19	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SBMW4-1

## Lab Sample ID: 320-71360-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.065	J	0.23	0.041	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.48	J I	0.57	0.23	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SBMW4-2

## Lab Sample ID: 320-71360-9

No Detections.

## Client Sample ID: SBTWP5-1

## Lab Sample ID: 320-71360-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.13	J	0.20	0.042	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.035	J	0.20	0.029	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SBTWP5-1 (Continued)

## Lab Sample ID: 320-71360-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.12	J	0.20	0.086	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.042	J	0.20	0.036	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.059	J	0.20	0.022	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.081	J	0.20	0.025	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.70	F1	0.20	0.031	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	15		2.5	1.0	ug/Kg	5	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: SBTWP5-2

## Lab Sample ID: 320-71360-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.13	J	0.21	0.044	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.065	J	0.21	0.031	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.44		0.21	0.091	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.14	J	0.21	0.038	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.38		0.21	0.033	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	17		0.53	0.21	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: SBTWP5-102

## Lab Sample ID: 320-71360-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.092	J I	0.22	0.046	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.053	J	0.22	0.032	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.33		0.22	0.094	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.088	J	0.22	0.039	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.39		0.22	0.034	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	51		5.5	2.2	ug/Kg	10	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: SBTWP6-1

## Lab Sample ID: 320-71360-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.12	J	0.21	0.043	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.045	J	0.21	0.037	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.049	J	0.21	0.023	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.16	J	0.21	0.037	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.43		0.21	0.032	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.8		0.51	0.21	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: SBTWP6-101

## Lab Sample ID: 320-71360-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.12	J	0.21	0.044	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.075	J	0.21	0.038	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.19	J	0.21	0.038	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.032	J	0.21	0.026	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.53		0.21	0.033	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.9		0.52	0.21	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: SBTWP7-1

## Lab Sample ID: 320-71360-15

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SBTWP7-2

Lab Sample ID: 320-71360-16

No Detections.

## Client Sample ID: SBMW4-101

Lab Sample ID: 320-71360-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.32	J I	0.54	0.22	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB9-1

Lab Sample ID: 320-71360-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.33	J I	0.51	0.20	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB9-2

Lab Sample ID: 320-71360-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.063	J	0.21	0.038	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SBTWP6-2

Lab Sample ID: 320-71360-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.058	J	0.20	0.043	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.046	J	0.20	0.030	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.46		0.20	0.088	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		0.20	0.032	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	9.7		0.51	0.20	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB10-1

Lab Sample ID: 320-71360-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.12	J	0.20	0.031	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.3		0.50	0.20	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB10-2

Lab Sample ID: 320-71360-22

No Detections.

## Client Sample ID: SB11-1

Lab Sample ID: 320-71360-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.042	J	0.20	0.031	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.1		0.50	0.20	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB11-2

Lab Sample ID: 320-71360-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.24	J	0.50	0.20	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB12-1

Lab Sample ID: 320-71360-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.042	J	0.23	0.036	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.3		0.58	0.23	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB12-2

Lab Sample ID: 320-71360-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.23	J	0.52	0.21	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SB13-1

## Lab Sample ID: 320-71360-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.044	J	0.22	0.034	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.75		0.56	0.22	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB13-2

## Lab Sample ID: 320-71360-28

No Detections.

## Client Sample ID: SB14-1

## Lab Sample ID: 320-71360-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.037	J	0.21	0.033	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.55		0.53	0.21	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB14-2

## Lab Sample ID: 320-71360-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.059	J	0.23	0.036	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.46	J	0.57	0.23	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB15-1

## Lab Sample ID: 320-71360-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.055	J	0.21	0.044	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.36		0.21	0.037	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.16	J	0.21	0.023	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.056	J	0.21	0.037	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.25		0.21	0.032	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	24		5.2	2.1	ug/Kg	10	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB15-2

## Lab Sample ID: 320-71360-32

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.050	J	0.21	0.043	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.66		0.21	0.037	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.26		0.21	0.069	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.12	J	0.21	0.052	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.059	J	0.21	0.055	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.032	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	150		5.1	2.1	ug/Kg	10	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB16-1

## Lab Sample ID: 320-71360-33

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorodecanoic acid (PFDA)	0.082	J	0.21	0.023	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.083	J	0.21	0.037	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.071	J	0.21	0.069	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.057	J	0.21	0.053	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.20	J	0.21	0.032	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.1		0.52	0.21	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SB16-2

## Lab Sample ID: 320-71360-34

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.050	J I	0.21	0.044	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.056	J	0.21	0.023	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.22		0.21	0.032	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		0.52	0.21	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB17-1

## Lab Sample ID: 320-71360-35

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.054	J I	0.20	0.043	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.053	J	0.20	0.037	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.14	J	0.20	0.022	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.67		0.20	0.037	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.13	J	0.20	0.052	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.13	J	0.20	0.032	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.4		0.51	0.20	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB17-2

## Lab Sample ID: 320-71360-36

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA) - RA	0.074	J	0.19	0.035	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA) - RA	0.082	J	0.19	0.021	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA) - RA	0.038	J	0.19	0.035	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - RA	0.22		0.19	0.030	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - RA	8.7		0.48	0.19	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB18-1

## Lab Sample ID: 320-71360-37

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) - RA	0.18	J	0.26	0.11	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: SB18-2

## Lab Sample ID: 320-71360-38

No Detections.

## Client Sample ID: SBIW20-1

## Lab Sample ID: 320-71360-39

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.2		0.23	0.047	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.37		0.23	0.033	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	4.3		0.23	0.097	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.64		0.23	0.041	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	8.2		0.23	0.025	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	19		0.23	0.041	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	9.3		0.23	0.075	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	4.0		0.23	0.061	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.74		0.23	0.028	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.9		0.23	0.035	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2600	E	0.56	0.23	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	6.6		2.3	0.44	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SBIW20-1 (Continued)

## Lab Sample ID: 320-71360-39

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	6.4		2.3	0.42	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: SBIW20-101

## Lab Sample ID: 320-71360-40

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.2		0.23	0.049	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.68		0.23	0.034	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	7.3		0.23	0.10	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	2.0		0.23	0.042	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	30	E	0.23	0.026	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	51	E	0.23	0.042	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	31	E	0.23	0.078	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	16		0.23	0.059	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	14		0.23	0.063	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.99		0.23	0.029	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	14		0.23	0.036	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5000	E	0.58	0.23	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17		2.3	0.45	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	15		2.3	0.43	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: SBIW20-2

## Lab Sample ID: 320-71360-41

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.057	J	0.21	0.057	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	120		5.2	2.1	ug/Kg	10	☒	EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA) - RA	0.72		0.21	0.044	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA) - RA	0.076	J	0.21	0.030	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA) - RA	0.55		0.21	0.090	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA) - RA	0.042	J	0.21	0.038	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA) - RA	0.14	J	0.21	0.023	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA) - RA	0.10	J	0.21	0.038	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RA	0.27		0.21	0.026	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - RA	1.3		0.21	0.032	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: SBIW19-1

## Lab Sample ID: 320-71360-42

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	730	E	0.21	0.044	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	170	E	0.21	0.030	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1500	E	0.21	0.090	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	43	E	0.21	0.038	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	120	E	0.21	0.023	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	17		0.21	0.038	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	32	E	0.21	0.070	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	5.9		0.21	0.054	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	24	E	0.21	0.057	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	180	E	0.21	0.026	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento



# Detection Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SBIW19-1 (Continued)

## Lab Sample ID: 320-71360-42

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3100	E	0.21	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	11000	E I	0.52	0.21	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.0		2.1	0.41	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	12	F2	2.1	0.39	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

## Client Sample ID: SBIW19-2

## Lab Sample ID: 320-71360-43

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.67		0.20	0.054	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	170		5.0	2.0	ug/Kg	10	☼	EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA) - RA	1.8		0.20	0.042	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA) - RA	0.34		0.20	0.029	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA) - RA	1.5		0.20	0.086	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA) - RA	0.067	J	0.20	0.036	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA) - RA	0.13	J	0.20	0.022	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA) - RA	0.041	J	0.20	0.036	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA) - RA	0.32		0.20	0.067	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA) - RA	0.23		0.20	0.051	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RA	0.44		0.20	0.025	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - RA	7.2		0.20	0.031	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW1-1**

**Lab Sample ID: 320-71360-1**

**Date Collected: 03/11/21 14:15**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.0**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.043	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.030	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.088	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.037	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.037	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.068	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.052	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.032	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.32</b>	<b>J</b>	0.51	0.20	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.40	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.38	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	✱	03/18/21 12:20	03/22/21 20:00	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C4 PFHpA	82		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C4 PFOA	80		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C5 PFNA	78		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C2 PFDA	83		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C2 PFUnA	81		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C2 PFDoA	82		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C2 PFTeDA	72		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C3 PFBS	67		50 - 150	03/18/21 12:20	03/22/21 20:00	1
18O2 PFHxS	73		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C4 PFOS	67		50 - 150	03/18/21 12:20	03/22/21 20:00	1
d3-NMeFOSAA	97		50 - 150	03/18/21 12:20	03/22/21 20:00	1
d5-NEtFOSAA	102		50 - 150	03/18/21 12:20	03/22/21 20:00	1
13C3 HFPO-DA	82		50 - 150	03/18/21 12:20	03/22/21 20:00	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>7.0</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>93.0</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW1-2**

**Lab Sample ID: 320-71360-2**

**Date Collected: 03/11/21 15:10**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 85.4**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.049	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.034	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.10	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.042	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.026	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.042	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.078	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.059	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.063	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.029	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.036	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.58	0.23	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.3	0.45	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.3	0.43	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.031	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.29	0.13	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.026	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.021	ug/Kg	✱	03/18/21 12:20	03/22/21 20:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	79		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C4 PFHpA	84		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C4 PFOA	71		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C5 PFNA	65		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C2 PFDA	65		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C2 PFUnA	74		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C2 PFDoA	80		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C2 PFTeDA	62		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C3 PFBS	70		50 - 150	03/18/21 12:20	03/22/21 20:09	1
18O2 PFHxS	73		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C4 PFOS	56		50 - 150	03/18/21 12:20	03/22/21 20:09	1
d3-NMeFOSAA	83		50 - 150	03/18/21 12:20	03/22/21 20:09	1
d5-NEtFOSAA	93		50 - 150	03/18/21 12:20	03/22/21 20:09	1
13C3 HFPO-DA	80		50 - 150	03/18/21 12:20	03/22/21 20:09	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.6		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	85.4		0.1	0.1	%			03/18/21 11:30	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW2-1**

**Lab Sample ID: 320-71360-3**

Date Collected: 03/12/21 12:37

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 87.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.047	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.096	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.040	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.078</b>	<b>J</b>	0.22	0.025	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.13</b>	<b>J</b>	0.22	0.040	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.075	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.057	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.061	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.028	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.039</b>	<b>J</b>	0.22	0.035	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>1.2</b>		0.56	0.22	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.44	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.41	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.030	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.12	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.025	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	☼	03/18/21 12:20	03/22/21 20:18	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	79		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C4 PFHpA	86		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C4 PFOA	80		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C5 PFNA	75		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C2 PFDA	72		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C2 PFUnA	84		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C2 PFDoA	94		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C2 PFTeDA	78		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C3 PFBS	74		50 - 150	03/18/21 12:20	03/22/21 20:18	1
18O2 PFHxS	81		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C4 PFOS	64		50 - 150	03/18/21 12:20	03/22/21 20:18	1
d3-NMeFOSAA	93		50 - 150	03/18/21 12:20	03/22/21 20:18	1
d5-NEtFOSAA	120		50 - 150	03/18/21 12:20	03/22/21 20:18	1
13C3 HFPO-DA	79		50 - 150	03/18/21 12:20	03/22/21 20:18	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>12.2</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>87.8</b>		0.1	0.1	%			03/18/21 11:30	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW2-2**

**Lab Sample ID: 320-71360-4**

Date Collected: 03/12/21 13:22

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 93.1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.043	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.030	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.088	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.037	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.037	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.068	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.052	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.032	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.51	0.20	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.40	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.38	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.028	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	✱	03/18/21 12:20	03/22/21 20:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	78		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C4 PFHpA	80		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C4 PFOA	79		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C5 PFNA	73		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C2 PFDA	70		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C2 PFUnA	62		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C2 PFDoA	70		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C2 PFTeDA	74		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C3 PFBS	66		50 - 150	03/18/21 12:20	03/22/21 20:28	1
18O2 PFHxS	72		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C4 PFOS	63		50 - 150	03/18/21 12:20	03/22/21 20:28	1
d3-NMeFOSAA	75		50 - 150	03/18/21 12:20	03/22/21 20:28	1
d5-NEtFOSAA	73		50 - 150	03/18/21 12:20	03/22/21 20:28	1
13C3 HFPO-DA	78		50 - 150	03/18/21 12:20	03/22/21 20:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.9		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	93.1		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW3-1**

**Lab Sample ID: 320-71360-5**

Date Collected: 03/11/21 10:02

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 80.3

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.052	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.036	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.11	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>0.051</b>	<b>J</b>	0.25	0.045	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.26</b>		0.25	0.027	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.045	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.083	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.063	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.067	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.031	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.067</b>	<b>J</b>	0.25	0.039	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.0</b>		0.62	0.25	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.5	0.49	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.5	0.46	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.034	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.31	0.14	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.027	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.022	ug/Kg	☼	03/18/21 12:20	03/22/21 20:37	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C4 PFHpA	83		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C4 PFOA	87		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C5 PFNA	77		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C2 PFDA	73		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C2 PFUnA	80		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C2 PFDoA	84		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C2 PFTeDA	69		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C3 PFBS	73		50 - 150	03/18/21 12:20	03/22/21 20:37	1
18O2 PFHxS	79		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C4 PFOS	68		50 - 150	03/18/21 12:20	03/22/21 20:37	1
d3-NMeFOSAA	92		50 - 150	03/18/21 12:20	03/22/21 20:37	1
d5-NEtFOSAA	103		50 - 150	03/18/21 12:20	03/22/21 20:37	1
13C3 HFPO-DA	78		50 - 150	03/18/21 12:20	03/22/21 20:37	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>19.7</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>80.3</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW3-101**

**Lab Sample ID: 320-71360-6**

Date Collected: 03/11/21 09:52

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 85.6

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.045	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.031	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.092	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>0.065</b>	<b>J</b>	0.21	0.039	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.41</b>		0.21	0.024	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.039	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.072	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.055	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.058	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.027	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.053</b>	<b>J</b>	0.21	0.033	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.3</b>		0.54	0.21	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.42	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.40	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.029	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.024	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 12:20	03/22/21 20:46	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	77		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C4 PFHpA	83		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C4 PFOA	78		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C5 PFNA	71		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C2 PFDA	71		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C2 PFUnA	74		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C2 PFDoA	77		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C2 PFTeDA	66		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C3 PFBS	71		50 - 150	03/18/21 12:20	03/22/21 20:46	1
18O2 PFHxS	77		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C4 PFOS	64		50 - 150	03/18/21 12:20	03/22/21 20:46	1
d3-NMeFOSAA	81		50 - 150	03/18/21 12:20	03/22/21 20:46	1
d5-NEtFOSAA	91		50 - 150	03/18/21 12:20	03/22/21 20:46	1
13C3 HFPO-DA	78		50 - 150	03/18/21 12:20	03/22/21 20:46	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>14.4</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>85.6</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW3-2**

**Lab Sample ID: 320-71360-7**

Date Collected: 03/11/21 11:05

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 95.5

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.042</b>	<b>J</b>	0.19	0.040	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Perfluoroheptanoic acid (PFHpA)	ND		0.19	0.027	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>0.17</b>	<b>J</b>	0.19	0.081	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Perfluorononanoic acid (PFNA)	ND		0.19	0.034	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Perfluorodecanoic acid (PFDA)	ND		0.19	0.021	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Perfluoroundecanoic acid (PFUnA)	ND		0.19	0.034	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Perfluorododecanoic acid (PFDoA)	ND		0.19	0.063	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Perfluorotridecanoic acid (PFTriA)	ND		0.19	0.048	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.19	0.051	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.19	0.024	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.19	0.029	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.38</b>	<b>J</b>	0.47	0.19	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.37	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.35	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.19	0.025	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.10	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.19	0.021	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.19	0.017	ug/Kg	☼	03/18/21 12:20	03/22/21 20:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	79		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C4 PFHpA	82		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C4 PFOA	77		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C5 PFNA	71		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C2 PFDA	62		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C2 PFUnA	61		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C2 PFDoA	66		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C2 PFTeDA	64		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C3 PFBS	70		50 - 150	03/18/21 12:20	03/22/21 20:56	1
18O2 PFHxS	72		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C4 PFOS	62		50 - 150	03/18/21 12:20	03/22/21 20:56	1
d3-NMeFOSAA	69		50 - 150	03/18/21 12:20	03/22/21 20:56	1
d5-NEtFOSAA	63		50 - 150	03/18/21 12:20	03/22/21 20:56	1
13C3 HFPO-DA	82		50 - 150	03/18/21 12:20	03/22/21 20:56	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>4.5</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>95.5</b>		0.1	0.1	%			03/18/21 11:30	1



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW4-1**

**Lab Sample ID: 320-71360-8**

**Date Collected: 03/13/21 10:40**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 83.9**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.048	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.033	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.098	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>0.065</b>	<b>J</b>	0.23	0.041	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.025	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.041	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.076	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.058	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.061	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.028	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.035	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.48</b>	<b>J I</b>	0.57	0.23	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.3	0.44	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.3	0.42	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.031	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.12	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.025	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.020	ug/Kg	☼	03/18/21 12:20	03/22/21 21:24	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C4 PFHpA	85		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C4 PFOA	78		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C5 PFNA	75		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C2 PFDA	71		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C2 PFUnA	72		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C2 PFDoA	78		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C2 PFTeDA	76		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C3 PFBS	85		50 - 150	03/18/21 12:20	03/22/21 21:24	1
18O2 PFHxS	74		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C4 PFOS	65		50 - 150	03/18/21 12:20	03/22/21 21:24	1
d3-NMeFOSAA	87		50 - 150	03/18/21 12:20	03/22/21 21:24	1
d5-NEtFOSAA	100		50 - 150	03/18/21 12:20	03/22/21 21:24	1
13C3 HFPO-DA	77		50 - 150	03/18/21 12:20	03/22/21 21:24	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>16.1</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>83.9</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW4-2**

**Lab Sample ID: 320-71360-9**

**Date Collected: 03/13/21 11:25**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 95.7**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.19	0.041	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluoroheptanoic acid (PFHpA)	ND		0.19	0.028	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluorooctanoic acid (PFOA)	ND		0.19	0.083	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluorononanoic acid (PFNA)	ND		0.19	0.035	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluorodecanoic acid (PFDA)	ND		0.19	0.021	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluoroundecanoic acid (PFUnA)	ND		0.19	0.035	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluorododecanoic acid (PFDoA)	ND		0.19	0.065	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluorotridecanoic acid (PFTriA)	ND		0.19	0.049	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.19	0.052	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.19	0.024	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.19	0.030	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.48	0.19	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.38	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.36	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.19	0.026	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.11	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.19	0.021	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.19	0.017	ug/Kg	✱	03/18/21 12:20	03/22/21 21:33	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	86		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C4 PFHpA	97		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C4 PFOA	90		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C5 PFNA	93		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C2 PFDA	93		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C2 PFUnA	74		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C2 PFDoA	75		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C2 PFTeDA	80		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C3 PFBS	79		50 - 150	03/18/21 12:20	03/22/21 21:33	1
18O2 PFHxS	92		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C4 PFOS	84		50 - 150	03/18/21 12:20	03/22/21 21:33	1
d3-NMeFOSAA	88		50 - 150	03/18/21 12:20	03/22/21 21:33	1
d5-NEtFOSAA	84		50 - 150	03/18/21 12:20	03/22/21 21:33	1
13C3 HFPO-DA	84		50 - 150	03/18/21 12:20	03/22/21 21:33	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.3		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	95.7		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP5-1**

**Lab Sample ID: 320-71360-10**

Date Collected: 03/12/21 10:30

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 93.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.13	J	0.20	0.042	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluoroheptanoic acid (PFHpA)	0.035	J	0.20	0.029	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluorooctanoic acid (PFOA)	0.12	J	0.20	0.086	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluorononanoic acid (PFNA)	0.042	J	0.20	0.036	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluorodecanoic acid (PFDA)	0.059	J	0.20	0.022	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluorobutanesulfonic acid (PFBS)	0.081	J	0.20	0.025	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Perfluorohexanesulfonic acid (PFHxS)	0.70	F1	0.20	0.031	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	F1	0.20	0.018	ug/Kg	☼	03/18/21 12:20	03/22/21 21:43	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C4 PFHpA	97		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C4 PFOA	92		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C5 PFNA	73		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C2 PFDA	71		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C2 PFUnA	64		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C2 PFDoA	66		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C2 PFTeDA	52		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C3 PFBS	75		50 - 150	03/18/21 12:20	03/22/21 21:43	1
18O2 PFHxS	83		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C4 PFOS	60		50 - 150	03/18/21 12:20	03/22/21 21:43	1
d3-NMeFOSAA	75		50 - 150	03/18/21 12:20	03/22/21 21:43	1
d5-NEtFOSAA	74		50 - 150	03/18/21 12:20	03/22/21 21:43	1
13C3 HFPO-DA	87		50 - 150	03/18/21 12:20	03/22/21 21:43	1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15		2.5	1.0	ug/Kg	☼	03/18/21 12:20	03/28/21 00:10	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	62		50 - 150	03/18/21 12:20	03/28/21 00:10	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.2		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	93.8		0.1	0.1	%			03/18/21 11:30	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP5-2**

**Lab Sample ID: 320-71360-11**

Date Collected: 03/12/21 10:45

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 88.9

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.13	J	0.21	0.044	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluoroheptanoic acid (PFHpA)	0.065	J	0.21	0.031	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluorooctanoic acid (PFOA)	0.44		0.21	0.091	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluorononanoic acid (PFNA)	0.14	J	0.21	0.038	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.038	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.071	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.054	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.057	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.38		0.21	0.033	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Perfluorooctanesulfonic acid (PFOS)	17		0.53	0.21	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.029	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.12	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 19:19	03/21/21 15:06	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C4 PFHpA	87		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C4 PFOA	80		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C5 PFNA	78		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C2 PFDA	68		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C2 PFUnA	85		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C2 PFDoA	78		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C2 PFTeDA	61		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C3 PFBS	72		50 - 150	03/18/21 19:19	03/21/21 15:06	1
18O2 PFHxS	72		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C4 PFOS	71		50 - 150	03/18/21 19:19	03/21/21 15:06	1
d3-NMeFOSAA	84		50 - 150	03/18/21 19:19	03/21/21 15:06	1
d5-NEtFOSAA	85		50 - 150	03/18/21 19:19	03/21/21 15:06	1
13C3 HFPO-DA	77		50 - 150	03/18/21 19:19	03/21/21 15:06	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.1		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	88.9		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP5-102**

**Lab Sample ID: 320-71360-12**

Date Collected: 03/12/21 10:35

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 87.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.092	J I	0.22	0.046	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluoroheptanoic acid (PFHpA)	0.053	J	0.22	0.032	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluorooctanoic acid (PFOA)	0.33		0.22	0.094	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluorononanoic acid (PFNA)	0.088	J	0.22	0.039	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.039	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.073	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.056	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.059	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Perfluorohexanesulfonic acid (PFHxS)	0.39		0.22	0.034	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.43	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.40	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.029	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.024	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	☼	03/18/21 19:19	03/21/21 15:15	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C4 PFHpA	82		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C4 PFOA	79		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C5 PFNA	75		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C2 PFDA	73		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C2 PFUnA	82		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C2 PFDoA	83		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C2 PFTeDA	65		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C3 PFBS	65		50 - 150	03/18/21 19:19	03/21/21 15:15	1
18O2 PFHxS	67		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C4 PFOS	66		50 - 150	03/18/21 19:19	03/21/21 15:15	1
d3-NMeFOSAA	89		50 - 150	03/18/21 19:19	03/21/21 15:15	1
d5-NEtFOSAA	90		50 - 150	03/18/21 19:19	03/21/21 15:15	1
13C3 HFPO-DA	75		50 - 150	03/18/21 19:19	03/21/21 15:15	1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	51		5.5	2.2	ug/Kg	☼	03/18/21 19:19	03/25/21 19:01	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	73		50 - 150	03/18/21 19:19	03/25/21 19:01	10

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.2		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	87.8		0.1	0.1	%			03/18/21 11:30	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP6-1**

**Lab Sample ID: 320-71360-13**

Date Collected: 03/13/21 12:25

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 94.1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.12</b>	<b>J</b>	0.21	0.043	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.088	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>0.045</b>	<b>J</b>	0.21	0.037	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.049</b>	<b>J</b>	0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.16</b>	<b>J</b>	0.21	0.037	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.069	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.052	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.055	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.43</b>		0.21	0.032	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>7.8</b>		0.51	0.21	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.40	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.018	ug/Kg	☼	03/18/21 19:19	03/21/21 15:24	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	77		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C4 PFHpA	81		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C4 PFOA	76		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C5 PFNA	80		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C2 PFDA	84		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C2 PFUnA	91		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C2 PFDoA	89		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C2 PFTeDA	68		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C3 PFBS	60		50 - 150	03/18/21 19:19	03/21/21 15:24	1
18O2 PFHxS	62		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C4 PFOS	61		50 - 150	03/18/21 19:19	03/21/21 15:24	1
d3-NMeFOSAA	105		50 - 150	03/18/21 19:19	03/21/21 15:24	1
d5-NEtFOSAA	109		50 - 150	03/18/21 19:19	03/21/21 15:24	1
13C3 HFPO-DA	73		50 - 150	03/18/21 19:19	03/21/21 15:24	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>5.9</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>94.1</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP6-101**

**Lab Sample ID: 320-71360-14**

Date Collected: 03/13/21 12:15

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 93.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.12</b>	<b>J</b>	0.21	0.044	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.090	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>0.075</b>	<b>J</b>	0.21	0.038	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.19</b>	<b>J</b>	0.21	0.038	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.070	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.054	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.057	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>0.032</b>	<b>J</b>	0.21	0.026	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.53</b>		0.21	0.033	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>8.9</b>		0.52	0.21	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.12	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 19:19	03/21/21 18:13	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C4 PFHpA	86		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C4 PFOA	83		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C5 PFNA	81		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C2 PFDA	78		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C2 PFUnA	76		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C2 PFDoA	88		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C2 PFTeDA	69		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C3 PFBS	64		50 - 150	03/18/21 19:19	03/21/21 18:13	1
18O2 PFHxS	62		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C4 PFOS	64		50 - 150	03/18/21 19:19	03/21/21 18:13	1
d3-NMeFOSAA	114		50 - 150	03/18/21 19:19	03/21/21 18:13	1
d5-NEtFOSAA	107		50 - 150	03/18/21 19:19	03/21/21 18:13	1
13C3 HFPO-DA	78		50 - 150	03/18/21 19:19	03/21/21 18:13	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>6.2</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>93.8</b>		0.1	0.1	%			03/18/21 11:30	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP7-1**

**Lab Sample ID: 320-71360-15**

Date Collected: 03/13/21 09:15

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 93.0

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.045	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.031	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.091	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.038	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.038	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.071	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.054	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.057	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.027	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.033	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.53	0.21	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.029	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 19:19	03/21/21 15:34	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C4 PFHpA	92		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C4 PFOA	80		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C5 PFNA	86		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C2 PFDA	80		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C2 PFUnA	78		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C2 PFDoA	87		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C2 PFTeDA	69		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C3 PFBS	64		50 - 150	03/18/21 19:19	03/21/21 15:34	1
18O2 PFHxS	71		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C4 PFOS	73		50 - 150	03/18/21 19:19	03/21/21 15:34	1
d3-NMeFOSAA	94		50 - 150	03/18/21 19:19	03/21/21 15:34	1
d5-NEtFOSAA	93		50 - 150	03/18/21 19:19	03/21/21 15:34	1
13C3 HFPO-DA	80		50 - 150	03/18/21 19:19	03/21/21 15:34	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.0		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	93.0		0.1	0.1	%			03/18/21 11:30	1



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP7-2**

**Lab Sample ID: 320-71360-16**

**Date Collected: 03/13/21 10:00**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 94.6**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.043	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.030	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.088	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.037	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.037	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.068	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.052	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.032	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.51	0.20	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.40	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.38	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.028	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	03/18/21 19:19	03/21/21 15:43	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	72		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C4 PFHpA	82		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C4 PFOA	82		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C5 PFNA	77		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C2 PFDA	75		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C2 PFUnA	80		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C2 PFDoA	85		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C2 PFTeDA	73		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C3 PFBS	62		50 - 150	03/18/21 19:19	03/21/21 15:43	1
18O2 PFHxS	72		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C4 PFOS	69		50 - 150	03/18/21 19:19	03/21/21 15:43	1
d3-NMeFOSAA	94		50 - 150	03/18/21 19:19	03/21/21 15:43	1
d5-NEtFOSAA	85		50 - 150	03/18/21 19:19	03/21/21 15:43	1
13C3 HFPO-DA	83		50 - 150	03/18/21 19:19	03/21/21 15:43	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.4		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	94.6		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW4-101**

**Lab Sample ID: 320-71360-17**

**Date Collected: 03/13/21 10:30**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 87.6**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.045	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.031	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.093	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.039	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.039	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.072	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.055	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.058	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.033	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.32</b>	<b>J I</b>	0.54	0.22	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.42	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.40	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.029	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.024	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.019	ug/Kg	✱	03/18/21 19:19	03/21/21 15:53	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C4 PFHpA	84		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C4 PFOA	72		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C5 PFNA	89		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C2 PFDA	77		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C2 PFUnA	83		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C2 PFDoA	80		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C2 PFTeDA	70		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C3 PFBS	73		50 - 150	03/18/21 19:19	03/21/21 15:53	1
18O2 PFHxS	72		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C4 PFOS	68		50 - 150	03/18/21 19:19	03/21/21 15:53	1
d3-NMeFOSAA	93		50 - 150	03/18/21 19:19	03/21/21 15:53	1
d5-NEtFOSAA	106		50 - 150	03/18/21 19:19	03/21/21 15:53	1
13C3 HFPO-DA	75		50 - 150	03/18/21 19:19	03/21/21 15:53	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>12.4</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>87.6</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB9-1**  
**Date Collected: 03/11/21 16:20**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-18**  
**Matrix: Solid**  
**Percent Solids: 91.2**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.043	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.030	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.088	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.037	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.023	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.037	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.069	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.052	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.026	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.032	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.33</b>	<b>J I</b>	0.51	0.20	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.40	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.38	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.028	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.023	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	✱	03/18/21 19:19	03/21/21 16:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C4 PFHpA	88		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C4 PFOA	84		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C5 PFNA	86		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C2 PFDA	76		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C2 PFUnA	94		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C2 PFDoA	94		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C2 PFTeDA	72		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C3 PFBS	71		50 - 150	03/18/21 19:19	03/21/21 16:02	1
18O2 PFHxS	76		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C4 PFOS	79		50 - 150	03/18/21 19:19	03/21/21 16:02	1
d3-NMeFOSAA	98		50 - 150	03/18/21 19:19	03/21/21 16:02	1
d5-NEtFOSAA	107		50 - 150	03/18/21 19:19	03/21/21 16:02	1
13C3 HFPO-DA	81		50 - 150	03/18/21 19:19	03/21/21 16:02	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>8.8</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>91.2</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB9-2**  
**Date Collected: 03/11/21 16:48**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-19**  
**Matrix: Solid**  
**Percent Solids: 91.7**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.044	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.031	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.091	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>0.063</b>	<b>J</b>	0.21	0.038	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.038	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.071	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.054	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.057	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.033	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.53	0.21	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.12	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 19:19	03/21/21 16:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	78		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C4 PFHpA	80		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C4 PFOA	79		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C5 PFNA	79		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C2 PFDA	70		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C2 PFUnA	81		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C2 PFDoA	81		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C2 PFTeDA	79		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C3 PFBS	64		50 - 150	03/18/21 19:19	03/21/21 16:11	1
18O2 PFHxS	70		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C4 PFOS	70		50 - 150	03/18/21 19:19	03/21/21 16:11	1
d3-NMeFOSAA	82		50 - 150	03/18/21 19:19	03/21/21 16:11	1
d5-NEtFOSAA	82		50 - 150	03/18/21 19:19	03/21/21 16:11	1
13C3 HFPO-DA	73		50 - 150	03/18/21 19:19	03/21/21 16:11	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>8.3</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>91.7</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP6-2**

**Lab Sample ID: 320-71360-20**

Date Collected: 03/13/21 12:45

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 94.3

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.058	J	0.20	0.043	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluoroheptanoic acid (PFHpA)	0.046	J	0.20	0.030	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluorooctanoic acid (PFOA)	0.46		0.20	0.088	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.037	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.037	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.069	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.052	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.026	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		0.20	0.032	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Perfluorooctanesulfonic acid (PFOS)	9.7		0.51	0.20	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		2.0	0.40	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		2.0	0.38	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.028	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.023	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	03/18/21 19:19	03/21/21 16:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C4 PFHpA	86		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C4 PFOA	81		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C5 PFNA	84		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C2 PFDA	77		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C2 PFUnA	80		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C2 PFDoA	81		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C2 PFTeDA	82		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C3 PFBS	76		50 - 150	03/18/21 19:19	03/21/21 16:30	1
18O2 PFHxS	74		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C4 PFOS	76		50 - 150	03/18/21 19:19	03/21/21 16:30	1
d3-NMeFOSAA	90		50 - 150	03/18/21 19:19	03/21/21 16:30	1
d5-NEtFOSAA	88		50 - 150	03/18/21 19:19	03/21/21 16:30	1
13C3 HFPO-DA	78		50 - 150	03/18/21 19:19	03/21/21 16:30	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.7		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	94.3		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB10-1**

**Lab Sample ID: 320-71360-21**

**Date Collected: 03/10/21 17:00**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.9**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.085	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.12</b>	<b>J</b>	0.20	0.031	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>4.3</b>		0.50	0.20	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	03/18/21 19:19	03/21/21 16:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C4 PFHpA	89		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C4 PFOA	78		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C5 PFNA	78		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C2 PFDA	74		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C2 PFUnA	74		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C2 PFDoA	74		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C2 PFTeDA	66		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C3 PFBS	63		50 - 150	03/18/21 19:19	03/21/21 16:39	1
18O2 PFHxS	63		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C4 PFOS	69		50 - 150	03/18/21 19:19	03/21/21 16:39	1
d3-NMeFOSAA	81		50 - 150	03/18/21 19:19	03/21/21 16:39	1
d5-NEtFOSAA	88		50 - 150	03/18/21 19:19	03/21/21 16:39	1
13C3 HFPO-DA	74		50 - 150	03/18/21 19:19	03/21/21 16:39	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>6.1</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>93.9</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB10-2**

**Lab Sample ID: 320-71360-22**

**Date Collected: 03/10/21 17:50**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 95.1**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.19	0.040	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluoroheptanoic acid (PFHpA)	ND		0.19	0.028	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluorooctanoic acid (PFOA)	ND		0.19	0.083	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluorononanoic acid (PFNA)	ND		0.19	0.035	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluorodecanoic acid (PFDA)	ND		0.19	0.021	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluoroundecanoic acid (PFUnA)	ND		0.19	0.035	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluorododecanoic acid (PFDoA)	ND		0.19	0.064	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluorotridecanoic acid (PFTriA)	ND		0.19	0.049	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.19	0.052	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.19	0.024	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.19	0.030	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.48	0.19	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.37	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.36	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.19	0.026	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.11	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.19	0.021	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.19	0.017	ug/Kg	✱	03/18/21 19:19	03/21/21 16:49	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C4 PFHpA	83		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C4 PFOA	81		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C5 PFNA	87		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C2 PFDA	81		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C2 PFUnA	87		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C2 PFDoA	79		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C2 PFTeDA	71		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C3 PFBS	69		50 - 150	03/18/21 19:19	03/21/21 16:49	1
18O2 PFHxS	73		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C4 PFOS	74		50 - 150	03/18/21 19:19	03/21/21 16:49	1
d3-NMeFOSAA	92		50 - 150	03/18/21 19:19	03/21/21 16:49	1
d5-NEtFOSAA	86		50 - 150	03/18/21 19:19	03/21/21 16:49	1
13C3 HFPO-DA	83		50 - 150	03/18/21 19:19	03/21/21 16:49	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.9		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	95.1		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB11-1**

**Lab Sample ID: 320-71360-23**

**Date Collected: 03/12/21 17:30**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.9**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.085	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.066	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.042</b>	<b>J</b>	0.20	0.031	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>1.1</b>		0.50	0.20	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	03/18/21 19:19	03/21/21 16:58	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	75		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C4 PFHpA	76		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C4 PFOA	74		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C5 PFNA	76		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C2 PFDA	73		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C2 PFUnA	78		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C2 PFDoA	82		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C2 PFTeDA	73		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C3 PFBS	59		50 - 150	03/18/21 19:19	03/21/21 16:58	1
18O2 PFHxS	65		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C4 PFOS	63		50 - 150	03/18/21 19:19	03/21/21 16:58	1
d3-NMeFOSAA	90		50 - 150	03/18/21 19:19	03/21/21 16:58	1
d5-NEtFOSAA	92		50 - 150	03/18/21 19:19	03/21/21 16:58	1
13C3 HFPO-DA	69		50 - 150	03/18/21 19:19	03/21/21 16:58	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>6.1</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>93.9</b>		0.1	0.1	%			03/18/21 11:30	1



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB11-2**

**Lab Sample ID: 320-71360-24**

**Date Collected: 03/12/21 17:51**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.2**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.087	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.24</b>	<b>J</b>	0.50	0.20	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	03/18/21 19:19	03/21/21 17:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	72		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C4 PFHpA	83		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C4 PFOA	79		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C5 PFNA	77		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C2 PFDA	79		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C2 PFUnA	74		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C2 PFDoA	76		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C2 PFTeDA	75		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C3 PFBS	64		50 - 150	03/18/21 19:19	03/21/21 17:08	1
18O2 PFHxS	63		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C4 PFOS	69		50 - 150	03/18/21 19:19	03/21/21 17:08	1
d3-NMeFOSAA	84		50 - 150	03/18/21 19:19	03/21/21 17:08	1
d5-NEtFOSAA	81		50 - 150	03/18/21 19:19	03/21/21 17:08	1
13C3 HFPO-DA	72		50 - 150	03/18/21 19:19	03/21/21 17:08	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>6.8</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>93.2</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB12-1**

**Lab Sample ID: 320-71360-25**

**Date Collected: 03/10/21 14:12**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 85.1**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.049	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.033	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.099	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.042	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.025	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.042	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.077	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.059	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.062	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.029	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.042</b>	<b>J</b>	0.23	0.036	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>1.3</b>		0.58	0.23	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		2.3	0.45	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		2.3	0.43	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.031	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.29	0.13	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.025	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.021	ug/Kg	☼	03/18/21 19:19	03/21/21 17:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C4 PFHpA	86		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C4 PFOA	82		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C5 PFNA	96		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C2 PFDA	78		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C2 PFUnA	85		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C2 PFDoA	90		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C2 PFTeDA	83		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C3 PFBS	74		50 - 150	03/18/21 19:19	03/21/21 17:17	1
18O2 PFHxS	76		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C4 PFOS	78		50 - 150	03/18/21 19:19	03/21/21 17:17	1
d3-NMeFOSAA	96		50 - 150	03/18/21 19:19	03/21/21 17:17	1
d5-NEtFOSAA	102		50 - 150	03/18/21 19:19	03/21/21 17:17	1
13C3 HFPO-DA	84		50 - 150	03/18/21 19:19	03/21/21 17:17	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>14.9</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>85.1</b>		0.1	0.1	%			03/18/21 11:30	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB12-2**

**Lab Sample ID: 320-71360-26**

**Date Collected: 03/10/21 14:55**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.9**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.043	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.089	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.037	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.037	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.069	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.053	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.056	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.032	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.23</b>	<b>J</b>	0.52	0.21	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.40	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	✱	03/18/21 19:19	03/21/21 17:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	77		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C4 PFHpA	83		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C4 PFOA	78		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C5 PFNA	75		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C2 PFDA	71		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C2 PFUnA	80		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C2 PFDoA	86		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C2 PFTeDA	72		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C3 PFBS	62		50 - 150	03/18/21 19:19	03/21/21 17:26	1
18O2 PFHxS	68		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C4 PFOS	70		50 - 150	03/18/21 19:19	03/21/21 17:26	1
d3-NMeFOSAA	88		50 - 150	03/18/21 19:19	03/21/21 17:26	1
d5-NEtFOSAA	82		50 - 150	03/18/21 19:19	03/21/21 17:26	1
13C3 HFPO-DA	76		50 - 150	03/18/21 19:19	03/21/21 17:26	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>6.1</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>93.9</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB13-1**

**Lab Sample ID: 320-71360-27**

**Date Collected: 03/10/21 15:37**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 89.3**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.047	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.096	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.040	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.040	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.074	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.057	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.060	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.028	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.044</b>	<b>J</b>	0.22	0.034	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.75</b>		0.56	0.22	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		2.2	0.43	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		2.2	0.41	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.030	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.12	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.024	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	✱	03/18/21 19:24	03/20/21 08:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	74		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C4 PFHpA	78		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C4 PFOA	74		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C5 PFNA	74		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C2 PFDA	74		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C2 PFUnA	83		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C2 PFDoA	85		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C2 PFTeDA	74		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C3 PFBS	67		50 - 150	03/18/21 19:24	03/20/21 08:25	1
18O2 PFHxS	65		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C4 PFOS	66		50 - 150	03/18/21 19:24	03/20/21 08:25	1
d3-NMeFOSAA	99		50 - 150	03/18/21 19:24	03/20/21 08:25	1
d5-NEtFOSAA	100		50 - 150	03/18/21 19:24	03/20/21 08:25	1
13C3 HFPO-DA	78		50 - 150	03/18/21 19:24	03/20/21 08:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>10.7</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>89.3</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB13-2**

**Lab Sample ID: 320-71360-28**

**Date Collected: 03/10/21 16:15**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 96.0**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.044	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.089	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.037	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.037	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.070	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.053	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.056	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.032	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.52	0.21	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 19:24	03/20/21 08:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	73		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C4 PFHpA	74		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C4 PFOA	74		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C5 PFNA	74		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C2 PFDA	72		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C2 PFUnA	78		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C2 PFDoA	73		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C2 PFTeDA	65		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C3 PFBS	64		50 - 150	03/18/21 19:24	03/20/21 08:35	1
18O2 PFHxS	67		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C4 PFOS	62		50 - 150	03/18/21 19:24	03/20/21 08:35	1
d3-NMeFOSAA	79		50 - 150	03/18/21 19:24	03/20/21 08:35	1
d5-NEtFOSAA	84		50 - 150	03/18/21 19:24	03/20/21 08:35	1
13C3 HFPO-DA	75		50 - 150	03/18/21 19:24	03/20/21 08:35	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.0		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	96.0		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB14-1**

**Lab Sample ID: 320-71360-29**

**Date Collected: 03/12/21 09:18**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.3**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.044	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.031	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.091	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.038	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.038	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.071	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.054	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.057	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.037</b>	<b>J</b>	0.21	0.033	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.55</b>		0.53	0.21	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.12	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 19:24	03/20/21 08:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	73		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C4 PFHpA	75		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C4 PFOA	71		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C5 PFNA	77		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C2 PFDA	69		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C2 PFUnA	79		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C2 PFDoA	73		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C2 PFTeDA	70		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C3 PFBS	66		50 - 150	03/18/21 19:24	03/20/21 08:44	1
18O2 PFHxS	66		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C4 PFOS	69		50 - 150	03/18/21 19:24	03/20/21 08:44	1
d3-NMeFOSAA	80		50 - 150	03/18/21 19:24	03/20/21 08:44	1
d5-NEtFOSAA	95		50 - 150	03/18/21 19:24	03/20/21 08:44	1
13C3 HFPO-DA	77		50 - 150	03/18/21 19:24	03/20/21 08:44	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>6.7</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>93.3</b>		0.1	0.1	%			03/18/21 11:30	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB14-2**

**Lab Sample ID: 320-71360-30**

**Date Collected: 03/12/21 09:45**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 85.3**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.048	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.033	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.099	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.041	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.025	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.041	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.077	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.059	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.062	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.029	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.059</b>	<b>J</b>	0.23	0.036	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.46</b>	<b>J</b>	0.57	0.23	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		2.3	0.45	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		2.3	0.43	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.031	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.29	0.13	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.025	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.021	ug/Kg	☼	03/18/21 19:24	03/20/21 08:53	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	79		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C4 PFHpA	83		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C4 PFOA	83		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C5 PFNA	84		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C2 PFDA	87		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C2 PFUnA	87		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C2 PFDoA	87		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C2 PFTeDA	84		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C3 PFBS	70		50 - 150	03/18/21 19:24	03/20/21 08:53	1
18O2 PFHxS	74		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C4 PFOS	77		50 - 150	03/18/21 19:24	03/20/21 08:53	1
d3-NMeFOSAA	97		50 - 150	03/18/21 19:24	03/20/21 08:53	1
d5-NEtFOSAA	87		50 - 150	03/18/21 19:24	03/20/21 08:53	1
13C3 HFPO-DA	88		50 - 150	03/18/21 19:24	03/20/21 08:53	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>14.7</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>85.3</b>		0.1	0.1	%			03/18/21 11:30	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB15-1**

**Lab Sample ID: 320-71360-31**

**Date Collected: 03/11/21 12:15**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 95.7**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.055</b>	<b>J</b>	0.21	0.044	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.089	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>0.36</b>		0.21	0.037	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.16</b>	<b>J</b>	0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.056</b>	<b>J</b>	0.21	0.037	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.069	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.053	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.056	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.25</b>		0.21	0.032	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.40	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 19:24	03/20/21 09:03	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150	03/18/21 19:24	03/20/21 09:03	1
13C4 PFHpA	87		50 - 150	03/18/21 19:24	03/20/21 09:03	1
13C4 PFOA	77		50 - 150	03/18/21 19:24	03/20/21 09:03	1
13C5 PFNA	77		50 - 150	03/18/21 19:24	03/20/21 09:03	1
13C2 PFDA	76		50 - 150	03/18/21 19:24	03/20/21 09:03	1
13C2 PFUnA	87		50 - 150	03/18/21 19:24	03/20/21 09:03	1
13C2 PFDoA	85		50 - 150	03/18/21 19:24	03/20/21 09:03	1
13C2 PFTeDA	77		50 - 150	03/18/21 19:24	03/20/21 09:03	1
13C3 PFBS	71		50 - 150	03/18/21 19:24	03/20/21 09:03	1
18O2 PFHxS	69		50 - 150	03/18/21 19:24	03/20/21 09:03	1
d3-NMeFOSAA	91		50 - 150	03/18/21 19:24	03/20/21 09:03	1
d5-NEtFOSAA	89		50 - 150	03/18/21 19:24	03/20/21 09:03	1
13C3 HFPO-DA	82		50 - 150	03/18/21 19:24	03/20/21 09:03	1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>24</b>		5.2	2.1	ug/Kg	☼	03/18/21 19:24	03/29/21 11:40	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	72		50 - 150	03/18/21 19:24	03/29/21 11:40	10

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>4.3</b>		0.1	0.1	%			03/18/21 11:30	1
<b>Percent Solids</b>	<b>95.7</b>		0.1	0.1	%			03/18/21 11:30	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB15-2**

**Lab Sample ID: 320-71360-32**

**Date Collected: 03/11/21 13:05**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 95.4**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.050</b>	<b>J</b>	0.21	0.043	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.088	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.037	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.21</b>		0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.66</b>		0.21	0.037	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
<b>Perfluorododecanoic acid (PFDoA)</b>	<b>0.26</b>		0.21	0.069	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
<b>Perfluorotridecanoic acid (PFTriA)</b>	<b>0.12</b>	<b>J</b>	0.21	0.052	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
<b>Perfluorotetradecanoic acid (PFTeA)</b>	<b>0.059</b>	<b>J</b>	0.21	0.055	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.21</b>		0.21	0.032	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.40	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.018	ug/Kg	☼	03/18/21 19:24	03/20/21 09:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	39	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
13C4 PFHpA	44	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
13C4 PFOA	44	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
13C5 PFNA	39	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
13C2 PFDA	41	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
13C2 PFUnA	43	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
13C2 PFDoA	42	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
13C2 PFTeDA	37	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
13C3 PFBS	37	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
18O2 PFHxS	39	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
d3-NMeFOSAA	46	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
d5-NEtFOSAA	43	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1
13C3 HFPO-DA	42	*5-	50 - 150	03/18/21 19:24	03/20/21 09:12	1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>150</b>		5.1	2.1	ug/Kg	☼	03/18/21 19:24	03/29/21 11:50	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	37	*5-	50 - 150	03/18/21 19:24	03/29/21 11:50	10

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>4.6</b>		0.1	0.1	%			03/18/21 11:30	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB15-2**

**Date Collected: 03/11/21 13:05**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-32**

**Matrix: Solid**

**Percent Solids: 95.4**

**General Chemistry (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.4		0.1	0.1	%			03/18/21 11:30	1

**Client Sample ID: SB16-1**

**Date Collected: 03/12/21 15:00**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-33**

**Matrix: Solid**

**Percent Solids: 93.9**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.044	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.089	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.037	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.082</b>	<b>J</b>	0.21	0.023	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.083</b>	<b>J</b>	0.21	0.037	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
<b>Perfluorododecanoic acid (PFDoA)</b>	<b>0.071</b>	<b>J</b>	0.21	0.069	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
<b>Perfluorotridecanoic acid (PFTriA)</b>	<b>0.057</b>	<b>J</b>	0.21	0.053	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.056	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.20</b>	<b>J</b>	0.21	0.032	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.1</b>		0.52	0.21	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.40	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	✱	03/18/21 19:24	03/20/21 09:22	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C4 PFHpA	85		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C4 PFOA	84		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C5 PFNA	80		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C2 PFDA	77		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C2 PFUnA	83		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C2 PFDoA	96		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C2 PFTeDA	81		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C3 PFBS	73		50 - 150	03/18/21 19:24	03/20/21 09:22	1
18O2 PFHxS	69		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C4 PFOS	71		50 - 150	03/18/21 19:24	03/20/21 09:22	1
d3-NMeFOSAA	91		50 - 150	03/18/21 19:24	03/20/21 09:22	1
d5-NEtFOSAA	98		50 - 150	03/18/21 19:24	03/20/21 09:22	1
13C3 HFPO-DA	85		50 - 150	03/18/21 19:24	03/20/21 09:22	1

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# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB16-1**  
**Date Collected: 03/12/21 15:00**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-33**  
**Matrix: Solid**  
**Percent Solids: 93.9**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.1		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	93.9		0.1	0.1	%			03/18/21 11:30	1

**Client Sample ID: SB16-2**  
**Date Collected: 03/12/21 15:52**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-34**  
**Matrix: Solid**  
**Percent Solids: 91.0**

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.050</b>	<b>J I</b>	0.21	0.044	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.089	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.037	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.056</b>	<b>J</b>	0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.037	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.070	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.053	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.056	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.22</b>		0.21	0.032	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.5</b>		0.52	0.21	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.40	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 19:24	03/20/21 09:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C4 PFHpA	93		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C4 PFOA	78		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C5 PFNA	78		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C2 PFDA	73		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C2 PFUnA	90		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C2 PFDoA	89		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C2 PFTeDA	85		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C3 PFBS	77		50 - 150	03/18/21 19:24	03/20/21 09:31	1
18O2 PFHxS	75		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C4 PFOS	76		50 - 150	03/18/21 19:24	03/20/21 09:31	1
d3-NMeFOSAA	94		50 - 150	03/18/21 19:24	03/20/21 09:31	1
d5-NEtFOSAA	94		50 - 150	03/18/21 19:24	03/20/21 09:31	1
13C3 HFPO-DA	79		50 - 150	03/18/21 19:24	03/20/21 09:31	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB16-2**

**Date Collected: 03/12/21 15:52**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-34**

**Matrix: Solid**

**Percent Solids: 91.0**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.0		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	91.0		0.1	0.1	%			03/18/21 11:30	1

**Client Sample ID: SB17-1**

**Date Collected: 03/12/21 11:30**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-35**

**Matrix: Solid**

**Percent Solids: 93.3**

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.054	J I	0.20	0.043	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.030	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.088	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluorononanoic acid (PFNA)	0.053	J	0.20	0.037	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluorodecanoic acid (PFDA)	0.14	J	0.20	0.022	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluoroundecanoic acid (PFUnA)	0.67		0.20	0.037	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.069	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluorotridecanoic acid (PFTriA)	0.13	J	0.20	0.052	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.026	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluorohexanesulfonic acid (PFHxS)	0.13	J	0.20	0.032	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Perfluorooctanesulfonic acid (PFOS)	4.4		0.51	0.20	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.40	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.38	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.028	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	03/18/21 19:24	03/31/21 13:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C4 PFHpA	83		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C4 PFOA	84		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C5 PFNA	82		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C2 PFDA	80		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C2 PFUnA	84		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C2 PFDoA	92		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C2 PFTeDA	88		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C3 PFBS	72		50 - 150	03/18/21 19:24	03/31/21 13:54	1
18O2 PFHxS	76		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C4 PFOS	74		50 - 150	03/18/21 19:24	03/31/21 13:54	1
d3-NMeFOSAA	89		50 - 150	03/18/21 19:24	03/31/21 13:54	1
d5-NEtFOSAA	89		50 - 150	03/18/21 19:24	03/31/21 13:54	1
13C3 HFPO-DA	77		50 - 150	03/18/21 19:24	03/31/21 13:54	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB17-1**

**Date Collected: 03/12/21 11:30**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-35**

**Matrix: Solid**

**Percent Solids: 93.3**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.7		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	93.3		0.1	0.1	%			03/18/21 11:30	1

**Client Sample ID: SB17-2**

**Date Collected: 03/12/21 11:50**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-36**

**Matrix: Solid**

**Percent Solids: 97.1**

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	ND		0.19	0.052	ug/Kg	☼	03/18/21 19:24	03/20/21 10:08	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFTeDA	67		50 - 150				03/18/21 19:24	03/20/21 10:08	1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.19	0.040	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluoroheptanoic acid (PFHpA)	ND		0.19	0.028	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluorooctanoic acid (PFOA)	ND		0.19	0.083	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluorononanoic acid (PFNA)	0.074	J	0.19	0.035	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluorodecanoic acid (PFDA)	0.082	J	0.19	0.021	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluoroundecanoic acid (PFUnA)	0.038	J	0.19	0.035	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluorododecanoic acid (PFDoA)	ND		0.19	0.065	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluorotridecanoic acid (PFTriA)	ND		0.19	0.049	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.19	0.024	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.22		0.19	0.030	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Perfluorooctanesulfonic acid (PFOS)	8.7		0.48	0.19	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.38	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.36	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.19	0.026	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.11	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.19	0.021	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.19	0.017	ug/Kg	☼	03/18/21 19:24	03/30/21 16:03	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	70		50 - 150				03/18/21 19:24	03/30/21 16:03	1
13C4 PFHpA	79		50 - 150				03/18/21 19:24	03/30/21 16:03	1
13C4 PFOA	74		50 - 150				03/18/21 19:24	03/30/21 16:03	1
13C5 PFNA	76		50 - 150				03/18/21 19:24	03/30/21 16:03	1
13C2 PFDA	74		50 - 150				03/18/21 19:24	03/30/21 16:03	1
13C2 PFUnA	67		50 - 150				03/18/21 19:24	03/30/21 16:03	1
13C2 PFDoA	69		50 - 150				03/18/21 19:24	03/30/21 16:03	1
13C3 PFBS	55		50 - 150				03/18/21 19:24	03/30/21 16:03	1
18O2 PFHxS	64		50 - 150				03/18/21 19:24	03/30/21 16:03	1
13C4 PFOS	66		50 - 150				03/18/21 19:24	03/30/21 16:03	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB17-2**

**Date Collected: 03/12/21 11:50**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-36**

**Matrix: Solid**

**Percent Solids: 97.1**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d3-NMeFOSAA	71		50 - 150	03/18/21 19:24	03/30/21 16:03	1
d5-NEtFOSAA	70		50 - 150	03/18/21 19:24	03/30/21 16:03	1
13C3 HFPO-DA	72		50 - 150	03/18/21 19:24	03/30/21 16:03	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.9		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	97.1		0.1	0.1	%			03/18/21 11:30	1

**Client Sample ID: SB18-1**

**Date Collected: 03/12/21 16:33**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-37**

**Matrix: Solid**

**Percent Solids: 93.6**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	☼	03/18/21 19:24	03/20/21 10:18	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C2 PFTeDA	81		50 - 150	03/18/21 19:24	03/20/21 10:18	1			

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.043	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.030	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.088	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.037	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.023	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.037	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.069	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.052	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.026	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.032	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.51	0.20	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.40	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.38	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.028	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
<b>Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)</b>	<b>0.18 J</b>		0.26	0.11	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.023	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	03/18/21 19:24	03/30/21 16:13	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C2 PFHxA	75		50 - 150	03/18/21 19:24	03/30/21 16:13	1			
13C4 PFHpA	86		50 - 150	03/18/21 19:24	03/30/21 16:13	1			
13C4 PFOA	77		50 - 150	03/18/21 19:24	03/30/21 16:13	1			
13C5 PFNA	79		50 - 150	03/18/21 19:24	03/30/21 16:13	1			
13C2 PFDA	92		50 - 150	03/18/21 19:24	03/30/21 16:13	1			
13C2 PFUnA	88		50 - 150	03/18/21 19:24	03/30/21 16:13	1			

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB18-1**

**Date Collected: 03/12/21 16:33**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-37**

**Matrix: Solid**

**Percent Solids: 93.6**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	90		50 - 150	03/18/21 19:24	03/30/21 16:13	1
13C3 PFBS	65		50 - 150	03/18/21 19:24	03/30/21 16:13	1
18O2 PFHxS	75		50 - 150	03/18/21 19:24	03/30/21 16:13	1
13C4 PFOS	70		50 - 150	03/18/21 19:24	03/30/21 16:13	1
d3-NMeFOSAA	88		50 - 150	03/18/21 19:24	03/30/21 16:13	1
d5-NEtFOSAA	99		50 - 150	03/18/21 19:24	03/30/21 16:13	1
13C3 HFPO-DA	78		50 - 150	03/18/21 19:24	03/30/21 16:13	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.4		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	93.6		0.1	0.1	%			03/18/21 11:30	1

**Client Sample ID: SB18-2**

**Date Collected: 03/12/21 16:55**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-38**

**Matrix: Solid**

**Percent Solids: 96.4**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg	☼	03/18/21 19:24	03/20/21 10:27	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C2 PFTeDA	71		50 - 150	03/18/21 19:24	03/20/21 10:27	1			

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.086	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	03/18/21 19:24	03/30/21 16:22	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C2 PFHxA	80		50 - 150	03/18/21 19:24	03/30/21 16:22	1			
13C4 PFHpA	78		50 - 150	03/18/21 19:24	03/30/21 16:22	1			

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB18-2**

**Date Collected: 03/12/21 16:55**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-38**

**Matrix: Solid**

**Percent Solids: 96.4**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	78		50 - 150	03/18/21 19:24	03/30/21 16:22	1
13C5 PFNA	85		50 - 150	03/18/21 19:24	03/30/21 16:22	1
13C2 PFDA	78		50 - 150	03/18/21 19:24	03/30/21 16:22	1
13C2 PFUnA	73		50 - 150	03/18/21 19:24	03/30/21 16:22	1
13C2 PFDoA	86		50 - 150	03/18/21 19:24	03/30/21 16:22	1
13C3 PFBS	60		50 - 150	03/18/21 19:24	03/30/21 16:22	1
18O2 PFHxS	70		50 - 150	03/18/21 19:24	03/30/21 16:22	1
13C4 PFOS	75		50 - 150	03/18/21 19:24	03/30/21 16:22	1
d3-NMeFOSAA	72		50 - 150	03/18/21 19:24	03/30/21 16:22	1
d5-NEtFOSAA	69		50 - 150	03/18/21 19:24	03/30/21 16:22	1
13C3 HFPO-DA	76		50 - 150	03/18/21 19:24	03/30/21 16:22	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.6		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	96.4		0.1	0.1	%			03/18/21 11:30	1

**Client Sample ID: SBIW20-1**

**Date Collected: 03/15/21 13:35**

**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-39**

**Matrix: Solid**

**Percent Solids: 84.2**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.2		0.23	0.047	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluoroheptanoic acid (PFHpA)	0.37		0.23	0.033	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluorooctanoic acid (PFOA)	4.3		0.23	0.097	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluorononanoic acid (PFNA)	0.64		0.23	0.041	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluorodecanoic acid (PFDA)	8.2		0.23	0.025	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluoroundecanoic acid (PFUnA)	19		0.23	0.041	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluorododecanoic acid (PFDoA)	9.3		0.23	0.075	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.057	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluorotetradecanoic acid (PFTeA)	4.0		0.23	0.061	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluorobutanesulfonic acid (PFBS)	0.74		0.23	0.028	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluorohexanesulfonic acid (PFHxS)	7.9		0.23	0.035	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Perfluorooctanesulfonic acid (PFOS)	2600	E	0.56	0.23	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	6.6		2.3	0.44	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	6.4		2.3	0.42	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.030	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.12	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.025	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.020	ug/Kg	☼	03/18/21 19:24	03/20/21 10:36	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBIW20-1**

**Lab Sample ID: 320-71360-39**

Date Collected: 03/15/21 13:35

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 84.2

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C4 PFHpA	71		50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C4 PFOA	78		50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C5 PFNA	18	*5-	50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C2 PFDA	37	*5-	50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C2 PFUnA	50		50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C2 PFDoA	38	*5-	50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C2 PFTeDA	9	*5-	50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C3 PFBS	85		50 - 150	03/18/21 19:24	03/20/21 10:36	1
18O2 PFHxS	60		50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C4 PFOS	20	*5-	50 - 150	03/18/21 19:24	03/20/21 10:36	1
d3-NMeFOSAA	37	*5-	50 - 150	03/18/21 19:24	03/20/21 10:36	1
d5-NEtFOSAA	63		50 - 150	03/18/21 19:24	03/20/21 10:36	1
13C3 HFPO-DA	98		50 - 150	03/18/21 19:24	03/20/21 10:36	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.8		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	84.2		0.1	0.1	%			03/18/21 11:30	1

**Client Sample ID: SBIW20-101**

**Lab Sample ID: 320-71360-40**

Date Collected: 03/15/21 13:25

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 85.8

### Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	3.2		0.23	0.049	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluoroheptanoic acid (PFHpA)	0.68		0.23	0.034	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluorooctanoic acid (PFOA)	7.3		0.23	0.10	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluorononanoic acid (PFNA)	2.0		0.23	0.042	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluorodecanoic acid (PFDA)	30	E	0.23	0.026	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluoroundecanoic acid (PFUnA)	51	E	0.23	0.042	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluorododecanoic acid (PFDoA)	31	E	0.23	0.078	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluorotridecanoic acid (PFTriA)	16		0.23	0.059	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluorotetradecanoic acid (PFTeA)	14		0.23	0.063	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluorobutanesulfonic acid (PFBS)	0.99		0.23	0.029	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluorohexanesulfonic acid (PFHxS)	14		0.23	0.036	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Perfluorooctanesulfonic acid (PFOS)	5000	E	0.58	0.23	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	17		2.3	0.45	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	15		2.3	0.43	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.031	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.29	0.13	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.026	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBIW20-101**

**Lab Sample ID: 320-71360-40**

Date Collected: 03/15/21 13:25

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 85.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.021	ug/Kg	☼	03/18/21 19:24	03/20/21 10:46	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	115		50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C4 PFHpA	58		50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C4 PFOA	80		50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C5 PFNA	15	*5-	50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C2 PFDA	26	*5-	50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C2 PFUnA	34	*5-	50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C2 PFDoA	21	*5-	50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C2 PFTeDA	6	*5-	50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C3 PFBS	102		50 - 150				03/18/21 19:24	03/20/21 10:46	1
18O2 PFHxS	51		50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C4 PFOS	18	*5-	50 - 150				03/18/21 19:24	03/20/21 10:46	1
d3-NMeFOSAA	20	*5-	50 - 150				03/18/21 19:24	03/20/21 10:46	1
d5-NEtFOSAA	50		50 - 150				03/18/21 19:24	03/20/21 10:46	1
13C3 HFPO-DA	113		50 - 150				03/18/21 19:24	03/20/21 10:46	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.2		0.1	0.1	%			03/18/21 11:30	1
Percent Solids	85.8		0.1	0.1	%			03/18/21 11:30	1

**Client Sample ID: SBIW20-2**

**Lab Sample ID: 320-71360-41**

Date Collected: 03/15/21 13:40

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 90.5

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	0.057	J	0.21	0.057	ug/Kg	☼	03/18/21 19:24	03/20/21 10:55	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFTeDA	58		50 - 150				03/18/21 19:24	03/20/21 10:55	1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	120		5.2	2.1	ug/Kg	☼	03/18/21 19:24	03/31/21 15:09	10
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFOS	76		50 - 150				03/18/21 19:24	03/31/21 15:09	10

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.72		0.21	0.044	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
Perfluoroheptanoic acid (PFHpA)	0.076	J	0.21	0.030	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
Perfluorooctanoic acid (PFOA)	0.55		0.21	0.090	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
Perfluorononanoic acid (PFNA)	0.042	J	0.21	0.038	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
Perfluorodecanoic acid (PFDA)	0.14	J	0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
Perfluoroundecanoic acid (PFUnA)	0.10	J	0.21	0.038	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.070	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBIW20-2**

**Lab Sample ID: 320-71360-41**

Date Collected: 03/15/21 13:40

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 90.5

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.053	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>0.27</b>		0.21	0.026	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>1.3</b>		0.21	0.032	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.12	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	03/18/21 19:24	03/30/21 16:32	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	72		50 - 150				03/18/21 19:24	03/30/21 16:32	1
13C4 PFHpA	84		50 - 150				03/18/21 19:24	03/30/21 16:32	1
13C4 PFOA	84		50 - 150				03/18/21 19:24	03/30/21 16:32	1
13C5 PFNA	69		50 - 150				03/18/21 19:24	03/30/21 16:32	1
13C2 PFDA	80		50 - 150				03/18/21 19:24	03/30/21 16:32	1
13C2 PFUnA	82		50 - 150				03/18/21 19:24	03/30/21 16:32	1
13C2 PFDoA	92		50 - 150				03/18/21 19:24	03/30/21 16:32	1
13C3 PFBS	64		50 - 150				03/18/21 19:24	03/30/21 16:32	1
18O2 PFHxS	80		50 - 150				03/18/21 19:24	03/30/21 16:32	1
13C4 PFOS	72		50 - 150				03/18/21 19:24	03/30/21 16:32	1
d3-NMeFOSAA	80		50 - 150				03/18/21 19:24	03/30/21 16:32	1
d5-NEtFOSAA	80		50 - 150				03/18/21 19:24	03/30/21 16:32	1
13C3 HFPO-DA	74		50 - 150				03/18/21 19:24	03/30/21 16:32	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>9.5</b>		0.1	0.1	%			03/18/21 10:26	1
<b>Percent Solids</b>	<b>90.5</b>		0.1	0.1	%			03/18/21 10:26	1

**Client Sample ID: SBIW19-1**

**Lab Sample ID: 320-71360-42**

Date Collected: 03/15/21 13:05

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 94.0

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>730</b>	<b>E</b>	0.21	0.044	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>170</b>	<b>E</b>	0.21	0.030	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>1500</b>	<b>E</b>	0.21	0.090	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>43</b>	<b>E</b>	0.21	0.038	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>120</b>	<b>E</b>	0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>17</b>		0.21	0.038	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
<b>Perfluorododecanoic acid (PFDoA)</b>	<b>32</b>	<b>E</b>	0.21	0.070	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBIW19-1**

**Lab Sample ID: 320-71360-42**

Date Collected: 03/15/21 13:05

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 94.0

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic acid (PFTriA)	5.9		0.21	0.054	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
Perfluorotetradecanoic acid (PFTeA)	24	E	0.21	0.057	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
Perfluorobutanesulfonic acid (PFBS)	180	E	0.21	0.026	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
Perfluorohexanesulfonic acid (PFHxS)	3100	E	0.21	0.033	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
Perfluorooctanesulfonic acid (PFOS)	11000	E I	0.52	0.21	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.0		2.1	0.41	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	12	F2	2.1	0.39	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND	F1	0.21	0.028	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.12	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	F1	0.21	0.023	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	F1	0.21	0.019	ug/Kg	☼	03/18/21 19:24	03/20/21 11:04	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	500	*5+	50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C4 PFHpA	83		50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C4 PFOA	61		50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C5 PFNA	38	*5-	50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C2 PFDA	143		50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C2 PFUnA	412	*5+	50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C2 PFDoA	173	*5+	50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C2 PFTeDA	59		50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C3 PFBS	1096	*5+	50 - 150	03/18/21 19:24	03/20/21 11:04	1
18O2 PFHxS	206	*5+	50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C4 PFOS	275	*5+	50 - 150	03/18/21 19:24	03/20/21 11:04	1
d3-NMeFOSAA	147		50 - 150	03/18/21 19:24	03/20/21 11:04	1
d5-NEtFOSAA	617	*5+	50 - 150	03/18/21 19:24	03/20/21 11:04	1
13C3 HFPO-DA	715	*5+	50 - 150	03/18/21 19:24	03/20/21 11:04	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.0		0.1	0.1	%			03/18/21 10:26	1
Percent Solids	94.0		0.1	0.1	%			03/18/21 10:26	1

**Client Sample ID: SBIW19-2**

**Lab Sample ID: 320-71360-43**

Date Collected: 03/15/21 13:10

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 94.5

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	0.67		0.20	0.054	ug/Kg	☼	03/18/21 19:37	03/20/21 11:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFTeDA	22	*5-	50 - 150	03/18/21 19:37	03/20/21 11:51	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBIW19-2**

**Lab Sample ID: 320-71360-43**

Date Collected: 03/15/21 13:10

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 94.5

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	170		5.0	2.0	ug/Kg	☼	03/18/21 19:37	03/31/21 15:18	10
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOS	61		50 - 150				03/18/21 19:37	03/31/21 15:18	10

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - RA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.8		0.20	0.042	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Perfluoroheptanoic acid (PFHpA)	0.34		0.20	0.029	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Perfluorooctanoic acid (PFOA)	1.5		0.20	0.086	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Perfluorononanoic acid (PFNA)	0.067	J	0.20	0.036	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Perfluorodecanoic acid (PFDA)	0.13	J	0.20	0.022	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Perfluoroundecanoic acid (PFUnA)	0.041	J	0.20	0.036	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Perfluorododecanoic acid (PFDoA)	0.32		0.20	0.067	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Perfluorotridecanoic acid (PFTriA)	0.23		0.20	0.051	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Perfluorobutanesulfonic acid (PFBS)	0.44		0.20	0.025	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Perfluorohexanesulfonic acid (PFHxS)	7.2		0.20	0.031	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	03/18/21 19:37	03/30/21 16:41	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	83		50 - 150				03/18/21 19:37	03/30/21 16:41	1
13C4 PFHpA	74		50 - 150				03/18/21 19:37	03/30/21 16:41	1
13C4 PFOA	81		50 - 150				03/18/21 19:37	03/30/21 16:41	1
13C5 PFNA	69		50 - 150				03/18/21 19:37	03/30/21 16:41	1
13C2 PFDA	86		50 - 150				03/18/21 19:37	03/30/21 16:41	1
13C2 PFUnA	79		50 - 150				03/18/21 19:37	03/30/21 16:41	1
13C2 PFDoA	81		50 - 150				03/18/21 19:37	03/30/21 16:41	1
13C3 PFBS	65		50 - 150				03/18/21 19:37	03/30/21 16:41	1
18O2 PFHxS	68		50 - 150				03/18/21 19:37	03/30/21 16:41	1
13C4 PFOS	72		50 - 150				03/18/21 19:37	03/30/21 16:41	1
d3-NMeFOSAA	81		50 - 150				03/18/21 19:37	03/30/21 16:41	1
d5-NEtFOSAA	96		50 - 150				03/18/21 19:37	03/30/21 16:41	1
13C3 HFPO-DA	76		50 - 150				03/18/21 19:37	03/30/21 16:41	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.5		0.1	0.1	%			03/18/21 10:26	1
Percent Solids	94.5		0.1	0.1	%			03/18/21 10:26	1

Eurolins TestAmerica, Sacramento

# Isotope Dilution Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

**Matrix: Solid**

**Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDaA (50-150)	PFTDA (50-150)
320-71360-1	SBMW1-1	82	82	80	78	83	81	82	72
320-71360-2	SBMW1-2	79	84	71	65	65	74	80	62
320-71360-3	SBMW2-1	79	86	80	75	72	84	94	78
320-71360-4	SBMW2-2	78	80	79	73	70	62	70	74
320-71360-5	SBMW3-1	83	83	87	77	73	80	84	69
320-71360-6	SBMW3-101	77	83	78	71	71	74	77	66
320-71360-7	SBMW3-2	79	82	77	71	62	61	66	64
320-71360-8	SBMW4-1	84	85	78	75	71	72	78	76
320-71360-9	SBMW4-2	86	97	90	93	93	74	75	80
320-71360-10	SBTWP5-1	83	97	92	73	71	64	66	52
320-71360-10 - DL	SBTWP5-1								
320-71360-10 MS	SBTWP5-1	96	95	90	85	71	69	65	63
320-71360-10 MS - DL	SBTWP5-1								
320-71360-10 MSD	SBTWP5-1	96	99	90	85	78	76	75	71
320-71360-10 MSD - DL	SBTWP5-1								
320-71360-11	SBTWP5-2	80	87	80	78	68	85	78	61
320-71360-12	SBTWP5-102	83	82	79	75	73	82	83	65
320-71360-12 - DL	SBTWP5-102								
320-71360-13	SBTWP6-1	77	81	76	80	84	91	89	68
320-71360-14	SBTWP6-101	81	86	83	81	78	76	88	69
320-71360-15	SBTWP7-1	84	92	80	86	80	78	87	69
320-71360-16	SBTWP7-2	72	82	82	77	75	80	85	73
320-71360-17	SBMW4-101	84	84	72	89	77	83	80	70
320-71360-18	SB9-1	82	88	84	86	76	94	94	72
320-71360-19	SB9-2	78	80	79	79	70	81	81	79
320-71360-20	SBTWP6-2	84	86	81	84	77	80	81	82
320-71360-21	SB10-1	81	89	78	78	74	74	74	66
320-71360-22	SB10-2	85	83	81	87	81	87	79	71
320-71360-23	SB11-1	75	76	74	76	73	78	82	73
320-71360-24	SB11-2	72	83	79	77	79	74	76	75
320-71360-25	SB12-1	80	86	82	96	78	85	90	83
320-71360-26	SB12-2	77	83	78	75	71	80	86	72
320-71360-26 MS	SB12-2	80	90	79	83	79	82	89	79
320-71360-26 MSD	SB12-2	81	91	85	82	77	83	80	80
320-71360-27	SB13-1	74	78	74	74	74	83	85	74
320-71360-28	SB13-2	73	74	74	74	72	78	73	65
320-71360-29	SB14-1	73	75	71	77	69	79	73	70
320-71360-30	SB14-2	79	83	83	84	87	87	87	84
320-71360-31	SB15-1	82	87	77	77	76	87	85	77
320-71360-31 - DL	SB15-1								
320-71360-32	SB15-2	39 *5-	44 *5-	44 *5-	39 *5-	41 *5-	43 *5-	42 *5-	37 *5-
320-71360-32 - DL	SB15-2								
320-71360-33	SB16-1	82	85	84	80	77	83	96	81
320-71360-34	SB16-2	83	93	78	78	73	90	89	85
320-71360-35	SB17-1	80	83	84	82	80	84	92	88
320-71360-36	SB17-2								67
320-71360-36 - RA	SB17-2	70	79	74	76	74	67	69	
320-71360-37	SB18-1								81
320-71360-37 - RA	SB18-1	75	86	77	79	92	88	90	

Eurofins TestAmerica, Sacramento

# Isotope Dilution Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-71360-1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

**Matrix: Solid**

**Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDaA (50-150)	PFTDA (50-150)
320-71360-38	SB18-2								71
320-71360-38 - RA	SB18-2	80	78	78	85	78	73	86	
320-71360-39	SBIW20-1	94	71	78	18 *5-	37 *5-	50	38 *5-	9 *5-
320-71360-40	SBIW20-101	115	58	80	15 *5-	26 *5-	34 *5-	21 *5-	6 *5-
320-71360-41	SBIW20-2								58
320-71360-41 - RA	SBIW20-2	72	84	84	69	80	82	92	
320-71360-41 - DL	SBIW20-2								
320-71360-42	SBIW19-1	500 *5+	83	61	38 *5-	143	412 *5+	173 *5+	59
320-71360-42 MS	SBIW19-1	423 *5+	77	43 *5-	26 *5-	133	393 *5+	170 *5+	70
320-71360-42 MSD	SBIW19-1	513 *5+	73	59	26 *5-	149	432 *5+	192 *5+	79
320-71360-43	SBIW19-2								22 *5-
320-71360-43 - RA	SBIW19-2	83	74	81	69	86	79	81	
320-71360-43 - DL	SBIW19-2								
LCS 320-471686/2-A	Lab Control Sample	77	86	84	79	84	77	81	73
LCS 320-471894/2-A	Lab Control Sample	61	73	68	63	64	65	61	60
LCS 320-471897/2-A	Lab Control Sample	70	77	75	75	74	77	77	73
MB 320-471686/1-A	Method Blank	80	85	77	74	78	76	75	68
MB 320-471894/1-A	Method Blank	74	73	73	73	62	64	70	51
MB 320-471897/1-A	Method Blank	73	73	70	71	71	77	78	70

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)
320-71360-1	SBMW1-1	67	73	67	97	102	82
320-71360-2	SBMW1-2	70	73	56	83	93	80
320-71360-3	SBMW2-1	74	81	64	93	120	79
320-71360-4	SBMW2-2	66	72	63	75	73	78
320-71360-5	SBMW3-1	73	79	68	92	103	78
320-71360-6	SBMW3-101	71	77	64	81	91	78
320-71360-7	SBMW3-2	70	72	62	69	63	82
320-71360-8	SBMW4-1	85	74	65	87	100	77
320-71360-9	SBMW4-2	79	92	84	88	84	84
320-71360-10	SBTWP5-1	75	83	60	75	74	87
320-71360-10 - DL	SBTWP5-1			62			
320-71360-10 MS	SBTWP5-1	81	79	69	72	75	90
320-71360-10 MS - DL	SBTWP5-1			68			
320-71360-10 MSD	SBTWP5-1	77	86	73	87	81	83
320-71360-10 MSD - DL	SBTWP5-1			67			
320-71360-11	SBTWP5-2	72	72	71	84	85	77
320-71360-12	SBTWP5-102	65	67	66	89	90	75
320-71360-12 - DL	SBTWP5-102			73			
320-71360-13	SBTWP6-1	60	62	61	105	109	73
320-71360-14	SBTWP6-101	64	62	64	114	107	78
320-71360-15	SBTWP7-1	64	71	73	94	93	80
320-71360-16	SBTWP7-2	62	72	69	94	85	83
320-71360-17	SBMW4-101	73	72	68	93	106	75
320-71360-18	SB9-1	71	76	79	98	107	81
320-71360-19	SB9-2	64	70	70	82	82	73
320-71360-20	SBTWP6-2	76	74	76	90	88	78
320-71360-21	SB10-1	63	63	69	81	88	74
320-71360-22	SB10-2	69	73	74	92	86	83

Eurofins TestAmerica, Sacramento

# Isotope Dilution Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-71360-1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

**Matrix: Solid**

**Prep Type: Total/NA**

**Percent Isotope Dilution Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOs (50-150)	d5NEFOs (50-150)	HFPODA (50-150)
320-71360-23	SB11-1	59	65	63	90	92	69
320-71360-24	SB11-2	64	63	69	84	81	72
320-71360-25	SB12-1	74	76	78	96	102	84
320-71360-26	SB12-2	62	68	70	88	82	76
320-71360-26 MS	SB12-2	74	71	74	96	89	76
320-71360-26 MSD	SB12-2	65	75	73	91	85	81
320-71360-27	SB13-1	67	65	66	99	100	78
320-71360-28	SB13-2	64	67	62	79	84	75
320-71360-29	SB14-1	66	66	69	80	95	77
320-71360-30	SB14-2	70	74	77	97	87	88
320-71360-31	SB15-1	71	69		91	89	82
320-71360-31 - DL	SB15-1			72			
320-71360-32	SB15-2	37 *5-	39 *5-		46 *5-	43 *5-	42 *5-
320-71360-32 - DL	SB15-2			37 *5-			
320-71360-33	SB16-1	73	69	71	91	98	85
320-71360-34	SB16-2	77	75	76	94	94	79
320-71360-35	SB17-1	72	76	74	89	89	77
320-71360-36	SB17-2						
320-71360-36 - RA	SB17-2	55	64	66	71	70	72
320-71360-37	SB18-1						
320-71360-37 - RA	SB18-1	65	75	70	88	99	78
320-71360-38	SB18-2						
320-71360-38 - RA	SB18-2	60	70	75	72	69	76
320-71360-39	SBIW20-1	85	60	20 *5-	37 *5-	63	98
320-71360-40	SBIW20-101	102	51	18 *5-	20 *5-	50	113
320-71360-41	SBIW20-2						
320-71360-41 - RA	SBIW20-2	64	80	72	80	80	74
320-71360-41 - DL	SBIW20-2			76			
320-71360-42	SBIW19-1	1096 *5+	206 *5+	275 *5+	147	617 *5+	715 *5+
320-71360-42 MS	SBIW19-1	885 *5+	213 *5+	240 *5+	131	461 *5+	529 *5+
320-71360-42 MSD	SBIW19-1	999 *5+	195 *5+	267 *5+	184 *5+	685 *5+	714 *5+
320-71360-43	SBIW19-2						
320-71360-43 - RA	SBIW19-2	65	68	72	81	96	76
320-71360-43 - DL	SBIW19-2			61			
LCS 320-471686/2-A	Lab Control Sample	76	77	74	92	93	78
LCS 320-471894/2-A	Lab Control Sample	61	62	61	74	70	70
LCS 320-471897/2-A	Lab Control Sample	66	71	68	79	81	72
MB 320-471686/1-A	Method Blank	74	79	75	86	84	76
MB 320-471894/1-A	Method Blank	60	63	63	77	74	70
MB 320-471897/1-A	Method Blank	66	65	63	84	76	72

**Surrogate Legend**

- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA



# Isotope Dilution Summary

Job ID: 320-71360-1

Client: Shannon & Wilson, Inc

Project/Site: Cordova SREB

C3PFBS =  $^{13}\text{C}_3$  PFBS

PFHxS = 18O2 PFHxS

PFOS =  $^{13}\text{C}_4$  PFOS

d3NMFOS = d3-NMeFOSAA

d5NEFOS = d5-NEtFOSAA

HFPODA =  $^{13}\text{C}_3$  HFPO-DA

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# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

**Lab Sample ID: MB 320-471686/1-A**  
**Matrix: Solid**  
**Analysis Batch: 473142**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 471686**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.086	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg		03/18/21 12:20	03/22/21 19:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg		03/18/21 12:20	03/22/21 19:32	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	80		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C4 PFHpA	85		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C4 PFOA	77		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C5 PFNA	74		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C2 PFDA	78		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C2 PFUnA	76		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C2 PFDoA	75		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C2 PFTeDA	68		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C3 PFBS	74		50 - 150	03/18/21 12:20	03/22/21 19:32	1
18O2 PFHxS	79		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C4 PFOS	75		50 - 150	03/18/21 12:20	03/22/21 19:32	1
d3-NMeFOSAA	86		50 - 150	03/18/21 12:20	03/22/21 19:32	1
d5-NEtFOSAA	84		50 - 150	03/18/21 12:20	03/22/21 19:32	1
13C3 HFPO-DA	76		50 - 150	03/18/21 12:20	03/22/21 19:32	1

**Lab Sample ID: LCS 320-471686/2-A**  
**Matrix: Solid**  
**Analysis Batch: 473142**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471686**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorohexanoic acid (PFHxA)	2.00	2.31		ug/Kg		115	70 - 132
Perfluoroheptanoic acid (PFHpA)	2.00	2.11		ug/Kg		106	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.13		ug/Kg		107	69 - 133
Perfluorononanoic acid (PFNA)	2.00	2.27		ug/Kg		113	72 - 129

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCS 320-471686/2-A**  
**Matrix: Solid**  
**Analysis Batch: 473142**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471686**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	2.00	2.10		ug/Kg		105	69 - 133
Perfluoroundecanoic acid (PFUnA)	2.00	2.47		ug/Kg		124	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	2.10		ug/Kg		105	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	2.34		ug/Kg		117	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	2.50		ug/Kg		125	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.98		ug/Kg		112	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	2.10		ug/Kg		115	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.97		ug/Kg		106	68 - 136
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	2.00	2.06		ug/Kg		103	63 - 144
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	2.00	1.84	J	ug/Kg		92	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	2.24		ug/Kg		120	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.04		ug/Kg		102	77 - 137
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	1.88	2.03		ug/Kg		108	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	2.31		ug/Kg		123	79 - 139

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	77		50 - 150
13C4 PFHpA	86		50 - 150
13C4 PFOA	84		50 - 150
13C5 PFNA	79		50 - 150
13C2 PFDA	84		50 - 150
13C2 PFUnA	77		50 - 150
13C2 PFDoA	81		50 - 150
13C2 PFTeDA	73		50 - 150
13C3 PFBS	76		50 - 150
18O2 PFHxS	77		50 - 150
13C4 PFOS	74		50 - 150
d3-NMeFOSAA	92		50 - 150
d5-NEtFOSAA	93		50 - 150
13C3 HFPO-DA	78		50 - 150

**Lab Sample ID: 320-71360-10 MS**  
**Matrix: Solid**  
**Analysis Batch: 473142**

**Client Sample ID: SBTWP5-1**  
**Prep Type: Total/NA**  
**Prep Batch: 471686**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	0.13	J	1.97	2.25		ug/Kg	⊛	108	70 - 132
Perfluoroheptanoic acid (PFHpA)	0.035	J	1.97	2.21		ug/Kg	⊛	110	71 - 131
Perfluorooctanoic acid (PFOA)	0.12	J	1.97	2.33		ug/Kg	⊛	112	69 - 133

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-71360-10 MS**

**Matrix: Solid**

**Analysis Batch: 473142**

**Client Sample ID: SBTWP5-1**

**Prep Type: Total/NA**

**Prep Batch: 471686**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorononanoic acid (PFNA)	0.042	J	1.97	2.26		ug/Kg	⊛	112	72 - 129
Perfluorodecanoic acid (PFDA)	0.059	J	1.97	2.51		ug/Kg	⊛	124	69 - 133
Perfluoroundecanoic acid (PFUnA)	ND		1.97	2.57		ug/Kg	⊛	130	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		1.97	2.21		ug/Kg	⊛	112	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		1.97	2.50		ug/Kg	⊛	127	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		1.97	2.43		ug/Kg	⊛	124	69 - 133
Perfluorobutanesulfonic acid (PFBS)	0.081	J	1.74	2.17		ug/Kg	⊛	120	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	0.70	F1	1.79	3.19	F1	ug/Kg	⊛	139	67 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.97	1.97	J	ug/Kg	⊛	100	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.97	1.96	J	ug/Kg	⊛	99	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.84	2.07		ug/Kg	⊛	113	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.97	2.15		ug/Kg	⊛	109	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.86	1.70		ug/Kg	⊛	92	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	F1	1.86	2.82	F1	ug/Kg	⊛	152	79 - 139

	MS %Recovery	MS Qualifier	MS Limits
<i>13C2 PFHxA</i>	96		50 - 150
<i>13C4 PFHpA</i>	95		50 - 150
<i>13C4 PFOA</i>	90		50 - 150
<i>13C5 PFNA</i>	85		50 - 150
<i>13C2 PFDA</i>	71		50 - 150
<i>13C2 PFUnA</i>	69		50 - 150
<i>13C2 PFDoA</i>	65		50 - 150
<i>13C2 PFTeDA</i>	63		50 - 150
<i>13C3 PFBS</i>	81		50 - 150
<i>18O2 PFHxS</i>	79		50 - 150
<i>13C4 PFOS</i>	69		50 - 150
<i>d3-NMeFOSAA</i>	72		50 - 150
<i>d5-NEtFOSAA</i>	75		50 - 150
<i>13C3 HFPO-DA</i>	90		50 - 150

**Lab Sample ID: 320-71360-10 MSD**

**Matrix: Solid**

**Analysis Batch: 473142**

**Client Sample ID: SBTWP5-1**

**Prep Type: Total/NA**

**Prep Batch: 471686**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	0.13	J	2.04	2.33		ug/Kg	⊛	108	70 - 132	3	30
Perfluoroheptanoic acid (PFHpA)	0.035	J	2.04	2.26		ug/Kg	⊛	109	71 - 131	2	30
Perfluorooctanoic acid (PFOA)	0.12	J	2.04	2.32		ug/Kg	⊛	108	69 - 133	0	30
Perfluorononanoic acid (PFNA)	0.042	J	2.04	2.35		ug/Kg	⊛	113	72 - 129	4	30

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-71360-10 MSD**

**Matrix: Solid**

**Analysis Batch: 473142**

**Client Sample ID: SBTWP5-1**

**Prep Type: Total/NA**

**Prep Batch: 471686**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanoic acid (PFDA)	0.059	J	2.04	2.45		ug/Kg	☼	117	69 - 133	2	30
Perfluoroundecanoic acid (PFUnA)	ND		2.04	2.37		ug/Kg	☼	116	64 - 136	8	30
Perfluorododecanoic acid (PFDoA)	ND		2.04	2.17		ug/Kg	☼	107	69 - 135	2	30
Perfluorotridecanoic acid (PFTriA)	ND		2.04	2.48		ug/Kg	☼	121	66 - 139	1	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.04	2.50		ug/Kg	☼	123	69 - 133	3	30
Perfluorobutanesulfonic acid (PFBS)	0.081	J	1.80	2.07		ug/Kg	☼	110	72 - 128	5	30
Perfluorohexanesulfonic acid (PFHxS)	0.70	F1	1.86	2.69		ug/Kg	☼	107	67 - 130	17	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.04	2.01		ug/Kg	☼	99	63 - 144	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.04	2.16		ug/Kg	☼	106	61 - 139	10	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.90	2.20		ug/Kg	☼	116	75 - 135	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.04	2.55		ug/Kg	☼	125	77 - 137	17	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.92	1.83		ug/Kg	☼	95	76 - 136	7	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	F1	1.92	2.72	F1	ug/Kg	☼	142	79 - 139	3	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	96		50 - 150
13C4 PFHpA	99		50 - 150
13C4 PFOA	90		50 - 150
13C5 PFNA	85		50 - 150
13C2 PFDA	78		50 - 150
13C2 PFUnA	76		50 - 150
13C2 PFDoA	75		50 - 150
13C2 PFTeDA	71		50 - 150
13C3 PFBS	77		50 - 150
18O2 PFHxS	86		50 - 150
13C4 PFOS	73		50 - 150
d3-NMeFOSAA	87		50 - 150
d5-NEtFOSAA	81		50 - 150
13C3 HFPO-DA	83		50 - 150

**Lab Sample ID: MB 320-471894/1-A**

**Matrix: Solid**

**Analysis Batch: 472581**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 471894**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.086	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg		03/18/21 19:19	03/21/21 14:47	1

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: MB 320-471894/1-A**  
**Matrix: Solid**  
**Analysis Batch: 472581**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 471894**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg		03/18/21 19:19	03/21/21 14:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg		03/18/21 19:19	03/21/21 14:47	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	74		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C4 PFHpA	73		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C4 PFOA	73		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C5 PFNA	73		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C2 PFDA	62		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C2 PFUnA	64		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C2 PFDoA	70		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C2 PFTeDA	51		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C3 PFBS	60		50 - 150	03/18/21 19:19	03/21/21 14:47	1
18O2 PFHxS	63		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C4 PFOS	63		50 - 150	03/18/21 19:19	03/21/21 14:47	1
d3-NMeFOSAA	77		50 - 150	03/18/21 19:19	03/21/21 14:47	1
d5-NEtFOSAA	74		50 - 150	03/18/21 19:19	03/21/21 14:47	1
13C3 HFPO-DA	70		50 - 150	03/18/21 19:19	03/21/21 14:47	1

**Lab Sample ID: LCS 320-471894/2-A**  
**Matrix: Solid**  
**Analysis Batch: 472581**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471894**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	2.00	2.25		ug/Kg		113	70 - 132
Perfluoroheptanoic acid (PFHpA)	2.00	2.11		ug/Kg		106	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.22		ug/Kg		111	69 - 133
Perfluorononanoic acid (PFNA)	2.00	2.41		ug/Kg		120	72 - 129
Perfluorodecanoic acid (PFDA)	2.00	2.31		ug/Kg		115	69 - 133
Perfluoroundecanoic acid (PFUnA)	2.00	2.18		ug/Kg		109	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	2.24		ug/Kg		112	69 - 135

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCS 320-471894/2-A**  
**Matrix: Solid**  
**Analysis Batch: 472581**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471894**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorotridecanoic acid (PFTriA)	2.00	2.36		ug/Kg		118	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	2.26		ug/Kg		113	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.74		ug/Kg		99	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	2.20		ug/Kg		121	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	2.05		ug/Kg		110	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.86	J	ug/Kg		93	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.19		ug/Kg		110	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	2.27		ug/Kg		122	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	1.78		ug/Kg		89	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	2.14		ug/Kg		114	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	2.22		ug/Kg		118	79 - 139

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	61		50 - 150
13C4 PFHpA	73		50 - 150
13C4 PFOA	68		50 - 150
13C5 PFNA	63		50 - 150
13C2 PFDA	64		50 - 150
13C2 PFUnA	65		50 - 150
13C2 PFDoA	61		50 - 150
13C2 PFTeDA	60		50 - 150
13C3 PFBS	61		50 - 150
18O2 PFHxS	62		50 - 150
13C4 PFOS	61		50 - 150
d3-NMeFOSAA	74		50 - 150
d5-NEtFOSAA	70		50 - 150
13C3 HFPO-DA	70		50 - 150

**Lab Sample ID: 320-71360-26 MS**  
**Matrix: Solid**  
**Analysis Batch: 472581**

**Client Sample ID: SB12-2**  
**Prep Type: Total/NA**  
**Prep Batch: 471894**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	ND		1.94	2.07		ug/Kg	⊛	107	70 - 132
Perfluoroheptanoic acid (PFHpA)	ND		1.94	1.95		ug/Kg	⊛	100	71 - 131
Perfluorooctanoic acid (PFOA)	ND		1.94	2.18		ug/Kg	⊛	112	69 - 133
Perfluorononanoic acid (PFNA)	ND		1.94	2.01		ug/Kg	⊛	104	72 - 129
Perfluorodecanoic acid (PFDA)	ND		1.94	2.06		ug/Kg	⊛	106	69 - 133
Perfluoroundecanoic acid (PFUnA)	ND		1.94	2.21		ug/Kg	⊛	114	64 - 136

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# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-71360-26 MS**  
**Matrix: Solid**  
**Analysis Batch: 472581**

**Client Sample ID: SB12-2**  
**Prep Type: Total/NA**  
**Prep Batch: 471894**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	ND		1.94	1.96		ug/Kg	⊛	101	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		1.94	1.84		ug/Kg	⊛	95	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		1.94	2.17		ug/Kg	⊛	112	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND		1.72	1.65		ug/Kg	⊛	96	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	ND		1.77	2.08		ug/Kg	⊛	118	67 - 130
Perfluorooctanesulfonic acid (PFOS)	0.23	J	1.80	2.13		ug/Kg	⊛	106	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.94	1.73	J	ug/Kg	⊛	89	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.94	2.12		ug/Kg	⊛	109	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.81	2.10		ug/Kg	⊛	116	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.94	1.79		ug/Kg	⊛	92	77 - 137
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		1.83	2.17		ug/Kg	⊛	119	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.83	2.05		ug/Kg	⊛	112	79 - 139

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	80		50 - 150
13C4 PFHpA	90		50 - 150
13C4 PFOA	79		50 - 150
13C5 PFNA	83		50 - 150
13C2 PFDA	79		50 - 150
13C2 PFUnA	82		50 - 150
13C2 PFDoA	89		50 - 150
13C2 PFTeDA	79		50 - 150
13C3 PFBS	74		50 - 150
18O2 PFHxS	71		50 - 150
13C4 PFOS	74		50 - 150
d3-NMeFOSAA	96		50 - 150
d5-NEtFOSAA	89		50 - 150
13C3 HFPO-DA	76		50 - 150

**Lab Sample ID: 320-71360-26 MSD**  
**Matrix: Solid**  
**Analysis Batch: 472581**

**Client Sample ID: SB12-2**  
**Prep Type: Total/NA**  
**Prep Batch: 471894**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	
				Result	Qualifier					RPD	Limit
Perfluorohexanoic acid (PFHxA)	ND		2.13	1.96		ug/Kg	⊛	92	70 - 132	5	30
Perfluoroheptanoic acid (PFHpA)	ND		2.13	1.98		ug/Kg	⊛	93	71 - 131	2	30
Perfluorooctanoic acid (PFOA)	ND		2.13	2.23		ug/Kg	⊛	105	69 - 133	2	30
Perfluorononanoic acid (PFNA)	ND		2.13	2.45		ug/Kg	⊛	115	72 - 129	20	30
Perfluorodecanoic acid (PFDA)	ND		2.13	2.45		ug/Kg	⊛	115	69 - 133	17	30

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# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-71360-26 MSD**  
**Matrix: Solid**  
**Analysis Batch: 472581**

**Client Sample ID: SB12-2**  
**Prep Type: Total/NA**  
**Prep Batch: 471894**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	ND		2.13	2.38		ug/Kg	☼	112	64 - 136	7	30
Perfluorododecanoic acid (PFDoA)	ND		2.13	2.42		ug/Kg	☼	114	69 - 135	21	30
Perfluorotridecanoic acid (PFTriA)	ND		2.13	2.24		ug/Kg	☼	105	66 - 139	19	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.13	2.39		ug/Kg	☼	113	69 - 133	10	30
Perfluorobutanesulfonic acid (PFBS)	ND		1.88	2.01		ug/Kg	☼	107	72 - 128	19	30
Perfluorohexanesulfonic acid (PFHxS)	ND		1.93	2.13		ug/Kg	☼	110	67 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	0.23	J	1.97	2.33		ug/Kg	☼	107	68 - 136	9	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.13	1.93	J	ug/Kg	☼	91	63 - 144	11	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.13	2.21		ug/Kg	☼	104	61 - 139	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.98	2.31		ug/Kg	☼	117	75 - 135	10	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.13	2.02		ug/Kg	☼	95	77 - 137	12	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.00	2.36		ug/Kg	☼	118	76 - 136	8	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.00	2.27		ug/Kg	☼	114	79 - 139	10	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	81		50 - 150
13C4 PFHpA	91		50 - 150
13C4 PFOA	85		50 - 150
13C5 PFNA	82		50 - 150
13C2 PFDA	77		50 - 150
13C2 PFUnA	83		50 - 150
13C2 PFDoA	80		50 - 150
13C2 PFTeDA	80		50 - 150
13C3 PFBS	65		50 - 150
18O2 PFHxS	75		50 - 150
13C4 PFOS	73		50 - 150
d3-NMeFOSAA	91		50 - 150
d5-NEtFOSAA	85		50 - 150
13C3 HFPO-DA	81		50 - 150

**Lab Sample ID: MB 320-471897/1-A**  
**Matrix: Solid**  
**Analysis Batch: 472276**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 471897**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.086	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg		03/18/21 19:24	03/20/21 08:07	1

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# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: MB 320-471897/1-A**  
**Matrix: Solid**  
**Analysis Batch: 472276**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 471897**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg		03/18/21 19:24	03/20/21 08:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg		03/18/21 19:24	03/20/21 08:07	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	73		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C4 PFHpA	73		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C4 PFOA	70		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C5 PFNA	71		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C2 PFDA	71		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C2 PFUnA	77		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C2 PFDoA	78		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C2 PFTeDA	70		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C3 PFBS	66		50 - 150	03/18/21 19:24	03/20/21 08:07	1
18O2 PFHxS	65		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C4 PFOS	63		50 - 150	03/18/21 19:24	03/20/21 08:07	1
d3-NMeFOSAA	84		50 - 150	03/18/21 19:24	03/20/21 08:07	1
d5-NEtFOSAA	76		50 - 150	03/18/21 19:24	03/20/21 08:07	1
13C3 HFPO-DA	72		50 - 150	03/18/21 19:24	03/20/21 08:07	1

**Lab Sample ID: LCS 320-471897/2-A**  
**Matrix: Solid**  
**Analysis Batch: 472276**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471897**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Perfluorohexanoic acid (PFHxA)	2.00	2.15		ug/Kg		108	70 - 132
Perfluoroheptanoic acid (PFHpA)	2.00	2.16		ug/Kg		108	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.19		ug/Kg		109	69 - 133
Perfluorononanoic acid (PFNA)	2.00	2.40		ug/Kg		120	72 - 129
Perfluorodecanoic acid (PFDA)	2.00	2.20		ug/Kg		110	69 - 133
Perfluoroundecanoic acid (PFUnA)	2.00	2.22		ug/Kg		111	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	2.26		ug/Kg		113	69 - 135

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCS 320-471897/2-A**  
**Matrix: Solid**  
**Analysis Batch: 472276**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 471897**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorotridecanoic acid (PFTriA)	2.00	2.11		ug/Kg		105	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	2.29		ug/Kg		114	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.94		ug/Kg		110	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	2.07		ug/Kg		114	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	2.01		ug/Kg		109	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.01		ug/Kg		101	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.19		ug/Kg		109	61 - 139
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid	1.86	2.25		ug/Kg		121	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.10		ug/Kg		105	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	2.27		ug/Kg		121	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	2.15		ug/Kg		114	79 - 139

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	70		50 - 150
13C4 PFHpA	77		50 - 150
13C4 PFOA	75		50 - 150
13C5 PFNA	75		50 - 150
13C2 PFDA	74		50 - 150
13C2 PFUnA	77		50 - 150
13C2 PFDoA	77		50 - 150
13C2 PFTeDA	73		50 - 150
13C3 PFBS	66		50 - 150
18O2 PFHxS	71		50 - 150
13C4 PFOS	68		50 - 150
d3-NMeFOSAA	79		50 - 150
d5-NEtFOSAA	81		50 - 150
13C3 HFPO-DA	72		50 - 150

**Lab Sample ID: 320-71360-42 MS**  
**Matrix: Solid**  
**Analysis Batch: 472276**

**Client Sample ID: SBIW19-1**  
**Prep Type: Total/NA**  
**Prep Batch: 471897**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	730	E	2.05	790	E 4	ug/Kg	⊛	2702	70 - 132
Perfluoroheptanoic acid (PFHpA)	170	E	2.05	173	E 4	ug/Kg	⊛	65	71 - 131
Perfluorooctanoic acid (PFOA)	1500	E	2.05	2030	E 4	ug/Kg	⊛	23587	69 - 133
Perfluorononanoic acid (PFNA)	43	E	2.05	60.5	E 4	ug/Kg	⊛	841	72 - 129
Perfluorodecanoic acid (PFDA)	120	E	2.05	110	E 4	ug/Kg	⊛	-442	69 - 133
Perfluoroundecanoic acid (PFUnA)	17		2.05	17.5	4	ug/Kg	⊛	46	64 - 136

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-71360-42 MS**

**Matrix: Solid**

**Analysis Batch: 472276**

**Client Sample ID: SBIW19-1**

**Prep Type: Total/NA**

**Prep Batch: 471897**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	32	E	2.05	33.4	E 4	ug/Kg	⊛	70	69 - 135
Perfluorotridecanoic acid (PFTriA)	5.9		2.05	8.36		ug/Kg	⊛	122	66 - 139
Perfluorotetradecanoic acid (PFTeA)	24	E	2.05	23.9	E 4	ug/Kg	⊛	4	69 - 133
Perfluorobutanesulfonic acid (PFBS)	180	E	1.81	210	E 4	ug/Kg	⊛	1418	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	3100	E	1.86	2910	E 4	ug/Kg	⊛	-1226 5	67 - 130
Perfluorooctanesulfonic acid (PFOS)	11000	E I	1.90	11500	E I 4	ug/Kg	⊛	48292	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.0		2.05	8.97	4	ug/Kg	⊛	0.9	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	12	F2	2.05	16.0	4	ug/Kg	⊛	179	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND	F1	1.91	3.37	F1	ug/Kg	⊛	177	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.05	2.00		ug/Kg	⊛	98	77 - 137
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	ND	F1	1.93	4.13	F1	ug/Kg	⊛	214	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	F1	1.93	0.734	F1	ug/Kg	⊛	38	79 - 139

Isotope Dilution	%Recovery	MS MS Qualifier	Limits
13C2 PFHxA	423	*5+	50 - 150
13C4 PFHpA	77		50 - 150
13C4 PFOA	43	*5-	50 - 150
13C5 PFNA	26	*5-	50 - 150
13C2 PFDA	133		50 - 150
13C2 PFUnA	393	*5+	50 - 150
13C2 PFDoA	170	*5+	50 - 150
13C2 PFTeDA	70		50 - 150
13C3 PFBS	885	*5+	50 - 150
18O2 PFHxS	213	*5+	50 - 150
13C4 PFOS	240	*5+	50 - 150
d3-NMeFOSAA	131		50 - 150
d5-NEtFOSAA	461	*5+	50 - 150
13C3 HFPO-DA	529	*5+	50 - 150

**Lab Sample ID: 320-71360-42 MSD**

**Matrix: Solid**

**Analysis Batch: 472276**

**Client Sample ID: SBIW19-1**

**Prep Type: Total/NA**

**Prep Batch: 471897**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Perfluorohexanoic acid (PFHxA)	730	E	2.06	694	E 4	ug/Kg	⊛	-1943	70 - 132	13	30
Perfluoroheptanoic acid (PFHpA)	170	E	2.06	200	E 4	ug/Kg	⊛	1337	71 - 131	14	30
Perfluorooctanoic acid (PFOA)	1500	E	2.06	1580	E 4	ug/Kg	⊛	1661	69 - 133	25	30
Perfluorononanoic acid (PFNA)	43	E	2.06	65.2	E 4	ug/Kg	⊛	1065	72 - 129	7	30
Perfluorodecanoic acid (PFDA)	120	E	2.06	108	E 4	ug/Kg	⊛	-525	69 - 133	2	30

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# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-71360-42 MSD**

**Matrix: Solid**

**Analysis Batch: 472276**

**Client Sample ID: SBIW19-1**

**Prep Type: Total/NA**

**Prep Batch: 471897**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	17		2.06	17.0	4	ug/Kg	⊛	18	64 - 136	3	30
Perfluorododecanoic acid (PFDoA)	32	E	2.06	29.5	E 4	ug/Kg	⊛	-117	69 - 135	12	30
Perfluorotridecanoic acid (PFTriA)	5.9		2.06	7.89		ug/Kg	⊛	99	66 - 139	6	30
Perfluorotetradecanoic acid (PFTeA)	24	E	2.06	19.6	4	ug/Kg	⊛	-207	69 - 133	20	30
Perfluorobutanesulfonic acid (PFBS)	180	E	1.82	190	E 4	ug/Kg	⊛	316	72 - 128	10	30
Perfluorohexanesulfonic acid (PFHxS)	3100	E	1.87	3370	E 4	ug/Kg	⊛	12002	67 - 130	14	30
Perfluorooctanesulfonic acid (PFOS)	11000	E I	1.91	11000	E I 4	ug/Kg	⊛	19649	68 - 136	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.0		2.06	7.26	4	ug/Kg	⊛	-82	63 - 144	21	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	12	F2	2.06	10.8	4 F2	ug/Kg	⊛	-78	61 - 139	39	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND	F1	1.92	3.44	F1	ug/Kg	⊛	179	75 - 135	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.06	1.82		ug/Kg	⊛	88	77 - 137	10	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	F1	1.94	3.76	F1	ug/Kg	⊛	194	76 - 136	9	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	F1	1.94	0.889	F1	ug/Kg	⊛	46	79 - 139	19	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	513	*5+	50 - 150
13C4 PFHpA	73		50 - 150
13C4 PFOA	59		50 - 150
13C5 PFNA	26	*5-	50 - 150
13C2 PFDA	149		50 - 150
13C2 PFUnA	432	*5+	50 - 150
13C2 PFDoA	192	*5+	50 - 150
13C2 PFTeDA	79		50 - 150
13C3 PFBS	999	*5+	50 - 150
18O2 PFHxS	195	*5+	50 - 150
13C4 PFOS	267	*5+	50 - 150
d3-NMeFOSAA	184	*5+	50 - 150
d5-NEtFOSAA	685	*5+	50 - 150
13C3 HFPO-DA	714	*5+	50 - 150

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL

**Lab Sample ID: 320-71360-10 MS**

**Matrix: Solid**

**Analysis Batch: 474422**

**Client Sample ID: SBTWP5-1**

**Prep Type: Total/NA**

**Prep Batch: 471686**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS) - DL	15		1.83	20.9	4	ug/Kg	⊛	323	68 - 136

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# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-71360-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL (Continued)

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C4 PFOS - DL	68		50 - 150

**Lab Sample ID: 320-71360-10 MSD**  
**Matrix: Solid**  
**Analysis Batch: 474422**

**Client Sample ID: SBTWP5-1**  
**Prep Type: Total/NA**  
**Prep Batch: 471686**

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Perfluorooctanesulfonic acid (PFOS) - DL	15		1.89	17.7	4	ug/Kg	⊛	143	68 - 136	17	30

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
13C4 PFOS - DL	67		50 - 150

## Method: D 2216 - Percent Moisture

**Lab Sample ID: 320-71360-1 DU**  
**Matrix: Solid**  
**Analysis Batch: 471629**

**Client Sample ID: SBMW1-1**  
**Prep Type: Total/NA**

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>DU Result</i>	<i>DU Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RPD</i>	<i>RPD Limit</i>
Percent Moisture	7.0		6.8		%		3	20
Percent Solids	93.0		93.2		%		0.3	20

**Lab Sample ID: 320-71360-21 DU**  
**Matrix: Solid**  
**Analysis Batch: 471630**

**Client Sample ID: SB10-1**  
**Prep Type: Total/NA**

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>DU Result</i>	<i>DU Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RPD</i>	<i>RPD Limit</i>
Percent Moisture	6.1		6.8		%		12	20
Percent Solids	93.9		93.2		%		0.8	20

# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## LCMS

### Prep Batch: 471686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-1	SBMW1-1	Total/NA	Solid	SHAKE	
320-71360-2	SBMW1-2	Total/NA	Solid	SHAKE	
320-71360-3	SBMW2-1	Total/NA	Solid	SHAKE	
320-71360-4	SBMW2-2	Total/NA	Solid	SHAKE	
320-71360-5	SBMW3-1	Total/NA	Solid	SHAKE	
320-71360-6	SBMW3-101	Total/NA	Solid	SHAKE	
320-71360-7	SBMW3-2	Total/NA	Solid	SHAKE	
320-71360-8	SBMW4-1	Total/NA	Solid	SHAKE	
320-71360-9	SBMW4-2	Total/NA	Solid	SHAKE	
320-71360-10	SBTWP5-1	Total/NA	Solid	SHAKE	
320-71360-10 - DL	SBTWP5-1	Total/NA	Solid	SHAKE	
MB 320-471686/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-471686/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-71360-10 MS	SBTWP5-1	Total/NA	Solid	SHAKE	
320-71360-10 MS - DL	SBTWP5-1	Total/NA	Solid	SHAKE	
320-71360-10 MSD - DL	SBTWP5-1	Total/NA	Solid	SHAKE	
320-71360-10 MSD	SBTWP5-1	Total/NA	Solid	SHAKE	

### Prep Batch: 471894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-11	SBTWP5-2	Total/NA	Solid	SHAKE	
320-71360-12 - DL	SBTWP5-102	Total/NA	Solid	SHAKE	
320-71360-12	SBTWP5-102	Total/NA	Solid	SHAKE	
320-71360-13	SBTWP6-1	Total/NA	Solid	SHAKE	
320-71360-14	SBTWP6-101	Total/NA	Solid	SHAKE	
320-71360-15	SBTWP7-1	Total/NA	Solid	SHAKE	
320-71360-16	SBTWP7-2	Total/NA	Solid	SHAKE	
320-71360-17	SBMW4-101	Total/NA	Solid	SHAKE	
320-71360-18	SB9-1	Total/NA	Solid	SHAKE	
320-71360-19	SB9-2	Total/NA	Solid	SHAKE	
320-71360-20	SBTWP6-2	Total/NA	Solid	SHAKE	
320-71360-21	SB10-1	Total/NA	Solid	SHAKE	
320-71360-22	SB10-2	Total/NA	Solid	SHAKE	
320-71360-23	SB11-1	Total/NA	Solid	SHAKE	
320-71360-24	SB11-2	Total/NA	Solid	SHAKE	
320-71360-25	SB12-1	Total/NA	Solid	SHAKE	
320-71360-26	SB12-2	Total/NA	Solid	SHAKE	
MB 320-471894/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-471894/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-71360-26 MS	SB12-2	Total/NA	Solid	SHAKE	
320-71360-26 MSD	SB12-2	Total/NA	Solid	SHAKE	

### Prep Batch: 471897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-27	SB13-1	Total/NA	Solid	SHAKE	
320-71360-28	SB13-2	Total/NA	Solid	SHAKE	
320-71360-29	SB14-1	Total/NA	Solid	SHAKE	
320-71360-30	SB14-2	Total/NA	Solid	SHAKE	
320-71360-31 - DL	SB15-1	Total/NA	Solid	SHAKE	
320-71360-31	SB15-1	Total/NA	Solid	SHAKE	
320-71360-32 - DL	SB15-2	Total/NA	Solid	SHAKE	

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# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## LCMS (Continued)

### Prep Batch: 471897 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-32	SB15-2	Total/NA	Solid	SHAKE	
320-71360-33	SB16-1	Total/NA	Solid	SHAKE	
320-71360-34	SB16-2	Total/NA	Solid	SHAKE	
320-71360-35	SB17-1	Total/NA	Solid	SHAKE	
320-71360-36 - RA	SB17-2	Total/NA	Solid	SHAKE	
320-71360-36	SB17-2	Total/NA	Solid	SHAKE	
320-71360-37	SB18-1	Total/NA	Solid	SHAKE	
320-71360-37 - RA	SB18-1	Total/NA	Solid	SHAKE	
320-71360-38 - RA	SB18-2	Total/NA	Solid	SHAKE	
320-71360-38	SB18-2	Total/NA	Solid	SHAKE	
320-71360-39	SBIW20-1	Total/NA	Solid	SHAKE	
320-71360-40	SBIW20-101	Total/NA	Solid	SHAKE	
320-71360-41 - DL	SBIW20-2	Total/NA	Solid	SHAKE	
320-71360-41 - RA	SBIW20-2	Total/NA	Solid	SHAKE	
320-71360-41	SBIW20-2	Total/NA	Solid	SHAKE	
320-71360-42	SBIW19-1	Total/NA	Solid	SHAKE	
320-71360-43	SBIW19-2	Total/NA	Solid	SHAKE	
320-71360-43 - DL	SBIW19-2	Total/NA	Solid	SHAKE	
320-71360-43 - RA	SBIW19-2	Total/NA	Solid	SHAKE	
MB 320-471897/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-471897/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-71360-42 MS	SBIW19-1	Total/NA	Solid	SHAKE	
320-71360-42 MSD	SBIW19-1	Total/NA	Solid	SHAKE	

### Analysis Batch: 472276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-27	SB13-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-28	SB13-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-29	SB14-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-30	SB14-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-31	SB15-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-32	SB15-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-33	SB16-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-34	SB16-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-36	SB17-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-37	SB18-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-38	SB18-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-39	SBIW20-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-40	SBIW20-101	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-41	SBIW20-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-42	SBIW19-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-43	SBIW19-2	Total/NA	Solid	EPA 537(Mod)	471897
MB 320-471897/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	471897
LCS 320-471897/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-42 MS	SBIW19-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-42 MSD	SBIW19-1	Total/NA	Solid	EPA 537(Mod)	471897

### Analysis Batch: 472581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-11	SBTWP5-2	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-12	SBTWP5-102	Total/NA	Solid	EPA 537(Mod)	471894

Eurofins TestAmerica, Sacramento



# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## LCMS (Continued)

### Analysis Batch: 472581 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-13	SBTWP6-1	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-14	SBTWP6-101	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-15	SBTWP7-1	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-16	SBTWP7-2	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-17	SBMW4-101	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-18	SB9-1	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-19	SB9-2	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-20	SBTWP6-2	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-21	SB10-1	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-22	SB10-2	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-23	SB11-1	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-24	SB11-2	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-25	SB12-1	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-26	SB12-2	Total/NA	Solid	EPA 537(Mod)	471894
MB 320-471894/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	471894
LCS 320-471894/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-26 MS	SB12-2	Total/NA	Solid	EPA 537(Mod)	471894
320-71360-26 MSD	SB12-2	Total/NA	Solid	EPA 537(Mod)	471894

### Analysis Batch: 473142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-1	SBMW1-1	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-2	SBMW1-2	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-3	SBMW2-1	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-4	SBMW2-2	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-5	SBMW3-1	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-6	SBMW3-101	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-7	SBMW3-2	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-8	SBMW4-1	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-9	SBMW4-2	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-10	SBTWP5-1	Total/NA	Solid	EPA 537(Mod)	471686
MB 320-471686/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	471686
LCS 320-471686/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-10 MS	SBTWP5-1	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-10 MSD	SBTWP5-1	Total/NA	Solid	EPA 537(Mod)	471686

### Analysis Batch: 473839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-12 - DL	SBTWP5-102	Total/NA	Solid	EPA 537(Mod)	471894

### Analysis Batch: 474422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-10 - DL	SBTWP5-1	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-10 MS - DL	SBTWP5-1	Total/NA	Solid	EPA 537(Mod)	471686
320-71360-10 MSD - DL	SBTWP5-1	Total/NA	Solid	EPA 537(Mod)	471686

### Analysis Batch: 474622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-31 - DL	SB15-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-32 - DL	SB15-2	Total/NA	Solid	EPA 537(Mod)	471897

Eurofins TestAmerica, Sacramento

# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## LCMS

### Analysis Batch: 474986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-36 - RA	SB17-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-37 - RA	SB18-1	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-38 - RA	SB18-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-41 - RA	SBIW20-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-43 - RA	SBIW19-2	Total/NA	Solid	EPA 537(Mod)	471897

### Analysis Batch: 475414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-35	SB17-1	Total/NA	Solid	EPA 537(Mod)	471897

### Analysis Batch: 475576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-41 - DL	SBIW20-2	Total/NA	Solid	EPA 537(Mod)	471897
320-71360-43 - DL	SBIW19-2	Total/NA	Solid	EPA 537(Mod)	471897

## General Chemistry

### Analysis Batch: 471555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-41	SBIW20-2	Total/NA	Solid	D 2216	
320-71360-42	SBIW19-1	Total/NA	Solid	D 2216	
320-71360-43	SBIW19-2	Total/NA	Solid	D 2216	

### Analysis Batch: 471629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-1	SBMW1-1	Total/NA	Solid	D 2216	
320-71360-2	SBMW1-2	Total/NA	Solid	D 2216	
320-71360-3	SBMW2-1	Total/NA	Solid	D 2216	
320-71360-4	SBMW2-2	Total/NA	Solid	D 2216	
320-71360-5	SBMW3-1	Total/NA	Solid	D 2216	
320-71360-6	SBMW3-101	Total/NA	Solid	D 2216	
320-71360-7	SBMW3-2	Total/NA	Solid	D 2216	
320-71360-8	SBMW4-1	Total/NA	Solid	D 2216	
320-71360-9	SBMW4-2	Total/NA	Solid	D 2216	
320-71360-10	SBTWP5-1	Total/NA	Solid	D 2216	
320-71360-11	SBTWP5-2	Total/NA	Solid	D 2216	
320-71360-12	SBTWP5-102	Total/NA	Solid	D 2216	
320-71360-13	SBTWP6-1	Total/NA	Solid	D 2216	
320-71360-14	SBTWP6-101	Total/NA	Solid	D 2216	
320-71360-15	SBTWP7-1	Total/NA	Solid	D 2216	
320-71360-16	SBTWP7-2	Total/NA	Solid	D 2216	
320-71360-17	SBMW4-101	Total/NA	Solid	D 2216	
320-71360-18	SB9-1	Total/NA	Solid	D 2216	
320-71360-19	SB9-2	Total/NA	Solid	D 2216	
320-71360-20	SBTWP6-2	Total/NA	Solid	D 2216	
320-71360-1 DU	SBMW1-1	Total/NA	Solid	D 2216	

### Analysis Batch: 471630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-21	SB10-1	Total/NA	Solid	D 2216	
320-71360-22	SB10-2	Total/NA	Solid	D 2216	

Eurofins TestAmerica, Sacramento

# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## General Chemistry (Continued)

### Analysis Batch: 471630 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-71360-23	SB11-1	Total/NA	Solid	D 2216	
320-71360-24	SB11-2	Total/NA	Solid	D 2216	
320-71360-25	SB12-1	Total/NA	Solid	D 2216	
320-71360-26	SB12-2	Total/NA	Solid	D 2216	
320-71360-27	SB13-1	Total/NA	Solid	D 2216	
320-71360-28	SB13-2	Total/NA	Solid	D 2216	
320-71360-29	SB14-1	Total/NA	Solid	D 2216	
320-71360-30	SB14-2	Total/NA	Solid	D 2216	
320-71360-31	SB15-1	Total/NA	Solid	D 2216	
320-71360-32	SB15-2	Total/NA	Solid	D 2216	
320-71360-33	SB16-1	Total/NA	Solid	D 2216	
320-71360-34	SB16-2	Total/NA	Solid	D 2216	
320-71360-35	SB17-1	Total/NA	Solid	D 2216	
320-71360-36	SB17-2	Total/NA	Solid	D 2216	
320-71360-37	SB18-1	Total/NA	Solid	D 2216	
320-71360-38	SB18-2	Total/NA	Solid	D 2216	
320-71360-39	SBIW20-1	Total/NA	Solid	D 2216	
320-71360-40	SBIW20-101	Total/NA	Solid	D 2216	
320-71360-21 DU	SB10-1	Total/NA	Solid	D 2216	

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW1-1**

**Lab Sample ID: 320-71360-1**

**Date Collected: 03/11/21 14:15**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SBMW1-1**

**Lab Sample ID: 320-71360-1**

**Date Collected: 03/11/21 14:15**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.28 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 20:00	K1S	TAL SAC

**Client Sample ID: SBMW1-2**

**Lab Sample ID: 320-71360-2**

**Date Collected: 03/11/21 15:10**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SBMW1-2**

**Lab Sample ID: 320-71360-2**

**Date Collected: 03/11/21 15:10**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 85.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.03 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 20:09	K1S	TAL SAC

**Client Sample ID: SBMW2-1**

**Lab Sample ID: 320-71360-3**

**Date Collected: 03/12/21 12:37**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SBMW2-1**

**Lab Sample ID: 320-71360-3**

**Date Collected: 03/12/21 12:37**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 87.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.08 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 20:18	K1S	TAL SAC

**Client Sample ID: SBMW2-2**

**Lab Sample ID: 320-71360-4**

**Date Collected: 03/12/21 13:22**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBMW2-2**

**Lab Sample ID: 320-71360-4**

**Date Collected: 03/12/21 13:22**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 20:28	K1S	TAL SAC

**Client Sample ID: SBMW3-1**

**Lab Sample ID: 320-71360-5**

**Date Collected: 03/11/21 10:02**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SBMW3-1**

**Lab Sample ID: 320-71360-5**

**Date Collected: 03/11/21 10:02**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 80.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.00 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 20:37	K1S	TAL SAC

**Client Sample ID: SBMW3-101**

**Lab Sample ID: 320-71360-6**

**Date Collected: 03/11/21 09:52**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SBMW3-101**

**Lab Sample ID: 320-71360-6**

**Date Collected: 03/11/21 09:52**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 85.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.45 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 20:46	K1S	TAL SAC

**Client Sample ID: SBMW3-2**

**Lab Sample ID: 320-71360-7**

**Date Collected: 03/11/21 11:05**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SBMW3-2

Date Collected: 03/11/21 11:05

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-7

Matrix: Solid

Percent Solids: 95.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.55 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 20:56	K1S	TAL SAC

## Client Sample ID: SBMW4-1

Date Collected: 03/13/21 10:40

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SBMW4-1

Date Collected: 03/13/21 10:40

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-8

Matrix: Solid

Percent Solids: 83.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.25 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 21:24	K1S	TAL SAC

## Client Sample ID: SBMW4-2

Date Collected: 03/13/21 11:25

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SBMW4-2

Date Collected: 03/13/21 11:25

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-9

Matrix: Solid

Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.40 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 21:33	K1S	TAL SAC

## Client Sample ID: SBTWP5-1

Date Collected: 03/12/21 10:30

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SBTWP5-1

Lab Sample ID: 320-71360-10

Date Collected: 03/12/21 10:30

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 93.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			473142	03/22/21 21:43	K1S	TAL SAC
Total/NA	Prep	SHAKE	DL		5.35 g	10.00 mL	471686	03/18/21 12:20	GWO	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	5			474422	03/28/21 00:10	S1M	TAL SAC

## Client Sample ID: SBTWP5-2

Lab Sample ID: 320-71360-11

Date Collected: 03/12/21 10:45

Matrix: Solid

Date Received: 03/17/21 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SBTWP5-2

Lab Sample ID: 320-71360-11

Date Collected: 03/12/21 10:45

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 88.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.32 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 15:06	RS1	TAL SAC

## Client Sample ID: SBTWP5-102

Lab Sample ID: 320-71360-12

Date Collected: 03/12/21 10:35

Matrix: Solid

Date Received: 03/17/21 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SBTWP5-102

Lab Sample ID: 320-71360-12

Date Collected: 03/12/21 10:35

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 87.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 15:15	RS1	TAL SAC
Total/NA	Prep	SHAKE	DL		5.22 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			473839	03/25/21 19:01	S1M	TAL SAC

## Client Sample ID: SBTWP6-1

Lab Sample ID: 320-71360-13

Date Collected: 03/13/21 12:25

Matrix: Solid

Date Received: 03/17/21 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP6-1**

**Lab Sample ID: 320-71360-13**

**Date Collected: 03/13/21 12:25**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 94.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 15:24	RS1	TAL SAC

**Client Sample ID: SBTWP6-101**

**Lab Sample ID: 320-71360-14**

**Date Collected: 03/13/21 12:15**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SBTWP6-101**

**Lab Sample ID: 320-71360-14**

**Date Collected: 03/13/21 12:15**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.08 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 18:13	RS1	TAL SAC

**Client Sample ID: SBTWP7-1**

**Lab Sample ID: 320-71360-15**

**Date Collected: 03/13/21 09:15**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SBTWP7-1**

**Lab Sample ID: 320-71360-15**

**Date Collected: 03/13/21 09:15**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 93.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.06 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 15:34	RS1	TAL SAC

**Client Sample ID: SBTWP7-2**

**Lab Sample ID: 320-71360-16**

**Date Collected: 03/13/21 10:00**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC



# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBTWP7-2**

**Lab Sample ID: 320-71360-16**

**Date Collected: 03/13/21 10:00**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 94.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 15:43	RS1	TAL SAC

**Client Sample ID: SBMW4-101**

**Lab Sample ID: 320-71360-17**

**Date Collected: 03/13/21 10:30**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SBMW4-101**

**Lab Sample ID: 320-71360-17**

**Date Collected: 03/13/21 10:30**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 87.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.28 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 15:53	RS1	TAL SAC

**Client Sample ID: SB9-1**

**Lab Sample ID: 320-71360-18**

**Date Collected: 03/11/21 16:20**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SB9-1**

**Lab Sample ID: 320-71360-18**

**Date Collected: 03/11/21 16:20**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 91.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 16:02	RS1	TAL SAC

**Client Sample ID: SB9-2**

**Lab Sample ID: 320-71360-19**

**Date Collected: 03/11/21 16:48**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SB9-2

Date Collected: 03/11/21 16:48

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-19

Matrix: Solid

Percent Solids: 91.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.17 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 16:11	RS1	TAL SAC

## Client Sample ID: SBTWP6-2

Date Collected: 03/13/21 12:45

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-20

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471629	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SBTWP6-2

Date Collected: 03/13/21 12:45

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-20

Matrix: Solid

Percent Solids: 94.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 16:30	RS1	TAL SAC

## Client Sample ID: SB10-1

Date Collected: 03/10/21 17:00

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-21

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SB10-1

Date Collected: 03/10/21 17:00

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-21

Matrix: Solid

Percent Solids: 93.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 16:39	RS1	TAL SAC

## Client Sample ID: SB10-2

Date Collected: 03/10/21 17:50

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-22

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SB10-2

Date Collected: 03/10/21 17:50

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-22

Matrix: Solid

Percent Solids: 95.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.48 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 16:49	RS1	TAL SAC

## Client Sample ID: SB11-1

Date Collected: 03/12/21 17:30

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-23

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SB11-1

Date Collected: 03/12/21 17:30

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-23

Matrix: Solid

Percent Solids: 93.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.37 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 16:58	RS1	TAL SAC

## Client Sample ID: SB11-2

Date Collected: 03/12/21 17:51

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-24

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SB11-2

Date Collected: 03/12/21 17:51

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-24

Matrix: Solid

Percent Solids: 93.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.33 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 17:08	RS1	TAL SAC

## Client Sample ID: SB12-1

Date Collected: 03/10/21 14:12

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-25

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB12-1**  
**Date Collected: 03/10/21 14:12**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-25**  
**Matrix: Solid**  
**Percent Solids: 85.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.09 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 17:17	RS1	TAL SAC

**Client Sample ID: SB12-2**  
**Date Collected: 03/10/21 14:55**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-26**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SB12-2**  
**Date Collected: 03/10/21 14:55**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-26**  
**Matrix: Solid**  
**Percent Solids: 93.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.17 g	10.00 mL	471894	03/18/21 19:19	PV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472581	03/21/21 17:26	RS1	TAL SAC

**Client Sample ID: SB13-1**  
**Date Collected: 03/10/21 15:37**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-27**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SB13-1**  
**Date Collected: 03/10/21 15:37**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-27**  
**Matrix: Solid**  
**Percent Solids: 89.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.04 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 08:25	D1R	TAL SAC

**Client Sample ID: SB13-2**  
**Date Collected: 03/10/21 16:15**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-28**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB13-2**  
**Date Collected: 03/10/21 16:15**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-28**  
**Matrix: Solid**  
**Percent Solids: 96.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.01 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 08:35	D1R	TAL SAC

**Client Sample ID: SB14-1**  
**Date Collected: 03/12/21 09:18**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-29**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SB14-1**  
**Date Collected: 03/12/21 09:18**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-29**  
**Matrix: Solid**  
**Percent Solids: 93.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.08 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 08:44	D1R	TAL SAC

**Client Sample ID: SB14-2**  
**Date Collected: 03/12/21 09:45**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-30**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SB14-2**  
**Date Collected: 03/12/21 09:45**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-30**  
**Matrix: Solid**  
**Percent Solids: 85.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 08:53	D1R	TAL SAC

**Client Sample ID: SB15-1**  
**Date Collected: 03/11/21 12:15**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-31**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB15-1**  
**Date Collected: 03/11/21 12:15**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-31**  
**Matrix: Solid**  
**Percent Solids: 95.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.04 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 09:03	D1R	TAL SAC
Total/NA	Prep	SHAKE	DL		5.04 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			474622	03/29/21 11:40	AEC	TAL SAC

**Client Sample ID: SB15-2**  
**Date Collected: 03/11/21 13:05**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-32**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SB15-2**  
**Date Collected: 03/11/21 13:05**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-32**  
**Matrix: Solid**  
**Percent Solids: 95.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 09:12	D1R	TAL SAC
Total/NA	Prep	SHAKE	DL		5.11 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			474622	03/29/21 11:50	AEC	TAL SAC

**Client Sample ID: SB16-1**  
**Date Collected: 03/12/21 15:00**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-33**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SB16-1**  
**Date Collected: 03/12/21 15:00**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-33**  
**Matrix: Solid**  
**Percent Solids: 93.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 09:22	D1R	TAL SAC

**Client Sample ID: SB16-2**  
**Date Collected: 03/12/21 15:52**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-34**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SB16-2

Date Collected: 03/12/21 15:52

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-34

Matrix: Solid

Percent Solids: 91.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 09:31	D1R	TAL SAC

## Client Sample ID: SB17-1

Date Collected: 03/12/21 11:30

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-35

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SB17-1

Date Collected: 03/12/21 11:30

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-35

Matrix: Solid

Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.24 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			475414	03/31/21 13:54	AEC	TAL SAC

## Client Sample ID: SB17-2

Date Collected: 03/12/21 11:50

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-36

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

## Client Sample ID: SB17-2

Date Collected: 03/12/21 11:50

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-36

Matrix: Solid

Percent Solids: 97.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 10:08	D1R	TAL SAC
Total/NA	Prep	SHAKE	RA		5.35 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	RA	1			474986	03/30/21 16:03	S1M	TAL SAC

## Client Sample ID: SB18-1

Date Collected: 03/12/21 16:33

Date Received: 03/17/21 11:00

## Lab Sample ID: 320-71360-37

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SB18-1**  
**Date Collected: 03/12/21 16:33**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-37**  
**Matrix: Solid**  
**Percent Solids: 93.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 10:18	D1R	TAL SAC
Total/NA	Prep	SHAKE	RA		5.22 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	RA	1			474986	03/30/21 16:13	S1M	TAL SAC

**Client Sample ID: SB18-2**  
**Date Collected: 03/12/21 16:55**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-38**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SB18-2**  
**Date Collected: 03/12/21 16:55**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-38**  
**Matrix: Solid**  
**Percent Solids: 96.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 10:27	D1R	TAL SAC
Total/NA	Prep	SHAKE	RA		5.21 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	RA	1			474986	03/30/21 16:22	S1M	TAL SAC

**Client Sample ID: SBIW20-1**  
**Date Collected: 03/15/21 13:35**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-39**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC

**Client Sample ID: SBIW20-1**  
**Date Collected: 03/15/21 13:35**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-39**  
**Matrix: Solid**  
**Percent Solids: 84.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 10:36	D1R	TAL SAC

**Client Sample ID: SBIW20-101**  
**Date Collected: 03/15/21 13:25**  
**Date Received: 03/17/21 11:00**

**Lab Sample ID: 320-71360-40**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471630	03/18/21 11:30	TCS	TAL SAC



# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Client Sample ID: SBIW20-101

Lab Sample ID: 320-71360-40

Date Collected: 03/15/21 13:25

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 85.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.01 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 10:46	D1R	TAL SAC

## Client Sample ID: SBIW20-2

Lab Sample ID: 320-71360-41

Date Collected: 03/15/21 13:40

Matrix: Solid

Date Received: 03/17/21 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471555	03/18/21 10:26	TCS	TAL SAC

## Client Sample ID: SBIW20-2

Lab Sample ID: 320-71360-41

Date Collected: 03/15/21 13:40

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 90.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 10:55	D1R	TAL SAC
Total/NA	Prep	SHAKE	RA		5.27 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	RA	1			474986	03/30/21 16:32	S1M	TAL SAC
Total/NA	Prep	SHAKE	DL		5.27 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			475576	03/31/21 15:09	AEC	TAL SAC

## Client Sample ID: SBIW19-1

Lab Sample ID: 320-71360-42

Date Collected: 03/15/21 13:05

Matrix: Solid

Date Received: 03/17/21 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471555	03/18/21 10:26	TCS	TAL SAC

## Client Sample ID: SBIW19-1

Lab Sample ID: 320-71360-42

Date Collected: 03/15/21 13:05

Matrix: Solid

Date Received: 03/17/21 11:00

Percent Solids: 94.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.07 g	10.00 mL	471897	03/18/21 19:24	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 11:04	D1R	TAL SAC

## Client Sample ID: SBIW19-2

Lab Sample ID: 320-71360-43

Date Collected: 03/15/21 13:10

Matrix: Solid

Date Received: 03/17/21 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			471555	03/18/21 10:26	TCS	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-71360-1

**Client Sample ID: SBIW19-2**

**Lab Sample ID: 320-71360-43**

**Date Collected: 03/15/21 13:10**

**Matrix: Solid**

**Date Received: 03/17/21 11:00**

**Percent Solids: 94.5**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.00 mL	471897	03/18/21 19:37	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			472276	03/20/21 11:51	D1R	TAL SAC
Total/NA	Prep	SHAKE	RA		5.29 g	10.00 mL	471897	03/18/21 19:37	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	RA	1			474986	03/30/21 16:41	S1M	TAL SAC
Total/NA	Prep	SHAKE	DL		5.29 g	10.00 mL	471897	03/18/21 19:37	FX	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			475576	03/31/21 15:18	AEC	TAL SAC

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Accreditation/Certification Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

## Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
D 2216		Solid	Percent Moisture
D 2216		Solid	Percent Solids

# Method Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.3, Table B-15	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

**Protocol References:**

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Sample Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-71360-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-71360-1	SBMW1-1	Solid	03/11/21 14:15	03/17/21 11:00	
320-71360-2	SBMW1-2	Solid	03/11/21 15:10	03/17/21 11:00	
320-71360-3	SBMW2-1	Solid	03/12/21 12:37	03/17/21 11:00	
320-71360-4	SBMW2-2	Solid	03/12/21 13:22	03/17/21 11:00	
320-71360-5	SBMW3-1	Solid	03/11/21 10:02	03/17/21 11:00	
320-71360-6	SBMW3-101	Solid	03/11/21 09:52	03/17/21 11:00	
320-71360-7	SBMW3-2	Solid	03/11/21 11:05	03/17/21 11:00	
320-71360-8	SBMW4-1	Solid	03/13/21 10:40	03/17/21 11:00	
320-71360-9	SBMW4-2	Solid	03/13/21 11:25	03/17/21 11:00	
320-71360-10	SBTWP5-1	Solid	03/12/21 10:30	03/17/21 11:00	
320-71360-11	SBTWP5-2	Solid	03/12/21 10:45	03/17/21 11:00	
320-71360-12	SBTWP5-102	Solid	03/12/21 10:35	03/17/21 11:00	
320-71360-13	SBTWP6-1	Solid	03/13/21 12:25	03/17/21 11:00	
320-71360-14	SBTWP6-101	Solid	03/13/21 12:15	03/17/21 11:00	
320-71360-15	SBTWP7-1	Solid	03/13/21 09:15	03/17/21 11:00	
320-71360-16	SBTWP7-2	Solid	03/13/21 10:00	03/17/21 11:00	
320-71360-17	SBMW4-101	Solid	03/13/21 10:30	03/17/21 11:00	
320-71360-18	SB9-1	Solid	03/11/21 16:20	03/17/21 11:00	
320-71360-19	SB9-2	Solid	03/11/21 16:48	03/17/21 11:00	
320-71360-20	SBTWP6-2	Solid	03/13/21 12:45	03/17/21 11:00	
320-71360-21	SB10-1	Solid	03/10/21 17:00	03/17/21 11:00	
320-71360-22	SB10-2	Solid	03/10/21 17:50	03/17/21 11:00	
320-71360-23	SB11-1	Solid	03/12/21 17:30	03/17/21 11:00	
320-71360-24	SB11-2	Solid	03/12/21 17:51	03/17/21 11:00	
320-71360-25	SB12-1	Solid	03/10/21 14:12	03/17/21 11:00	
320-71360-26	SB12-2	Solid	03/10/21 14:55	03/17/21 11:00	
320-71360-27	SB13-1	Solid	03/10/21 15:37	03/17/21 11:00	
320-71360-28	SB13-2	Solid	03/10/21 16:15	03/17/21 11:00	
320-71360-29	SB14-1	Solid	03/12/21 09:18	03/17/21 11:00	
320-71360-30	SB14-2	Solid	03/12/21 09:45	03/17/21 11:00	
320-71360-31	SB15-1	Solid	03/11/21 12:15	03/17/21 11:00	
320-71360-32	SB15-2	Solid	03/11/21 13:05	03/17/21 11:00	
320-71360-33	SB16-1	Solid	03/12/21 15:00	03/17/21 11:00	
320-71360-34	SB16-2	Solid	03/12/21 15:52	03/17/21 11:00	
320-71360-35	SB17-1	Solid	03/12/21 11:30	03/17/21 11:00	
320-71360-36	SB17-2	Solid	03/12/21 11:50	03/17/21 11:00	
320-71360-37	SB18-1	Solid	03/12/21 16:33	03/17/21 11:00	
320-71360-38	SB18-2	Solid	03/12/21 16:55	03/17/21 11:00	
320-71360-39	SBIW20-1	Solid	03/15/21 13:35	03/17/21 11:00	
320-71360-40	SBIW20-101	Solid	03/15/21 13:25	03/17/21 11:00	
320-71360-41	SBIW20-2	Solid	03/15/21 13:40	03/17/21 11:00	
320-71360-42	SBIW19-1	Solid	03/15/21 13:05	03/17/21 11:00	
320-71360-43	SBIW19-2	Solid	03/15/21 13:10	03/17/21 11:00	

# CHAIN-OF-CUSTODY RECORD

Laboratory Page 1 of 5  
 Test America  
 Attn: David Altrucker

Analytical Methods (include preservative if used)

Turn Around Time:  
 Normal  Rush  
 Please Specify

Quote No: \_\_\_\_\_

J-Flags:  Yes  No

Sample Identity	Lab No.	Time	Date Sampled	Remarks/Matrix Composition/Grab? Sample Containers
SBMW1-1		1456	3/11/21	X PFASx18 (537-1) Soil 320-71360 Chain of Custody
SBMW1-2		1510	3/11/21	
SBMW2-1		1237	3/12/21	
SBMW2-2		1322	3/12/21	
SBMW3-1		1002	3/11/21	
SBMW3-101		952	↓	
SBMW3-2		1105	↓	
SBMW4-1		1040	3/13/21	
SBMW4-2		1125	3/13/21	
SBTWPS-1		1030	3/12/21	

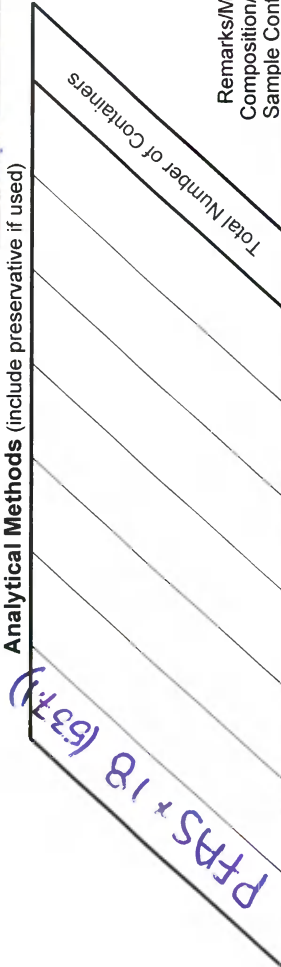
Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Number: 103311-009	Total No. of Containers: 43	Signature: <i>Theresa White</i>	Signature: _____	Signature: _____
Name: Cordora SREB	COC Seals/Intact? Y/N/NA	Printed Name: Theresa White	Printed Name: _____	Printed Name: _____
Contact: NEW	Received Good Cond./Cold	Date: 3/11/21	Date: _____	Date: _____
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temp: _____	Company: Shannon + Wilson	Company: _____	Company: _____
Sampler: RLW, DHF	Delivery Method: GadsdenK	Received By: 1.	Received By: 2.	Received By: 3.
Notes:				
Signature: <i>Salvador Ortega</i>				
Printed Name: Salvador Ortega				
Date: 3/17/21				
Signature: _____				
Printed Name: _____				
Date: _____				
Company: _____				

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file



# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)



Turn Around Time:  Normal  Rush  
 Please Specify

Quote No: \_\_\_\_\_

J-Flags:  Yes  No

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
SB TWP5 - 2		1045	3/12/21	X	Soil
SB TWP5 - 102		1035	3/12/21		
SB TWP6 - 1		1245	3/13/21		
SB TWP6 - 101		1215			
SB TWP7 - 1		915			
SB TWP7 - 2		1000			
SB MW4 - 101		1030			
SB 9 - 1		1620	3/11/21		
SB 9 - 2		1648	3/11/21		
SB TWP6 - 2		1245	3/13/21		

Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Number: 103311-009	Total No. of Containers: 43	Signature: <u>Maheed Wally</u>	Signature: _____	Signature: _____
Name: Cordova SREB	COC Seals/Intact? Y/N/NA	Printed Name: <u>Rachel Willis</u>	Printed Name: _____	Printed Name: _____
Contact: VGW	Received Good Cond./Cold	Date: <u>3/16/21</u>	Date: _____	Date: _____
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temp: _____	Company: <u>Shannon + Wilson</u>	Company: _____	Company: _____
Sampler: <u>RLW, DHF</u>	Delivery Method: <u>Goldstrenk</u>	Received By: 1. Signature: _____	Received By: 2. Signature: _____	Received By: 3. Signature: _____
Notes:		Time: <u>1100</u>	Time: _____	Time: _____
Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report		Printed Name: <u>Silverstein</u>	Printed Name: _____	Printed Name: _____
Yellow - w/shipment - for consignee files		Date: <u>3/17/21</u>	Date: _____	Date: _____
Pink - Shannon & Wilson - job file		Company: _____	Company: _____	Company: _____



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# CHAIN-OF-CUSTODY RECORD

Laboratory Test America Page 3 of 5  
Attn: David Altacker

Analytical Methods (include preservative if used)

PFAS x 10 (537)	X	Soil	Total Number of Containers	

Remarks/Matrix Composition/Grab? Sample Containers

Turn Around Time:  Normal  Rush  
Please Specify

Quote No: \_\_\_\_\_

J-Flags:  Yes  No

Sample Identity	Lab No.	Time	Date Sampled	Remarks/Matrix Composition/Grab? Sample Containers
SB10-1		1700	3/10/21	X
SB10-2		1750	3/10/21	
SB11-1		1730	3/12/21	
SB11-2		1751	3/12/21	
SB12-1		1412	3/10/21	
SB12-2		1455		
SB13-1		1537		
SB13-2		1615		
SB14-1		918	3/12/21	
SB14-2		945	3/12/21	

Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Number: <u>103311-009</u>	Total No. of Containers: <u>43</u>	Signature: <u>Rachel Wilks</u>	Signature: _____	Signature: _____
Name: <u>Cordora SEEB</u>	COC Seals/Intact? <u>Y/N/NA</u>	Printed Name: <u>Rachel Wilks</u>	Printed Name: _____	Printed Name: _____
Contact: <u>VEW</u>	Received Good Cond./Cold Temp: _____	Date: <u>3/12/21</u>	Date: _____	Date: _____
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Delivery Method: <u>Goldstrock</u>	Company: <u>Shannon + Wilson</u>	Company: _____	Company: _____
Sampler: <u>RLW, DHF</u>	Notes:	Received By: 1.	Received By: 2.	Received By: 3.
		Signature: _____	Signature: _____	Signature: _____
		Printed Name: _____	Printed Name: _____	Printed Name: _____
		Date: <u>3/12/21</u>	Date: _____	Date: _____
		Company: _____	Company: _____	Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
Yellow - w/shipment - for consignee files  
Pink - Shannon & Wilson - job file







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# CHAIN-OF-CUSTODY RECORD

Laboratory Test America Page 4 of 5  
Attn: David Attker

Analytical Methods (include preservative if used)

Quote No: \_\_\_\_\_  
J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers		Remarks/Matrix Composition/Grab? Sample Containers
				1	2	
SB15-1		1215	3/11/21	1	1	Soil
SB15-2		1305	3/11/21	1	1	
SB16-1		1500	3/12/21	1	1	
SB16-2		1552		1	1	
SB17-1		1130		1	1	
SB17-2		1150		1	1	
SB18-1		1633		1	1	
SB18-2		1655		1	1	

PEAS KIB (S37) (1-125) 81K544

**Project Information**  
Number: 103311-009  
Name: Cordova SREB  
Contact: VEW  
Ongoing Project? Yes  No   
Sampler: RLW, DHF

**Sample Receipt**  
Total No. of Containers: 43  
COC Seals/Intact? Y/N/NA  
Received Good Cond./Cold Temp: \_\_\_\_\_  
Delivery Method: Goldstreak

**Notes:**  
Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
Yellow - w/shipment - for consignee files  
Pink - Shannon & Wilson - job file

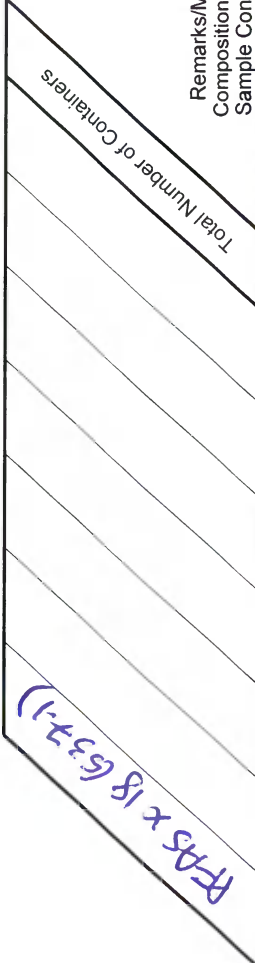
Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Rachel Willis</u> Printed Name: <u>Rachel Willis</u> Company: <u>Shannon + Wilson</u>	Signature: _____ Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: <u>9:30</u> Date: <u>3/16/21</u>	Time: _____ Date: _____	Time: _____ Date: _____
Received By: 1. Signature: _____ Printed Name: <u>Salvador Lopez</u> Company: <u>Corbic</u>	Received By: 2. Signature: _____ Printed Name: _____ Company: _____	Received By: 3. Signature: _____ Printed Name: _____ Company: _____
Time: <u>11:00</u> Date: <u>3/12/21</u>	Time: _____ Date: _____	Time: _____ Date: _____



# CHAIN-OF-CUSTODY RECORD

Laboratory TestAmerica  
 Attn: Daniel Auttucker

Analytical Methods (include preservative if used)



Quote No: \_\_\_\_\_  
 J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
 Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Remarks/Matrix Composition/Grab? Sample Containers
SB IW 20-1		1335	3/15/21	Soil * high PID
SB IW 20-101		1325		* high PID
SB IW 20-2		1340		* high PID
SB IW 19-1		1305		
SB IW 19-2		1310		

**Project Information**  
 Number: 10331-009  
 Name: Cardova SLEB  
 Contact: VEW  
 Ongoing Project? Yes  No   
 Sampler: DHF + PLW

**Sample Receipt**  
 Total No. of Containers: 43  
 COC Seals/Intact? Y/N/NA \_\_\_\_\_  
 Received Good Cond./Cold \_\_\_\_\_  
 Temp: \_\_\_\_\_  
 Delivery Method: Goldstream

**Notes:**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Maund Wilbur</u> Printed Name: <u>Rachel Willis</u> Company: <u>Shannon + Wilson</u>	Signature: _____ Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: <u>9:30</u> Date: <u>3/15/21</u>	Time: _____ Date: _____	Time: _____ Date: _____
Received By: 1. Signature: _____ Printed Name: _____ Company: _____	Received By: 2. Signature: _____ Printed Name: _____ Company: _____	Received By: 3. Signature: _____ Printed Name: _____ Company: _____
Time: <u>11:00</u> Date: <u>3/17/21</u>	Time: _____ Date: _____	Time: _____ Date: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

# Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-71360-1

**Login Number: 71360**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Oropeza, Salvador**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seals
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	gel packs only
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



**Laboratory Data Review Checklist**

Completed By:

Justin Risley

Title:

Engineering Staff

Date:

4/1/2021

Consultant Firm:

Shannon and Wilson, Inc.

Laboratory Name:

Eurofins TestAmerica Laboratories, Inc.

Laboratory Report Number:

320-71360-1

Laboratory Report Date:

4/1/2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

ADEC File Number:

2215.38.035

Hazard Identification Number:

27304

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CS Site Name:

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**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes  No  N/A  Comments:

The ADEC certified the TestAmerica/Eurofins Laboratories West Sacramento, CA location for the analysis of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) on February 6, 2018. These compounds were included in the ADEC's Contaminated Sites Laboratory Approval 17-020.

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

Analyses were performed by Eurofins TestAmerica Laboratories, Inc. in West Sacramento, CA.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

The temperature of the cooler at receipt was 2.0° C.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

Analysis of PFAS compounds does not require chemical preservation.

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

The sample receipt form notes that the samples were received in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

No discrepancies were noted by the lab. Samples were received in good condition.

e. Data quality or usability affected?

Comments:

Data quality and/or usability was not affected; see above.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

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b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte(s) was/were outside of the established ratio limit(s). The qualitative identification of the analyte(s) has/have some degree of uncertainty, and the reported value(s) may have some high bias. However, analyst judgment was used to positively identify the analytes. *SBMW4-1* (PFOS), *SBTWP5-102* (PFHxA), *SBMW4-101* (PFOS) and *SB9-1* (PFOS), *SB16-2* (PFHxA), *SB17-1* (PFHxA), *SBIW19-1* (PFOS), (320-71360-A-42-B MS) (PFOS) and (320-71360-A-42-C MSD) (PFOS), (CCVL 320-473543/2). Due to this uncertainty, the results analyte results in the aforementioned samples are considered estimated with no direction of bias have been flagged 'J'.

Method EPA 537(Mod): Due to the high concentration of Perfluorooctanesulfonic acid (PFOS), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-471686 and analytical batch 320-474422 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. Through our evaluation of the data, it appears that the MS/MSD for this preparation batch was evaluated for accuracy and precision. Refer to section 6.c. for MS/MSD discrepancies for this preparation batch.

Method EPA 537(Mod): The matrix spike (MS) recoveries for Perfluorohexanesulfonic acid (PFHxS) and DONA of preparation batch 320-471686 and analytical batch 320-473142 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Refer to section 6.c. for further details.

Method EPA 537(Mod): The matrix spike duplicate (MSD) recoveries for DONA of preparation batch 320-471686 and analytical batch 320-473142 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Refer to section 6.c. for further details.

Method EPA 537(Mod): The matrix spike / matrix spike duplicate (MS/MSD) recoveries and/or precision for preparation batch 320-471897 and analytical batch 320-472276 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Refer to section 6.c. for further details.

Method EPA 537(Mod): Results for samples *SBTWP5-1*, (320-71360-A-10-B MS) and (320-71360-A-10-C MSD) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits. Data quality and/or usability not affected.

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Method EPA 537(Mod): The concentration of one or more PFAS analytes associated with the following samples exceeded the instrument calibration range: *SBIW20-1*, *SBIW20-101*, *SBIW19-1*, (320-71360-A-42-B MS) and (320-71360-A-42-C MSD). These analytes have been qualified but the lab as 'E'; however, the peaks did saturate the instrument detector. This likely due to sample matrix interference. There was very high target recoveries for several analytes in the samples. The samples were not re-run at a lower dilution. The client was contacted, and the data was reported with narration. These results are considered estimated with no given direction of bias and we have applied a 'J' qualifier.

Method EPA 537(Mod): Results for sample *SBTWP5-102* were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits. Data quality and/or usability not affected.

Method EPA 537(Mod): Results for samples *SB15-1* and *SB15-2* were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits. Data quality and/or usability not affected.

Method EPA 537(Mod): Results for samples *SBIW20-2* and *SBIW19-2* were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits. Data quality and/or usability not affected.

Method EPA 537(Mod): Several Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: *SB15-2*. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s). Refer to section 6.d. for further details.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for several analytes: *SBIW20-1*, *SBIW20-101*, *SBIW19-1*, (320-71360-A-42-B MS) and (320-71360-A-42-C MSD). This is due to sample matrix interference. There was very high target recovery for Perfluorooctanesulfonic Acid, so the samples were not re-run at a lower dilution. The client was contacted, and the data was reported with narration. Refer to section 6.d. for further details.



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Method EPA 537(Mod): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes in the following samples: *SBIW19-1*, (320-71360-A-42-B MS) and (320-71360-A-42-C MSD). Since the high recovery is due to matrix interferences, the analytes associated with this IDA may have a low bias. The samples were not re-run at a lower dilution. The client was contacted, and the data was reported with narration. Refer to section 6.d. for further details.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit in 13C2 PFTeDA: *SBIW19-2*. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample. Refer to section 6.d. for further details.

Method EPA 537(Mod): Internal standard (ISTD) response for 13C2 PFOA for the following samples was outside acceptance criteria: *SBIW20-101*, *SBIW19-1*, (320-71360-A-42-B MS) and (320-71360-A-42-C MSD). This anomaly is due to sample matrix interference. There was very high target recovery for Perfluorooctanesulfonic Acid, so the samples were not re-run at a lower dilution. The client was contacted, and the data was reported with narration. Refer to section 6.d. for further details.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

Where required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

See above.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

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c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

e. Data quality or usability affected?

Data quality and/or usability was not affected; see above.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

No analytes were detected in the method blank samples.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; see above.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

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v. Data quality or usability affected?

Comments:

Data quality and/or usability was not affected; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

LCSs were reported for PFAS analysis.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

N/A; metals and/or inorganics were not analyzed as part of this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

RPDs could not be calculated as LCSDs were not analyzed.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A; see above.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

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vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and/or usability was not affected; see above.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

MS/MSDs were reported for PFAS analyses.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

N/A; metals and/or inorganics were not analyzed as part of this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

The MS recovery for PFHxS in preparatory batch 471686, for parent sample *SBTWP5-1*, exceeded laboratory QC criteria. The results are considered estimated, high biased, and flagged 'JH'.

The MS and MSD recovery for ADONA in preparatory batch 471686, for parent sample *SBTWP5-1*, exceeded laboratory QC criteria, however, ADONA was not detected in the parent sample. Data quality/usability not affected, and flagging is not required.

The MS/MSD recoveries for PFHxA, PFHpA, PFOA, PFNA, PFDA, PFUnA, PFDoA, PFTeA, PFBS, PFHxS, PFOS, NMeFOSSA, and NEtFOSSA, in preparation batch 471897 were outside control limits. The native concentration of these analytes in the parent sample (*SBIW19-1*) exceeded the spiking concentration. Therefore, data qualification is not required and data quality and/or usability not affected.

The MS/MSD recoveries for 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, and 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid in preparation batch 471897 were recovered above outside control limits. These analytes were not detected in the parent sample (*SBIW19-1*), therefore, data quality/usability not affected, and flagging is not required.

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The MS recovery for ADONA in preparatory batch 471897, for parent sample *SBIW19-1*, did not meet laboratory QC criteria. ADONA was not detected in the parent sample, therefore the ADONA results in the parent sample are considered estimated, biased low, and flagged 'J'.

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

The MS/MSD RPD reported for NETFOSAA in parent sample *SBIW19-1* and preparation batch 471897 was above the laboratory control limits. However, the native concentration in the parent sample exceeds the spiking concentration, therefore data quality and/or usability is not affected, flagging not required.

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

See above.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

See above.

- d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

- i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

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- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

IDA recoveries for PFHxA, PFHpA, PFOA, PFNA, PFDA, PFUnA, PFDoA, PFTeA, PFBS, PFHxS, PFOS, NMeFOSAA, NEtFOSAA, and HFPO-DA in *SBI5-2* were low. PFHxA, PFDA, PFUnA, PFDoA, PFTeA, PFHxS, and PFOS were detected in the project sample and are considered estimates with no direction of bias and have been flagged ‘J’. PFHpA, PFOA, PFNA, NMeFOSAA, NEtFOSAA, and HFPO-DA were not detected in the project sample, are considered estimates with no direction of bias and have been flagged ‘J’.

IDA recoveries for PFNA, PFDA, PFDoA, PFTeA, PFOS, and NMeFOSAA in *SBIW20-1* were low. These analytes were detected in the project sample and are considered estimates with no direction of bias and have been flagged ‘J’.

IDA recoveries for PFNA, PFDA, PFUnA, PFDoA, PFTeA, PFOS, and NMeFOSAA in *SBIW20-101* were low. These analytes were detected in the project sample and are considered estimates with no direction of bias and have been flagged ‘J’.

IDA recoveries for PFHxA, PFUnA, PFDoA, PFBS, PFHxS, PFOS, NEtFOSAA, and HFPO-DA in *SBIW19-1* were high. HFPO-DA was not detected in the project sample, flagging is not required. The remaining analytes were detected in the project sample, are considered estimates with no direction of bias and have been flagged ‘J’.

IDA recovery for PFNA in *SBIW19-1* was low. This analyte was detected in the project sample and is considered an estimated value with no direction of bias and have been flagged ‘J’.

IDA recovery for PFTeA in *SBIW19-2* is low. This analyte was detected in the project sample and is considered an estimate with no direction of bias and has been flagged ‘J’.

- iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

- iv. Data quality or usability affected?

Comments:

See above.

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e. Trip Blanks

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?  
(If not, enter explanation below.)

Yes  No  N/A  Comments:

PFAS are not volatile compounds; therefore, a trip blank is not required.

- ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?  
(If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

N/A; a trip blank is not required.

- iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

N/A; a trip blank is not required.

- iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

None; a trip blank was not submitted with this work order.

- v. Data quality or usability affected?

Comments:

The data quality and/or usability are not affected; see above.

f. Field Duplicate

- i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

- ii. Submitted blind to lab?

Yes  No  N/A  Comments:

Duplicate pairs *SBMW3-1/SBMW3-101*, *SBTWP5-2/SBTWP5-102*, *SBTWP6-1/SBTWP6-101*, *SBMW4-1/SBMW4-101*, and *SBIW20-1/SBIW20-101* were submitted.

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iii. Precision – All relative percent differences (RPD) less than specified project objectives?  
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where  $R_1$  = Sample Concentration  
 $R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

The RPDs were above the 50% criteria, where calculable, for field duplicate pair *SBIW20-1/SBIW20-101* for PFHpA, PFOA, PFNA, PFDA, PFUnA, PFDoA, PFTeA, PFHxS, PFOS, NMeFOSAA, and NEtFOSAA, field duplicate pair *SBTWP5-2/SBTWP5-102* for PFOS, and field duplicate pair *SBTWP6-1/SBTWP6-101* for PFNA. These analytes in the aforementioned samples are considered estimates with no direction bias and have been flagged 'J'.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

See above.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Single use equipment was used, no equipment blanks were included in this work order.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

See above.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; see above.

iii. Data quality or usability affected?

Comments:

The data quality and/or usability are not affected; see above.



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7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A

Comments:

See section 4.b above.

## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-72120-1  
Client Project/Site: Cordova SREB

**For:**

Shannon & Wilson, Inc  
2355 Hill Rd.  
Fairbanks, Alaska 99709-5244

Attn: Valerie Webb



---

*Authorized for release by:*  
4/13/2021 10:04:11 AM

David Alltucker, Project Manager I  
(916)374-4383  
[David.Alltucker@Eurofinset.com](mailto:David.Alltucker@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

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## Job ID: 320-72120-1

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### Laboratory: Eurofins TestAmerica, Sacramento

#### Narrative

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#### Job Narrative 320-72120-1

#### Receipt

The samples were received on 4/6/2021 4:47 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.8° C.

#### Receipt Exceptions

The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): Sample 2, both containers have time as 500p but COC has time as 510p. Sample was logged in and labeled according to time on COC. 103311-W1R-GW101 (320-72120-2).

#### LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Organic Prep

Method 537.1 DW: Samples have a yellowish hue. 103311-W1R-GW1 (320-72120-1), 103311-W1R-GW101 (320-72120-2) and 103311-W2-GW1 (320-72120-3)

Method 537.1 DW: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-478061.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

**Client Sample ID: 103311-W1R-GW1**

**Lab Sample ID: 320-72120-1**

No Detections.

**Client Sample ID: 103311-W1R-GW101**

**Lab Sample ID: 320-72120-2**

No Detections.

**Client Sample ID: 103311-W2-GW1**

**Lab Sample ID: 320-72120-3**

No Detections.

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This Detection Summary does not include radiochemical test results.

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# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

**Client Sample ID: 103311-W1R-GW1**

**Lab Sample ID: 320-72120-1**

Date Collected: 04/02/21 17:00

Matrix: Water

Date Received: 04/06/21 16:47

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 19:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		70 - 130	04/08/21 19:53	04/09/21 19:11	1
13C2 PFDA	115		70 - 130	04/08/21 19:53	04/09/21 19:11	1
d5-NEtFOSAA	98		70 - 130	04/08/21 19:53	04/09/21 19:11	1
13C3 HFPO-DA	104		70 - 130	04/08/21 19:53	04/09/21 19:11	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-72120-1

**Client Sample ID: 103311-W1R-GW101**

**Lab Sample ID: 320-72120-2**

**Date Collected: 04/02/21 17:10**

**Matrix: Water**

**Date Received: 04/06/21 16:47**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.49	ng/L		04/08/21 19:53	04/09/21 19:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		70 - 130				04/08/21 19:53	04/09/21 19:19	1
13C2 PFDA	109		70 - 130				04/08/21 19:53	04/09/21 19:19	1
d5-NEtFOSAA	96		70 - 130				04/08/21 19:53	04/09/21 19:19	1
13C3 HFPO-DA	109		70 - 130				04/08/21 19:53	04/09/21 19:19	1



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

**Client Sample ID: 103311-W2-GW1**

**Lab Sample ID: 320-72120-3**

**Date Collected: 04/02/21 20:45**

**Matrix: Water**

**Date Received: 04/06/21 16:47**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.45	ng/L		04/08/21 19:53	04/09/21 19:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	104		70 - 130	04/08/21 19:53	04/09/21 19:26	1
13C2 PFDA	114		70 - 130	04/08/21 19:53	04/09/21 19:26	1
d5-NEtFOSAA	104		70 - 130	04/08/21 19:53	04/09/21 19:26	1
13C3 HFPO-DA	107		70 - 130	04/08/21 19:53	04/09/21 19:26	1

# Surrogate Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA	PFDA	d5NEFOS	HFPODA
		(70-130)	(70-130)	(70-130)	(70-130)
320-72120-1	103311-W1R-GW1	102	115	98	104
320-72120-2	103311-W1R-GW101	105	109	96	109
320-72120-3	103311-W2-GW1	104	114	104	107
LCS 320-478061/2-A	Lab Control Sample	110	119	99	110
LCSD 320-478061/3-A	Lab Control Sample Dup	104	112	95	108
MB 320-478061/1-A	Method Blank	102	112	110	107

### Surrogate Legend

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

d5NEFOS = d5-NEtFOSAA

HFPODA = 13C3 HFPO-DA

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

## Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)

**Lab Sample ID: MB 320-478061/1-A**  
**Matrix: Water**  
**Analysis Batch: 478440**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 478061**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.50	ng/L		04/08/21 19:53	04/09/21 18:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		70 - 130	04/08/21 19:53	04/09/21 18:48	1
13C2 PFDA	112		70 - 130	04/08/21 19:53	04/09/21 18:48	1
d5-NEtFOSAA	110		70 - 130	04/08/21 19:53	04/09/21 18:48	1
13C3 HFPO-DA	107		70 - 130	04/08/21 19:53	04/09/21 18:48	1

**Lab Sample ID: LCS 320-478061/2-A**  
**Matrix: Water**  
**Analysis Batch: 478440**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 478061**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	160	176		ng/L		110	70 - 130
Perfluoroheptanoic acid (PFHpA)	160	189		ng/L		118	70 - 130
Perfluorooctanoic acid (PFOA)	160	178		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	160	206		ng/L		129	70 - 130
Perfluorodecanoic acid (PFDA)	160	185		ng/L		116	70 - 130
Perfluoroundecanoic acid (PFUnA)	160	188		ng/L		117	70 - 130
Perfluorododecanoic acid (PFDoA)	160	175		ng/L		109	70 - 130
Perfluorotridecanoic acid (PFTriA)	160	188		ng/L		118	70 - 130
Perfluorotetradecanoic acid (PFTeA)	160	178		ng/L		111	70 - 130
Perfluorobutanesulfonic acid (PFBS)	141	134		ng/L		95	70 - 130

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

## Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS) (Continued)

**Lab Sample ID: LCS 320-478061/2-A**  
**Matrix: Water**  
**Analysis Batch: 478440**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 478061**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanesulfonic acid (PFHxS)	146	139		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	148	142		ng/L		96	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	160	150		ng/L		93	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	160	166		ng/L		104	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	149	140		ng/L		94	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PFHexafluoropropylene Oxide Dimer Acid (HFPO-DA)	151	139		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	160	175		ng/L		110	70 - 130
	151	163		ng/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	110		70 - 130
13C2 PFDA	119		70 - 130
d5-NEtFOSAA	99		70 - 130
13C3 HFPO-DA	110		70 - 130

**Lab Sample ID: LCSD 320-478061/3-A**  
**Matrix: Water**  
**Analysis Batch: 478440**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 478061**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	160	167		ng/L		105	70 - 130	5	30
Perfluoroheptanoic acid (PFHpA)	160	186		ng/L		116	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	160	179		ng/L		112	70 - 130	1	30
Perfluorononanoic acid (PFNA)	160	190		ng/L		118	70 - 130	8	30
Perfluorodecanoic acid (PFDA)	160	178		ng/L		112	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	160	184		ng/L		115	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	160	177		ng/L		110	70 - 130	1	30
Perfluorotridecanoic acid (PFTriA)	160	189		ng/L		118	70 - 130	0	30
Perfluorotetradecanoic acid (PFTeA)	160	168		ng/L		105	70 - 130	6	30
Perfluorobutanesulfonic acid (PFBS)	141	136		ng/L		96	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	146	152		ng/L		104	70 - 130	9	30
Perfluorooctanesulfonic acid (PFOS)	148	149		ng/L		100	70 - 130	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	160	148		ng/L		92	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	160	157		ng/L		98	70 - 130	6	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	149	154		ng/L		103	70 - 130	10	30

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-72120-1

## Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS) (Continued)

**Lab Sample ID: LCSD 320-478061/3-A**  
**Matrix: Water**  
**Analysis Batch: 478440**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 478061**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	151	149		ng/L		99	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	160	167		ng/L		105	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	151	158		ng/L		105	70 - 130	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C2 PFHxA	104		70 - 130
13C2 PFDA	112		70 - 130
d5-NEtFOSAA	95		70 - 130
13C3 HFPO-DA	108		70 - 130

# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

## LCMS

### Prep Batch: 478061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-72120-1	103311-W1R-GW1	Total/NA	Water	537.1 DW	
320-72120-2	103311-W1R-GW101	Total/NA	Water	537.1 DW	
320-72120-3	103311-W2-GW1	Total/NA	Water	537.1 DW	
MB 320-478061/1-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 320-478061/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 320-478061/3-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	

### Analysis Batch: 478440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-72120-1	103311-W1R-GW1	Total/NA	Water	537.1 DW	478061
320-72120-2	103311-W1R-GW101	Total/NA	Water	537.1 DW	478061
320-72120-3	103311-W2-GW1	Total/NA	Water	537.1 DW	478061
MB 320-478061/1-A	Method Blank	Total/NA	Water	537.1 DW	478061
LCS 320-478061/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	478061
LCSD 320-478061/3-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	478061

# Lab Chronicle

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-72120-1

**Client Sample ID: 103311-W1R-GW1**

**Lab Sample ID: 320-72120-1**

Date Collected: 04/02/21 17:00

Matrix: Water

Date Received: 04/06/21 16:47

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			250.4 mL	1.00 mL	478061	04/08/21 19:53	JER	TAL SAC
Total/NA	Analysis	537.1 DW		1			478440	04/09/21 19:11	MYV	TAL SAC

**Client Sample ID: 103311-W1R-GW101**

**Lab Sample ID: 320-72120-2**

Date Collected: 04/02/21 17:10

Matrix: Water

Date Received: 04/06/21 16:47

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			254.2 mL	1.00 mL	478061	04/08/21 19:53	JER	TAL SAC
Total/NA	Analysis	537.1 DW		1			478440	04/09/21 19:19	MYV	TAL SAC

**Client Sample ID: 103311-W2-GW1**

**Lab Sample ID: 320-72120-3**

Date Collected: 04/02/21 20:45

Matrix: Water

Date Received: 04/06/21 16:47

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			275.3 mL	1.00 mL	478061	04/08/21 19:53	JER	TAL SAC
Total/NA	Analysis	537.1 DW		1			478440	04/09/21 19:26	MYV	TAL SAC

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Accreditation/Certification Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Cordova SREB

Job ID: 320-72120-1

## Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-21
Arkansas DEQ	State	88-0691	06-17-21
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-21
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-21
Georgia	State	4040	01-29-22
Hawaii	State	<cert No.>	01-29-22
Illinois	NELAP	200060	03-18-22
Kansas	NELAP	E-10375	10-31-21
Louisiana	NELAP	01944	06-30-21
Maine	State	CA00004	04-14-22
Michigan	State	9947	01-29-22
Nevada	State	CA000442021-2	07-31-21
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-22
Ohio	State	41252	01-29-22
Oregon	NELAP	4040	01-30-23
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-21
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442021-12	02-28-21 *
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-22
Washington	State	C581	05-05-21
West Virginia (DW)	State	9930C	12-31-21
Wisconsin	State	998204680	08-31-21
Wyoming	State Program	8TMS-L	01-28-19 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



# Method Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

Method	Method Description	Protocol	Laboratory
537.1 DW	Perfluorinated Alkyl Acids (LC/MS)	EPA	TAL SAC
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	TAL SAC

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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# Sample Summary

Client: Shannon & Wilson, Inc  
Project/Site: Cordova SREB

Job ID: 320-72120-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-72120-1	103311-W1R-GW1	Water	04/02/21 17:00	04/06/21 16:47	
320-72120-2	103311-W1R-GW101	Water	04/02/21 17:10	04/06/21 16:47	
320-72120-3	103311-W2-GW1	Water	04/02/21 20:45	04/06/21 16:47	

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## Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-72120-1

**Login Number: 72120**

**List Number: 1**

**Creator: Her, David A**

**List Source: Eurofins TestAmerica, Sacramento**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**Laboratory Data Review Checklist**

Completed By:

Veselina Yakimova

Title:

Geologist

Date:

4/14/21

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

Eurofins TestAmerica Laboratories, Inc.

Laboratory Report Number:

320-72120-1

Laboratory Report Date:

4/13/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

ADEC File Number:

2215.38.035

Hazard Identification Number:

27304

320-72120-1

Laboratory Report Date:

4/13/21

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes  No  N/A  Comments:

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

The samples were analyzed by the Eurofins TestAmerica Laboratory in Sacramento, California.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

The container label for sample *103311-W1R-GW101* did not match the information listed on the COC. A ten-minute discrepancy was noted between the sample label and the COC. The sample was logged in per the COC. Analysis was performed within the method required holding time.

e. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

The laboratory notes the samples *103311-W1R-GW1*, *103311-W1R-GW101* and *103311-W2-GW1* exhibited a yellowish hue.

The laboratory also notes there was not sufficient sample volume to perform a MS/MSD analysis for preparation batch 320-478061.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

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d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative does not specify an effect on data quality.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

Soil samples are not included in this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

Analytical sensitivity was evaluated to verify that RLs met the applicable DEC action level for non-detected results, as appropriate. All RLs for non-detect results met applicable action levels.

e. Data quality or usability affected?

Data quality and/or usability are not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:



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ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No samples are affected; target PFAS were not detected in the method blank.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Flags are not required; see above.

v. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/Inorganics analyses were not requested.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

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- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No samples are affected. Accuracy and precision for the LCS/LCSD samples are within laboratory limits.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Flags are not required; see above.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and/or usability are not affected.

- c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

No MS/MSD samples were reported with this work order. See the LCS/LCSD section for method accuracy and precision assessment.

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/Inorganics analyses were not requested.

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iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

No MS/MSD samples were reported with this work order.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

No MS/MSD samples were reported with this work order.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Not applicable, no MS/MSD samples were reported with this work order.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

No MS/MSD samples were reported with this work order.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and/or usability are not affected.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

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- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

- iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

No samples exhibited IDA recovery failures.

- iv. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

e. Trip Blanks

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes  No  N/A  Comments:

Volatile analyses were not requested as a part of this work order.

- ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

Volatile analyses were not requested as a part of this work order.

- iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Volatile analyses were not requested as a part of this work order.

- iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

Not applicable; volatile analyses were not requested as a part of this work order.

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v. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

Sample 103311-WIR-GW101 is a field duplicate of sample 103311-WIR-GW1.

iii. Precision – All relative percent differences (RPD) less than specified project objectives?  
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

Target PFAS were not detected in the field samples.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and/or usability are not affected.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Samples were collected with non-reusable equipment. An equipment blank is not required.

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i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

See above.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Not applicable; see above.

iii. Data quality or usability affected?

Comments:

Data quality and/or usability are not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

No other flags are needed.

## Laboratory Report of Analysis

To: Shannon & Wilson, Inc.  
5430 Fairbanks St #3  
Anchorage, AK 99518  
561-2120

Report Number: **1211478**

Client Project: **103311-006 Cordova SREB**

Dear Ryan Collins,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,  
SGS North America Inc.



**Justin Nelson**  
**2021.04.15**  
**16:07:32 -08'00'**

Justin Nelson  
Project Manager  
Justin.Nelson@sgs.com

Date

### Case Narrative

SGS Client: **Shannon & Wilson, Inc.**  
SGS Project: **1211478**  
Project Name/Site: **103311-006 Cordova SREB**  
Project Contact: **Ryan Collins**

Refer to sample receipt form for information on sample condition.

**1211478001MSD (1605334) MSD**

8260D - MSD recovery for 1,2,3-trichlorobenzene does not meet QC criteria. Refer to LCS for accuracy requirements.

\*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 04/15/2021 8:39:48AM



## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

### Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
103311-W1RS1	1211478001	04/02/2021	04/05/2021	Soil/Solid (dry weight)
103311-W1RS101	1211478002	04/02/2021	04/05/2021	Soil/Solid (dry weight)
103311-STB1	1211478003	04/02/2021	04/05/2021	Soil/Solid (dry weight)

<u>Method</u>	<u>Method Description</u>
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
AK102	Diesel/Residual Range Organics
AK103	Diesel/Residual Range Organics
AK101	Gasoline Range Organics (S)
SM21 2540G	Percent Solids SM2540G
SW8260D	VOC 8260 (S) Field Extracted

Print Date: 04/15/2021 8:39:52AM

### Detectable Results Summary

Client Sample ID: **103311-W1RS1**

Lab Sample ID: 1211478001

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	11.8J	mg/kg
Residual Range Organics	48.3J	mg/kg
Gasoline Range Organics	0.674J	mg/kg

**Volatile Fuels**

Client Sample ID: **103311-W1RS101**

Lab Sample ID: 1211478002

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	58.3J	mg/kg
Gasoline Range Organics	1.04J	mg/kg

**Volatile Fuels**

Client Sample ID: **103311-STB1**

Lab Sample ID: 1211478003

**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	1.25J	mg/kg

**Volatile GC/MS**



Results of 103311-W1RS1

Client Sample ID: 103311-W1RS1
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478001
Lab Project ID: 1211478

Collection Date: 04/02/21 18:00
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):96.8
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate standards with associated quality and detection data.

Batch Information

Analytical Batch: XMS12557
Analytical Method: 8270D SIM (PAH)
Analyst: CDM
Analytical Date/Time: 04/07/21 16:37
Container ID: 1211478001-B

Prep Batch: XXX44594
Prep Method: SW3550C
Prep Date/Time: 04/06/21 11:44
Prep Initial Wt./Vol.: 23.299 g
Prep Extract Vol: 5 mL



Results of 103311-W1RS1

Client Sample ID: 103311-W1RS1
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478001
Lab Project ID: 1211478

Collection Date: 04/02/21 18:00
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):96.8
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 11.8 J, 20.4, 6.33, mg/kg, 1, 04/12/21 23:06

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 87.3, 50-150, %, 1, 04/12/21 23:06

Batch Information

Analytical Batch: XFC15889
Analytical Method: AK102
Analyst: A.A
Analytical Date/Time: 04/12/21 23:06
Container ID: 1211478001-B

Prep Batch: XXX44610
Prep Method: SW3550C
Prep Date/Time: 04/09/21 09:27
Prep Initial Wt./Vol.: 30.351 g
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 48.3 J, 102, 43.9, mg/kg, 1, 04/12/21 23:06

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 91.5, 50-150, %, 1, 04/12/21 23:06

Batch Information

Analytical Batch: XFC15889
Analytical Method: AK103
Analyst: A.A
Analytical Date/Time: 04/12/21 23:06
Container ID: 1211478001-B

Prep Batch: XXX44610
Prep Method: SW3550C
Prep Date/Time: 04/09/21 09:27
Prep Initial Wt./Vol.: 30.351 g
Prep Extract Vol: 5 mL



Results of **103311-W1RS1**

Client Sample ID: **103311-W1RS1**  
Client Project ID: **103311-006 Cordova SREB**  
Lab Sample ID: 1211478001  
Lab Project ID: 1211478

Collection Date: 04/02/21 18:00  
Received Date: 04/05/21 12:35  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.8  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.674 J	2.01	0.602	mg/kg	1		04/08/21 15:55
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	86.8	50-150		%	1		04/08/21 15:55

Batch Information

Analytical Batch: VFC15538  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 04/08/21 15:55  
Container ID: 1211478001-A

Prep Batch: VXX36931  
Prep Method: SW5035A  
Prep Date/Time: 04/02/21 18:00  
Prep Initial Wt./Vol.: 69.951 g  
Prep Extract Vol: 27.2044 mL



Results of 103311-W1RS1

Client Sample ID: 103311-W1RS1
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478001
Lab Project ID: 1211478

Collection Date: 04/02/21 18:00
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):96.8
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of 103311-W1RS1

Client Sample ID: 103311-W1RS1
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478001
Lab Project ID: 1211478

Collection Date: 04/02/21 18:00
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):96.8
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.





Results of **103311-W1RS1**

Client Sample ID: **103311-W1RS1**  
Client Project ID: **103311-006 Cordova SREB**  
Lab Sample ID: 1211478001  
Lab Project ID: 1211478

Collection Date: 04/02/21 18:00  
Received Date: 04/05/21 12:35  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.8  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20636  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 04/06/21 15:40  
Container ID: 1211478001-A

Prep Batch: VXX36926  
Prep Method: SW5035A  
Prep Date/Time: 04/02/21 18:00  
Prep Initial Wt./Vol.: 69.951 g  
Prep Extract Vol: 27.2044 mL



Results of 103311-W1RS101

Client Sample ID: 103311-W1RS101
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478002
Lab Project ID: 1211478

Collection Date: 04/02/21 18:05
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):97.7
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

Batch Information

Analytical Batch: XMS12557
Analytical Method: 8270D SIM (PAH)
Analyst: CDM
Analytical Date/Time: 04/07/21 16:58
Container ID: 1211478002-B

Prep Batch: XXX44594
Prep Method: SW3550C
Prep Date/Time: 04/06/21 11:44
Prep Initial Wt./Vol.: 22.61 g
Prep Extract Vol: 5 mL



Results of 103311-W1RS101

Client Sample ID: 103311-W1RS101
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478002
Lab Project ID: 1211478

Collection Date: 04/02/21 18:05
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):97.7
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 10.1 U, 20.1, 6.24, mg/kg, 1, 04/12/21 23:16

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 96.4, 50-150, %, 1, 04/12/21 23:16

Batch Information

Analytical Batch: XFC15889
Analytical Method: AK102
Analyst: A.A
Analytical Date/Time: 04/12/21 23:16
Container ID: 1211478002-B

Prep Batch: XXX44610
Prep Method: SW3550C
Prep Date/Time: 04/09/21 09:27
Prep Initial Wt./Vol.: 30.474 g
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 58.3 J, 101, 43.3, mg/kg, 1, 04/12/21 23:16

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 102, 50-150, %, 1, 04/12/21 23:16

Batch Information

Analytical Batch: XFC15889
Analytical Method: AK103
Analyst: A.A
Analytical Date/Time: 04/12/21 23:16
Container ID: 1211478002-B

Prep Batch: XXX44610
Prep Method: SW3550C
Prep Date/Time: 04/09/21 09:27
Prep Initial Wt./Vol.: 30.474 g
Prep Extract Vol: 5 mL



Results of **103311-W1RS101**

Client Sample ID: **103311-W1RS101**  
Client Project ID: **103311-006 Cordova SREB**  
Lab Sample ID: 1211478002  
Lab Project ID: 1211478

Collection Date: 04/02/21 18:05  
Received Date: 04/05/21 12:35  
Matrix: Soil/Solid (dry weight)  
Solids (%):97.7  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.04 J	2.03	0.609	mg/kg	1		04/08/21 16:12
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	84.5	50-150		%	1		04/08/21 16:12

**Batch Information**

Analytical Batch: VFC15538  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 04/08/21 16:12  
Container ID: 1211478002-A

Prep Batch: VXX36931  
Prep Method: SW5035A  
Prep Date/Time: 04/02/21 18:05  
Prep Initial Wt./Vol.: 66.767 g  
Prep Extract Vol: 26.504 mL



Results of 103311-W1RS101

Client Sample ID: 103311-W1RS101
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478002
Lab Project ID: 1211478

Collection Date: 04/02/21 18:05
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):97.7
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of 103311-W1RS101

Client Sample ID: 103311-W1RS101
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478002
Lab Project ID: 1211478

Collection Date: 04/02/21 18:05
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):97.7
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of **103311-W1RS101**

Client Sample ID: **103311-W1RS101**  
Client Project ID: **103311-006 Cordova SREB**  
Lab Sample ID: 1211478002  
Lab Project ID: 1211478

Collection Date: 04/02/21 18:05  
Received Date: 04/05/21 12:35  
Matrix: Soil/Solid (dry weight)  
Solids (%):97.7  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20636  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 04/06/21 17:28  
Container ID: 1211478002-A

Prep Batch: VXX36926  
Prep Method: SW5035A  
Prep Date/Time: 04/02/21 18:05  
Prep Initial Wt./Vol.: 66.767 g  
Prep Extract Vol: 26.504 mL

## Results of 103311-STB1

Client Sample ID: **103311-STB1**  
 Client Project ID: **103311-006 Cordova SREB**  
 Lab Sample ID: 1211478003  
 Lab Project ID: 1211478

Collection Date: 04/02/21 18:00  
 Received Date: 04/05/21 12:35  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.25 J	2.52	0.756	mg/kg	1		04/08/21 15:01
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	79.8	50-150		%	1		04/08/21 15:01

## Batch Information

Analytical Batch: VFC15538  
 Analytical Method: AK101  
 Analyst: S.S  
 Analytical Date/Time: 04/08/21 15:01  
 Container ID: 1211478003-A

Prep Batch: VXX36931  
 Prep Method: SW5035A  
 Prep Date/Time: 04/02/21 18:00  
 Prep Initial Wt./Vol.: 49.586 g  
 Prep Extract Vol: 25 mL





Results of 103311-STB1

Client Sample ID: 103311-STB1
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478003
Lab Project ID: 1211478

Collection Date: 04/02/21 18:00
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of 103311-STB1

Client Sample ID: 103311-STB1
Client Project ID: 103311-006 Cordova SREB
Lab Sample ID: 1211478003
Lab Project ID: 1211478

Collection Date: 04/02/21 18:00
Received Date: 04/05/21 12:35
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of **103311-STB1**

Client Sample ID: **103311-STB1**  
Client Project ID: **103311-006 Cordova SREB**  
Lab Sample ID: 1211478003  
Lab Project ID: 1211478

Collection Date: 04/02/21 18:00  
Received Date: 04/05/21 12:35  
Matrix: Soil/Solid (dry weight)  
Solids (%):  
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS20636  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 04/06/21 15:10  
Container ID: 1211478003-A

Prep Batch: VXX36926  
Prep Method: SW5035A  
Prep Date/Time: 04/02/21 18:00  
Prep Initial Wt./Vol.: 49.586 g  
Prep Extract Vol: 25 mL



### Method Blank

Blank ID: MB for HBN 1817504 [SPT/11242]

Blank Lab ID: 1605311

QC for Samples:

1211478001, 1211478002

Matrix: Soil/Solid (dry weight)

### Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

### Batch Information

Analytical Batch: SPT11242

Analytical Method: SM21 2540G

Instrument:

Analyst: IVM

Analytical Date/Time: 4/6/2021 4:00:00PM

Print Date: 04/15/2021 8:39:58AM



### Duplicate Sample Summary

Original Sample ID: 1211478001

Duplicate Sample ID: 1605312

QC for Samples:

1211478001, 1211478002

Analysis Date: 04/06/2021 16:00

Matrix: Soil/Solid (dry weight)

### Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	96.8	98.5	%	1.70	(< 15 )

### Batch Information

Analytical Batch: SPT11242

Analytical Method: SM21 2540G

Instrument:

Analyst: IVM

Print Date: 04/15/2021 8:40:00AM



### Method Blank

Blank ID: MB for HBN 1817507 [VXX/36926]

Blank Lab ID: 1605328

QC for Samples:

1211478001, 1211478002, 1211478003

Matrix: Soil/Solid (dry weight)

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	10.0U	20.0	6.20	ug/kg
1,1,1-Trichloroethane	12.5U	25.0	7.80	ug/kg
1,1,2,2-Tetrachloroethane	1.00U	2.00	0.620	ug/kg
1,1,2-Trichloroethane	0.400U	0.800	0.250	ug/kg
1,1-Dichloroethane	12.5U	25.0	7.80	ug/kg
1,1-Dichloroethene	12.5U	25.0	7.80	ug/kg
1,1-Dichloropropene	12.5U	25.0	7.80	ug/kg
1,2,3-Trichlorobenzene	25.0U	50.0	15.0	ug/kg
1,2,3-Trichloropropane	1.00U	2.00	0.620	ug/kg
1,2,4-Trichlorobenzene	12.5U	25.0	7.80	ug/kg
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/kg
1,2-Dibromo-3-chloropropane	50.0U	100	31.0	ug/kg
1,2-Dibromoethane	0.500U	1.00	0.400	ug/kg
1,2-Dichlorobenzene	12.5U	25.0	7.80	ug/kg
1,2-Dichloroethane	1.00U	2.00	0.700	ug/kg
1,2-Dichloropropane	5.00U	10.0	3.10	ug/kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/kg
1,3-Dichlorobenzene	12.5U	25.0	7.80	ug/kg
1,3-Dichloropropane	5.00U	10.0	3.10	ug/kg
1,4-Dichlorobenzene	12.5U	25.0	7.80	ug/kg
2,2-Dichloropropane	12.5U	25.0	7.80	ug/kg
2-Butanone (MEK)	125U	250	78.0	ug/kg
2-Chlorotoluene	12.5U	25.0	7.80	ug/kg
2-Hexanone	50.0U	100	31.0	ug/kg
4-Chlorotoluene	12.5U	25.0	7.80	ug/kg
4-Isopropyltoluene	50.0U	100	25.0	ug/kg
4-Methyl-2-pentanone (MIBK)	125U	250	78.0	ug/kg
Acetone	125U	250	78.0	ug/kg
Benzene	6.25U	12.5	3.90	ug/kg
Bromobenzene	12.5U	25.0	7.80	ug/kg
Bromochloromethane	12.5U	25.0	7.80	ug/kg
Bromodichloromethane	1.00U	2.00	0.620	ug/kg
Bromoform	12.5U	25.0	7.80	ug/kg
Bromomethane	10.0U	20.0	6.20	ug/kg
Carbon disulfide	50.0U	100	31.0	ug/kg
Carbon tetrachloride	6.25U	12.5	3.90	ug/kg
Chlorobenzene	12.5U	25.0	7.80	ug/kg
Chloroethane	100U	200	62.0	ug/kg

Print Date: 04/15/2021 8:40:03AM

## Method Blank

Blank ID: MB for HBN 1817507 [VXX/36926]

Blank Lab ID: 1605328

QC for Samples:

1211478001, 1211478002, 1211478003

Matrix: Soil/Solid (dry weight)

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloroform	2.00U	4.00	1.00	ug/kg
Chloromethane	12.5U	25.0	7.80	ug/kg
cis-1,2-Dichloroethene	12.5U	25.0	7.80	ug/kg
cis-1,3-Dichloropropene	6.25U	12.5	3.90	ug/kg
Dibromochloromethane	2.50U	5.00	1.50	ug/kg
Dibromomethane	12.5U	25.0	7.80	ug/kg
Dichlorodifluoromethane	25.0U	50.0	15.0	ug/kg
Ethylbenzene	12.5U	25.0	7.80	ug/kg
Freon-113	50.0U	100	31.0	ug/kg
Hexachlorobutadiene	10.0U	20.0	6.20	ug/kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/kg
Methylene chloride	50.0U	100	31.0	ug/kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/kg
Naphthalene	12.5U	25.0	7.80	ug/kg
n-Butylbenzene	12.5U	25.0	7.80	ug/kg
n-Propylbenzene	12.5U	25.0	7.80	ug/kg
o-Xylene	12.5U	25.0	7.80	ug/kg
P & M -Xylene	25.0U	50.0	15.0	ug/kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/kg
Styrene	12.5U	25.0	7.80	ug/kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/kg
Tetrachloroethene	6.25U	12.5	3.90	ug/kg
Toluene	12.5U	25.0	7.80	ug/kg
trans-1,2-Dichloroethene	12.5U	25.0	7.80	ug/kg
trans-1,3-Dichloropropene	6.25U	12.5	3.90	ug/kg
Trichloroethene	2.50U	5.00	1.50	ug/kg
Trichlorofluoromethane	25.0U	50.0	15.0	ug/kg
Vinyl acetate	50.0U	100	31.0	ug/kg
Vinyl chloride	0.400U	0.800	0.250	ug/kg
Xylenes (total)	37.5U	75.0	22.8	ug/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	105	71-136		%
4-Bromofluorobenzene (surr)	91.8	55-151		%
Toluene-d8 (surr)	90.2	85-116		%

Print Date: 04/15/2021 8:40:03AM



### Method Blank

Blank ID: MB for HBN 1817507 [VXX/36926]  
Blank Lab ID: 1605328

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1211478001, 1211478002, 1211478003

### Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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#### Batch Information

Analytical Batch: VMS20636	Prep Batch: VXX36926
Analytical Method: SW8260D	Prep Method: SW5035A
Instrument: VRA Agilent GC/MS 7890B/5977A	Prep Date/Time: 4/6/2021 6:00:00AM
Analyst: JMG	Prep Initial Wt./Vol.: 50 g
Analytical Date/Time: 4/6/2021 11:32:00AM	Prep Extract Vol: 25 mL

Print Date: 04/15/2021 8:40:03AM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211478 [VXX36926]

Blank Spike Lab ID: 1605329

Date Analyzed: 04/06/2021 11:47

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211478001, 1211478002, 1211478003

## Results by SW8260D

Parameter	Blank Spike (ug/kg)			CL
	Spike	Result	Rec (%)	
1,1,1,2-Tetrachloroethane	750	813	108	(78-125)
1,1,1-Trichloroethane	750	820	109	(73-130)
1,1,2,2-Tetrachloroethane	750	783	104	(70-124)
1,1,2-Trichloroethane	750	715	95	(78-121)
1,1-Dichloroethane	750	756	101	(76-125)
1,1-Dichloroethene	750	824	110	(70-131)
1,1-Dichloropropene	750	795	106	(76-125)
1,2,3-Trichlorobenzene	750	798	106	(66-130)
1,2,3-Trichloropropane	750	758	101	(73-125)
1,2,4-Trichlorobenzene	750	746	100	(67-129)
1,2,4-Trimethylbenzene	750	760	101	(75-123)
1,2-Dibromo-3-chloropropane	750	779	104	(61-132)
1,2-Dibromoethane	750	759	101	(78-122)
1,2-Dichlorobenzene	750	744	99	(78-121)
1,2-Dichloroethane	750	773	103	(73-128)
1,2-Dichloropropane	750	796	106	(76-123)
1,3,5-Trimethylbenzene	750	743	99	(73-124)
1,3-Dichlorobenzene	750	773	103	(77-121)
1,3-Dichloropropane	750	734	98	(77-121)
1,4-Dichlorobenzene	750	777	104	(75-120)
2,2-Dichloropropane	750	829	111	(67-133)
2-Butanone (MEK)	2250	2510	111	(51-148)
2-Chlorotoluene	750	766	102	(75-122)
2-Hexanone	2250	2420	108	(53-145)
4-Chlorotoluene	750	749	100	(72-124)
4-Isopropyltoluene	750	726	97	(73-127)
4-Methyl-2-pentanone (MIBK)	2250	2450	109	(65-135)
Acetone	2250	2220	99	(36-164)
Benzene	750	762	102	(77-121)
Bromobenzene	750	774	103	(78-121)
Bromochloromethane	750	798	106	(78-125)
Bromodichloromethane	750	868	116	(75-127)
Bromoform	750	782	104	(67-132)
Bromomethane	750	847	113	(53-143)

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### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211478 [VXX36926]

Blank Spike Lab ID: 1605329

Date Analyzed: 04/06/2021 11:47

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211478001, 1211478002, 1211478003

### Results by SW8260D

Parameter	Blank Spike (ug/kg)			CL
	Spike	Result	Rec (%)	
Carbon disulfide	1130	1320	117	( 63-132 )
Carbon tetrachloride	750	847	113	( 70-135 )
Chlorobenzene	750	783	104	( 79-120 )
Chloroethane	750	796	106	( 59-139 )
Chloroform	750	788	105	( 78-123 )
Chloromethane	750	749	100	( 50-136 )
cis-1,2-Dichloroethene	750	788	105	( 77-123 )
cis-1,3-Dichloropropene	750	835	111	( 74-126 )
Dibromochloromethane	750	738	98	( 74-126 )
Dibromomethane	750	819	109	( 78-125 )
Dichlorodifluoromethane	750	898	120	( 29-149 )
Ethylbenzene	750	769	103	( 76-122 )
Freon-113	1130	1220	109	( 66-136 )
Hexachlorobutadiene	750	662	88	( 61-135 )
Isopropylbenzene (Cumene)	750	765	102	( 68-134 )
Methylene chloride	750	811	108	( 70-128 )
Methyl-t-butyl ether	1130	1140	102	( 73-125 )
Naphthalene	750	742	99	( 62-129 )
n-Butylbenzene	750	693	92	( 70-128 )
n-Propylbenzene	750	756	101	( 73-125 )
o-Xylene	750	757	101	( 77-123 )
P & M -Xylene	1500	1450	97	( 77-124 )
sec-Butylbenzene	750	720	96	( 73-126 )
Styrene	750	790	105	( 76-124 )
tert-Butylbenzene	750	714	95	( 73-125 )
Tetrachloroethene	750	741	99	( 73-128 )
Toluene	750	702	94	( 77-121 )
trans-1,2-Dichloroethene	750	795	106	( 74-125 )
trans-1,3-Dichloropropene	750	789	105	( 71-130 )
Trichloroethene	750	803	107	( 77-123 )
Trichlorofluoromethane	750	962	128	( 62-140 )
Vinyl acetate	750	764	102	( 50-151 )
Vinyl chloride	750	764	102	( 56-135 )
Xylenes (total)	2250	2210	98	( 78-124 )

Print Date: 04/15/2021 8:40:06AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211478 [VXX36926]  
 Blank Spike Lab ID: 1605329  
 Date Analyzed: 04/06/2021 11:47

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211478001, 1211478002, 1211478003

## Results by SW8260D

Parameter	Blank Spike (ug/kg)			CL
	Spike	Result	Rec (%)	
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	750	102		( 71-136 )
4-Bromofluorobenzene (surr)	750	96		( 55-151 )
Toluene-d8 (surr)	750	92		( 85-116 )

## Batch Information

Analytical Batch: **VMS20636**  
 Analytical Method: **SW8260D**  
 Instrument: **VRA Agilent GC/MS 7890B/5977A**  
 Analyst: **JMG**

Prep Batch: **VXX36926**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **04/06/2021 06:00**  
 Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: Extract Vol:

Print Date: 04/15/2021 8:40:06AM

### Matrix Spike Summary

Original Sample ID: 1211478001  
 MS Sample ID: 1605333 MS  
 MSD Sample ID: 1605334 MSD

Analysis Date: 04/06/2021 15:40  
 Analysis Date: 04/06/2021 13:31  
 Analysis Date: 04/06/2021 13:47  
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1211478001, 1211478002, 1211478003

### Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	8.05U	554	562	102	554	588	106	78-125	4.40	(< 20)
1,1,1-Trichloroethane	10.1U	554	583	105	554	607	110	73-130	4.20	(< 20)
1,1,2,2-Tetrachloroethane	0.805U	554	602	109	554	607	110	70-124	0.76	(< 20)
1,1,2-Trichloroethane	0.321U	554	568	103	554	522	94	78-121	8.60	(< 20)
1,1-Dichloroethane	10.1U	554	538	97	554	565	102	76-125	5.00	(< 20)
1,1-Dichloroethene	10.1U	554	587	106	554	592	107	70-131	0.78	(< 20)
1,1-Dichloropropene	10.1U	554	596	108	554	590	107	76-125	0.90	(< 20)
1,2,3-Trichlorobenzene	20.1U	554	718	130	554	728	132 *	66-130	1.40	(< 20)
1,2,3-Trichloropropane	0.805U	554	593	107	554	592	107	73-125	0.16	(< 20)
1,2,4-Trichlorobenzene	10.1U	554	651	117	554	635	115	67-129	2.30	(< 20)
1,2,4-Trimethylbenzene	20.1U	554	569	103	554	575	104	75-123	1.00	(< 20)
1,2-Dibromo-3-chloropropane	40.1U	554	668	121	554	652	118	61-132	2.50	(< 20)
1,2-Dibromoethane	0.402U	554	601	109	554	549	99	78-122	9.10	(< 20)
1,2-Dichlorobenzene	10.1U	554	576	104	554	601	109	78-121	4.20	(< 20)
1,2-Dichloroethane	0.805U	554	562	101	554	576	104	73-128	2.50	(< 20)
1,2-Dichloropropane	4.01U	554	569	103	554	589	106	76-123	3.50	(< 20)
1,3,5-Trimethylbenzene	10.1U	554	564	102	554	558	101	73-124	1.20	(< 20)
1,3-Dichlorobenzene	10.1U	554	587	106	554	557	101	77-121	5.20	(< 20)
1,3-Dichloropropane	4.01U	554	584	105	554	532	96	77-121	9.40	(< 20)
1,4-Dichlorobenzene	10.1U	554	582	105	554	595	107	75-120	2.20	(< 20)
2,2-Dichloropropane	10.1U	554	596	108	554	616	111	67-133	3.20	(< 20)
2-Butanone (MEK)	101U	1663	1963	118	1663	1911	115	51-148	2.90	(< 20)
2-Chlorotoluene	10.1U	554	572	103	554	569	103	75-122	0.45	(< 20)
2-Hexanone	40.1U	1663	1890	114	1663	1808	109	53-145	4.30	(< 20)
4-Chlorotoluene	10.1U	554	570	103	554	591	107	72-124	3.50	(< 20)
4-Isopropyltoluene	40.1U	554	549	99	554	536	97	73-127	2.20	(< 20)
4-Methyl-2-pentanone (MIBK)	101U	1663	1973	119	1663	1839	111	65-135	6.70	(< 20)
Acetone	101U	1663	1715	103	1663	1684	101	36-164	1.70	(< 20)
Benzene	5.00U	554	549	99	554	568	103	77-121	3.50	(< 20)
Bromobenzene	10.1U	554	589	106	554	592	107	78-121	0.63	(< 20)
Bromochloromethane	10.1U	554	571	103	554	596	108	78-125	4.20	(< 20)
Bromodichloromethane	0.805U	554	621	112	554	644	116	75-127	3.60	(< 20)
Bromoform	10.1U	554	553	100	554	538	97	67-132	2.70	(< 20)
Bromomethane	8.05U	554	599	108	554	626	113	53-143	4.30	(< 20)
Carbon disulfide	40.1U	831	934	112	831	951	115	63-132	1.90	(< 20)
Carbon tetrachloride	5.00U	554	615	111	554	632	114	70-135	2.80	(< 20)
Chlorobenzene	10.1U	554	564	102	554	562	102	79-120	0.23	(< 20)

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### Matrix Spike Summary

Original Sample ID: 1211478001  
 MS Sample ID: 1605333 MS  
 MSD Sample ID: 1605334 MSD

Analysis Date: 04/06/2021 15:40  
 Analysis Date: 04/06/2021 13:31  
 Analysis Date: 04/06/2021 13:47  
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1211478001, 1211478002, 1211478003

### Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloroethane	80.5U	554	552	100	554	558	101	59-139	1.10	(< 20)
Chloroform	1.61U	554	561	101	554	587	106	78-123	4.40	(< 20)
Chloromethane	10.1U	554	529	96	554	526	95	50-136	0.67	(< 20)
cis-1,2-Dichloroethene	10.1U	554	556	100	554	588	106	77-123	5.60	(< 20)
cis-1,3-Dichloropropene	5.00U	554	646	117	554	621	112	74-126	3.90	(< 20)
Dibromochloromethane	2.01U	554	584	105	554	540	98	74-126	7.70	(< 20)
Dibromomethane	10.1U	554	595	107	554	611	110	78-125	2.70	(< 20)
Dichlorodifluoromethane	20.1U	554	601	109	554	509	92	29-149	16.50	(< 20)
Ethylbenzene	10.1U	554	536	97	554	553	100	76-122	3.10	(< 20)
Freon-113	40.1U	831	873	105	831	883	106	66-136	1.20	(< 20)
Hexachlorobutadiene	8.05U	554	559	101	554	567	102	61-135	1.30	(< 20)
Isopropylbenzene (Cumene)	10.1U	554	520	94	554	514	93	68-134	1.00	(< 20)
Methylene chloride	40.1U	554	568	103	554	585	106	70-128	2.90	(< 20)
Methyl-t-butyl ether	40.1U	831	860	103	831	909	109	73-125	5.70	(< 20)
Naphthalene	10.1U	554	656	118	554	649	117	62-129	1.10	(< 20)
n-Butylbenzene	10.1U	554	554	100	554	582	105	70-128	4.80	(< 20)
n-Propylbenzene	10.1U	554	571	103	554	592	107	73-125	3.40	(< 20)
o-Xylene	10.1U	554	521	94	554	519	94	77-123	0.43	(< 20)
P & M -Xylene	20.1U	1105	1015	92	1105	1064	96	77-124	4.60	(< 20)
sec-Butylbenzene	10.1U	554	542	98	554	528	95	73-126	2.70	(< 20)
Styrene	10.1U	554	536	97	554	526	95	76-124	2.00	(< 20)
tert-Butylbenzene	10.1U	554	541	98	554	539	97	73-125	0.38	(< 20)
Tetrachloroethene	5.00U	554	546	99	554	527	95	73-128	3.60	(< 20)
Toluene	10.1U	554	541	98	554	508	92	77-121	6.30	(< 20)
trans-1,2-Dichloroethene	10.1U	554	595	107	554	592	107	74-125	0.62	(< 20)
trans-1,3-Dichloropropene	5.00U	554	623	112	554	574	104	71-130	8.00	(< 20)
Trichloroethene	2.01U	554	570	103	554	596	108	77-123	4.40	(< 20)
Trichlorofluoromethane	20.1U	554	588	106	554	692	125	62-140	16.30	(< 20)
Vinyl acetate	40.1U	554	568	103	554	586	106	50-151	3.10	(< 20)
Vinyl chloride	0.321U	554	539	97	554	595	107	56-135	9.90	(< 20)
Xylenes (total)	30.1U	1663	1539	93	1663	1581	95	78-124	2.90	(< 20)
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		554	542	98	554	558	101	71-136	2.90	
4-Bromofluorobenzene (surr)		923	815	88	923	822	89	55-151	0.81	
Toluene-d8 (surr)		554	522	94	554	496	90	85-116	5.10	

Print Date: 04/15/2021 8:40:07AM



### Matrix Spike Summary

Original Sample ID: 1211478001  
MS Sample ID: 1605333 MS  
MSD Sample ID: 1605334 MSD

Analysis Date:  
Analysis Date: 04/06/2021 13:31  
Analysis Date: 04/06/2021 13:47  
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1211478001, 1211478002, 1211478003

### Results by SW8260D

Parameter	Sample	Matrix Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			

### Batch Information

Analytical Batch: VMS20636  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: JMG  
Analytical Date/Time: 4/6/2021 1:31:00PM

Prep Batch: VXX36926  
Prep Method: Vol. Extraction SW8260 Field Extracted L  
Prep Date/Time: 4/6/2021 6:00:00AM  
Prep Initial Wt./Vol.: 69.95g  
Prep Extract Vol: 25.00mL

Print Date: 04/15/2021 8:40:07AM



### Method Blank

Blank ID: MB for HBN 1817551 [VXX/36931]

Blank Lab ID: 1605493

QC for Samples:

1211478001, 1211478002, 1211478003

Matrix: Soil/Solid (dry weight)

### Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.09J	2.50	0.750	mg/kg
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	100	50-150		%

### Batch Information

Analytical Batch: VFC15538

Analytical Method: AK101

Instrument: Agilent 7890A PID/FID

Analyst: S.S

Analytical Date/Time: 4/8/2021 12:39:00PM

Prep Batch: VXX36931

Prep Method: SW5035A

Prep Date/Time: 4/8/2021 6:00:00AM

Prep Initial Wt./Vol.: 50 g

Prep Extract Vol: 25 mL

Print Date: 04/15/2021 8:40:09AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211478 [VXX36931]  
 Blank Spike Lab ID: 1605494  
 Date Analyzed: 04/08/2021 12:04

Spike Duplicate ID: LCSD for HBN 1211478  
 [VXX36931]  
 Spike Duplicate Lab ID: 1605495  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211478001, 1211478002, 1211478003

## Results by AK101

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	14.4	115	12.5	13.6	109	( 60-120 )	5.70	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	1.25		101	1.25		107	( 50-150 )	5.30	
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## Batch Information

Analytical Batch: **VFC15538**  
 Analytical Method: **AK101**  
 Instrument: **Agilent 7890A PID/FID**  
 Analyst: **S.S**

Prep Batch: **VXX36931**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **04/08/2021 06:00**  
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL



## Method Blank

Blank ID: MB for HBN 1817450 [XXX/44594]  
 Blank Lab ID: 1605126

Matrix: Soil/Solid (dry weight)

QC for Samples:  
 1211478001, 1211478002

## Results by 8270D SIM (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	12.5U	25.0	6.25	ug/kg
2-Methylnaphthalene	12.5U	25.0	6.25	ug/kg
Acenaphthene	12.5U	25.0	6.25	ug/kg
Acenaphthylene	12.5U	25.0	6.25	ug/kg
Anthracene	12.5U	25.0	6.25	ug/kg
Benzo(a)Anthracene	12.5U	25.0	6.25	ug/kg
Benzo[a]pyrene	12.5U	25.0	6.25	ug/kg
Benzo[b]Fluoranthene	12.5U	25.0	6.25	ug/kg
Benzo[g,h,i]perylene	12.5U	25.0	6.25	ug/kg
Benzo[k]fluoranthene	12.5U	25.0	6.25	ug/kg
Chrysene	12.5U	25.0	6.25	ug/kg
Dibenzo[a,h]anthracene	12.5U	25.0	6.25	ug/kg
Fluoranthene	12.5U	25.0	6.25	ug/kg
Fluorene	12.5U	25.0	6.25	ug/kg
Indeno[1,2,3-c,d] pyrene	12.5U	25.0	6.25	ug/kg
Naphthalene	10.0U	20.0	5.00	ug/kg
Phenanthrene	12.5U	25.0	6.25	ug/kg
Pyrene	12.5U	25.0	6.25	ug/kg
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	78.4	58-103		%
Fluoranthene-d10 (surr)	77.2	54-113		%

## Batch Information

Analytical Batch: XMS12557  
 Analytical Method: 8270D SIM (PAH)  
 Instrument: SVA Agilent 780/5975 GC/MS  
 Analyst: CDM  
 Analytical Date/Time: 4/7/2021 3:36:00PM

Prep Batch: XXX44594  
 Prep Method: SW3550C  
 Prep Date/Time: 4/6/2021 11:44:31AM  
 Prep Initial Wt./Vol.: 22.5 g  
 Prep Extract Vol: 5 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211478 [XXX44594]

Blank Spike Lab ID: 1605127

Date Analyzed: 04/07/2021 15:56

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211478001, 1211478002

## Results by 8270D SIM (PAH)

### Blank Spike (ug/kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	111	95.9	86	(43-111)
2-Methylnaphthalene	111	97.3	88	(39-114)
Acenaphthene	111	96.6	87	(44-111)
Acenaphthylene	111	99.2	89	(39-116)
Anthracene	111	96.7	87	(50-114)
Benzo(a)Anthracene	111	94.5	85	(54-122)
Benzo[a]pyrene	111	103	93	(50-125)
Benzo[b]Fluoranthene	111	113	102	(53-128)
Benzo[g,h,i]perylene	111	109	98	(49-127)
Benzo[k]fluoranthene	111	107	96	(56-123)
Chrysene	111	99.4	89	(57-118)
Dibenzo[a,h]anthracene	111	118	106	(50-129)
Fluoranthene	111	106	95	(55-119)
Fluorene	111	102	92	(47-114)
Indeno[1,2,3-c,d] pyrene	111	124	112	(49-130)
Naphthalene	111	97.0	87	(38-111)
Phenanthrene	111	96.9	87	(49-113)
Pyrene	111	94.9	85	(55-117)

### Surrogates

2-Methylnaphthalene-d10 (surr)	111		76	(58-103)
Fluoranthene-d10 (surr)	111		76	(54-113)

## Batch Information

Analytical Batch: XMS12557

Analytical Method: 8270D SIM (PAH)

Instrument: SVA Agilent 780/5975 GC/MS

Analyst: CDM

Prep Batch: XXX44594

Prep Method: SW3550C

Prep Date/Time: 04/06/2021 11:44

Spike Init Wt./Vol.: 111 ug/kg Extract Vol: 5 mL

Dupe Init Wt./Vol.: Extract Vol:



### Matrix Spike Summary

Original Sample ID: 1211478002  
MS Sample ID: 1605128 MS  
MSD Sample ID: 1605129 MSD

Analysis Date: 04/07/2021 16:58  
Analysis Date: 04/07/2021 17:18  
Analysis Date: 04/07/2021 17:39  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211478001, 1211478002

### Results by 8270D SIM (PAH)

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	12.8U	114	96.9	86	113	102	90	43-111	4.80	(< 20)
2-Methylnaphthalene	12.8U	114	98.8	87	113	102	91	39-114	3.60	(< 20)
Acenaphthene	12.8U	114	96.4	85	113	101	90	44-111	5.00	(< 20)
Acenaphthylene	12.8U	114	102	90	113	106	95	39-116	5.10	(< 20)
Anthracene	12.8U	114	97.4	86	113	103	92	50-114	6.00	(< 20)
Benzo(a)Anthracene	12.8U	114	93.4	83	113	97.4	86	54-122	4.20	(< 20)
Benzo(a)pyrene	12.8U	114	106	94	113	112	99	50-125	4.40	(< 20)
Benzo(b)Fluoranthene	12.8U	114	111	98	113	115	102	53-128	3.80	(< 20)
Benzo(g,h,i)perylene	12.8U	114	108	96	113	113	100	49-127	4.20	(< 20)
Benzo(k)fluoranthene	12.8U	114	104	93	113	110	97	56-123	4.40	(< 20)
Chrysene	12.8U	114	98.3	87	113	101	90	57-118	3.10	(< 20)
Dibenzo(a,h)anthracene	12.8U	114	117	103	113	122	108	50-129	3.50	(< 20)
Fluoranthene	12.8U	114	103	91	113	106	95	55-119	3.20	(< 20)
Fluorene	12.8U	114	102	90	113	106	94	47-114	3.70	(< 20)
Indeno[1,2,3-c,d] pyrene	12.8U	114	122	107	113	127	113	49-130	4.40	(< 20)
Naphthalene	10.2U	114	100	89	113	103	91	38-111	2.60	(< 20)
Phenanthrene	12.8U	114	95.6	84	113	99.4	88	49-113	3.90	(< 20)
Pyrene	12.8U	114	94.1	83	113	97.9	87	55-117	4.00	(< 20)
<b>Surrogates</b>										
2-Methylnaphthalene-d10 (surr)		114	84.9	75	113	85.4	76	58-103	0.59	
Fluoranthene-d10 (surr)		114	84.0	74	113	85.5	76	54-113	1.70	

### Batch Information

Analytical Batch: XMS12557  
Analytical Method: 8270D SIM (PAH)  
Instrument: SVA Agilent 780/5975 GC/MS  
Analyst: CDM  
Analytical Date/Time: 4/7/2021 5:18:00PM

Prep Batch: XXX44594  
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml  
Prep Date/Time: 4/6/2021 11:44:31AM  
Prep Initial Wt./Vol.: 22.59g  
Prep Extract Vol: 5.00mL

Print Date: 04/15/2021 8:40:17AM



### Method Blank

Blank ID: MB for HBN 1817553 [XXX/44610]

Blank Lab ID: 1605499

QC for Samples:

1211478001, 1211478002

Matrix: Soil/Solid (dry weight)

### Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/kg
<b>Surrogates</b>				
5a Androstane (surr)	103	60-120		%

### Batch Information

Analytical Batch: XFC15889

Analytical Method: AK102

Instrument: Agilent 7890B R

Analyst: A.A

Analytical Date/Time: 4/12/2021 8:28:00PM

Prep Batch: XXX44610

Prep Method: SW3550C

Prep Date/Time: 4/9/2021 9:27:21AM

Prep Initial Wt./Vol.: 30 g

Prep Extract Vol: 5 mL

Print Date: 04/15/2021 8:40:18AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211478 [XXX44610]  
 Blank Spike Lab ID: 1605500  
 Date Analyzed: 04/12/2021 20:38

Spike Duplicate ID: LCSD for HBN 1211478  
 [XXX44610]  
 Spike Duplicate Lab ID: 1605501  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211478001, 1211478002

### Results by AK102

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Diesel Range Organics	667	691	104	667	685	103	( 75-125 )	0.90	(< 20 )	
<b>Surrogates</b>										
5a Androstane (surr)	16.7		101	16.7		100	( 60-120 )	1.60		

### Batch Information

Analytical Batch: **XFC15889**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **A.A**

Prep Batch: **XXX44610**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **04/09/2021 09:27**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 04/15/2021 8:40:21AM

## Method Blank

Blank ID: MB for HBN 1817553 [XXX/44610]

Blank Lab ID: 1605499

QC for Samples:

1211478001, 1211478002

Matrix: Soil/Solid (dry weight)

## Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	50.0U	100	43.0	mg/kg
<b>Surrogates</b>				
n-Triacontane-d62 (surr)	108	60-120		%

## Batch Information

Analytical Batch: XFC15889

Analytical Method: AK103

Instrument: Agilent 7890B R

Analyst: A.A

Analytical Date/Time: 4/12/2021 8:28:00PM

Prep Batch: XXX44610

Prep Method: SW3550C

Prep Date/Time: 4/9/2021 9:27:21AM

Prep Initial Wt./Vol.: 30 g

Prep Extract Vol: 5 mL

Print Date: 04/15/2021 8:40:24AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211478 [XXX44610]  
 Blank Spike Lab ID: 1605500  
 Date Analyzed: 04/12/2021 20:38

Spike Duplicate ID: LCSD for HBN 1211478  
 [XXX44610]  
 Spike Duplicate Lab ID: 1605501  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211478001, 1211478002

### Results by AK103

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	667	674	101	667	666	100	( 60-120 )	1.10	(< 20 )
<b>Surrogates</b>									
n-Triacontane-d62 (surr)	16.7		98	16.7		97	( 60-120 )	0.36	

### Batch Information

Analytical Batch: **XFC15889**  
 Analytical Method: **AK103**  
 Instrument: **Agilent 7890B R**  
 Analyst: **A.A**

Prep Batch: **XXX44610**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **04/09/2021 09:27**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 04/15/2021 8:40:26AM

# SHANNON & WILSON, INC.

# CHAIN-OF-CUSTODY



1211478

Page 1 of 1  
 Laboratory: S65  
 Analyst: JUSTIN NELSON

Geotechnical and Environmental Consultants  
 400 N. 34th Street, Suite 100 Seattle, WA 98103  
 (206) 632-8020  
 2043 Westport Center Drive St. Louis, MO 63146-3564  
 (314) 699-9660  
 2705 Saint Andrews Loop, Suite A Pasco, WA 99301-3578  
 (509) 946-6309

Analysis Parameters/Sample Container Description  
 (Include preservative if used)

2355 Hill Road Fairbanks, AK 99709  
 (907) 479-0800  
 3430 Fairbanks Street, Suite S Anchorage, AK 99518  
 (907) 561-2120  
 9990 Collins Way, Suite 100 Lake Oswego, OR 97035  
 (503) 223-6147  
 1321 Barnook Street, Suite 200 Denver, CO 80204  
 (303) 825-3800

PH# 365441 XO

Sample Identity	Lab No.	Time	Date Sampled	Comp. Grab	GRD / VOL	AK-J61 / B250	DPD / R30	AK-J02 / J03	PAH	8220 D-SM	Total Number of Containers	Remarks/Matrix
103311 - W1RS1	(1A-B)	6:00 P	4/2/21	X	X	X	X	X			2	SOIL
103311 - W1RS101	(2A-B)	6:05 P	4/2/21	X	X	X	X	X			2	SOIL
103311 - STB1	(3A)	---	---	X							1	LAD ANALYZED TRIP DRINK

Project Information	Sample Receipt
Project Number: <u>103311-006</u>	Total Number of Containers
Project Name: <u>CAROLINA SPEAR</u>	COC Seals/In tact? Y/N/NA
Contact: <u>Ryan Collins</u>	Received Good Cond/Cold
Ongoing Project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Delivery Method:
Sampler: <u>Ryan Collins</u>	(attach shipping bill, if any)
<b>Instructions</b>	
Requested Turnaround Time: <u>57430 AND 10-day</u>	
Special Instructions: <u>LEVEL II DENVER ANALYSIS</u>	

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>[Signature]</u> Time: <u>12:35 P</u>	Signature: _____ Time: _____	Signature: _____ Time: _____
Printed Name: <u>Ryan Collins</u> Date: <u>4/5/21</u>	Printed Name: _____ Date: _____	Printed Name: _____ Date: _____
Company: <u>SHANNON &amp; WILSON</u>	Company: _____	Company: _____
Received By: <u>1.</u>	Received By: <u>2.</u>	Received By: <u>3.</u>
Signature: _____ Time: _____	Signature: _____ Time: _____	Signature: <u>Nicole Brown</u> Time: <u>12:35</u>
Printed Name: _____ Date: _____	Printed Name: _____ Date: _____	Printed Name: <u>Nicole Brown</u> Date: <u>4/5/21</u>
Company: _____	Company: _____	Company: <u>Michael Allaman</u>

Distribution: Write - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - Job File

Received By: 3.7 Date: 4/5/21  
 Company: S&S





e-Sample Receipt Form

SGS Workorder #:

1211478



1 2 1 1 4 7 8

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
<b>Chain of Custody / Temperature Requirements</b>			<b>Yes</b>	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A			
COC accompanied samples?	Yes			
DOD: Were samples received in COC corresponding coolers?	N/A			
<input type="checkbox"/> N/A <b>**Exemption permitted if chilled &amp; collected &lt;8 hours ago, or for samples where chilling is not required</b>				
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1	@ 3.7 °C	Therm. ID: D60
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
*If >6°C, were samples collected <8 hours ago?		N/A		
If <0°C, were sample containers ice free?		N/A		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
<b>Holding Time / Documentation / Sample Condition Requirements</b>		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes			
Do samples <b>match COC**</b> (i.e., sample IDs, dates/times collected)?	Yes			
**Note: If times differ <1hr, record details & login per COC. ***Note: If sample information on containers differs from COC, SGS will default to COC information				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes			
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A	***Exemption permitted for metals (e.g. 200.8/6020B).	
<b>Volatile / LL-Hg Requirements</b>				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A			
Were all soil VOAs field extracted with MeOH+BFB?	Yes			
<b>Note to Client:</b> Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				



## Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1211478001-A	Methanol field pres. 4 C	OK			
1211478001-B	No Preservative Required	OK			
1211478002-A	Methanol field pres. 4 C	OK			
1211478002-B	No Preservative Required	OK			
1211478003-A	Methanol field pres. 4 C	OK			

### Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

**Laboratory Data Review Checklist**

Completed By:

Amber Masters

Title:

Environmental Scientist

Date:

4/27/2021

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1211478

Laboratory Report Date:

April 15, 2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg.

ADEC File Number:

2215.38.035

Hazard Identification Number:

27304

1211478

Laboratory Report Date:

April 15, 2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg.

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all the submitted sample analyses?

Yes  No  N/A  Comments:

Analyses were performed by SGS North America, Inc. in Anchorage, AK.

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

Analyses were not transferred or subcontracted.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

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CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg.

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

The laboratory sample receipt documentation noted that samples were received in good condition.

e. Data quality or usability affected?

Comments:

Data quality and usability were not affected; see above.

#### 4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

The MS Recovery for 1,2,3-trichlorobenzene did not meet QC criteria for the 8260D, the laboratory refers the reader to the LCS for accuracy requirements.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

The laboratory did not specify any corrective actions.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The laboratory did not specify an effect on data quality or usability.

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CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

All reported LOQs are less than the DEC migration to groundwater cleanup level with exception of 1,2,3-trichloropropane and 1,2-dibromoethane. These analytes have been **bolded** on the associated data table.

e. Data quality or usability affected?

Yes  No  N/A

See above.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

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ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

Method blank results were below the LOQ; however, gasoline range organics (GRO) were detected at an estimated concentration of 1.09 J  $\mu\text{g}/\text{kg}$  below the LOQ in method blank 1605493.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Method blank 1605493 is a quality-control sample for project samples *103311-WIRSI*, *103311-WIRS101*, and *103311-STB1*.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

GRO was detected below the LOQ in samples *103311-WIRSI*, *103311-WIRS101*, and *103311-STB1*. These results are considered not detected and flagged 'UB' at the LOQ due to the method blank detection.

v. Data quality or usability affected?

Comments:

Yes; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

An LCS/LCSD was reported for GRO, residual range organics (RRO) and DRO analyses. An LCS was reported for PAH and volatile organic compound (VOC) analyses.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/inorganics were not included with this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

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iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

The samples were not affected, see above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were affected; see above.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

An MS/MSD was reported for VOC and PAH analyses. An MS/MSD was not reported for GRO, DRO, or RRO.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/inorganics were not included with this work order.



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iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

The recovery for 1,2,3-trichlorobenzene was above the upper control limit in the SW8260D MSD sample.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

The MS/MSD samples associated with preparatory batch VXX35952 were performed using the project sample *103311-WIRSI*. Analyte 1,2,3-trichlorobenzene was not detected in *103311-WIRSI*; the not-detect result is not considered to be affected by the accuracy failure.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No, see above.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

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ADOT&PF Cordova Airport ARFF Bldg.

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

- iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

- iv. Data quality or usability affected?

Comments:

Data quality and usability not affected. See above.

e. Trip Blanks

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes  No  N/A  Comments:

- ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

One cooler was used to transport the project samples and trip blank.

- iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Acetone was detected below the LOQ in trip blank sample 103311-STB1. GRO was also detected; however, this is a result of laboratory contamination and the TB result is considered non-detect.

- iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

Acetone was not detected in the project samples. Results are unaffected.

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CS Site Name:

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v. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

Field duplicate sample pair 103311-WIRS1/ 103311-WIRS101 was submitted with this work order.

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R<sub>1</sub> = Sample Concentration  
R<sub>2</sub> = Field Duplicate Concentration

Yes  No  N/A  Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and/or usability was not affected.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Reusable equipment was not used for this project, so an equipment blank was not submitted with this work order.

1211478

Laboratory Report Date:

April 15, 2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

N/A; an equipment blank was not submitted with this work order.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; an equipment blank was not submitted with this work order.

iii. Data quality or usability affected?

Comments:

Data quality and usability were not affected; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

Other data flags or qualifiers were not required.

## Laboratory Report of Analysis

To: Shannon & Wilson, Inc.  
5430 Fairbanks St #3  
Anchorage, AK 99518  
561-2120

Report Number: **1211479**

Client Project: **103311-006 CORDOVA SREB**

Dear Ryan Collins,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,  
SGS North America Inc.



**Justin Nelson**  
**2021.04.23**  
**13:55:46 -08'00'**

Justin Nelson  
Project Manager  
Justin.Nelson@sgs.com

Date

### Case Narrative

SGS Client: **Shannon & Wilson, Inc.**  
SGS Project: **1211479**  
Project Name/Site: **103311-006 CORDOVA SREB**  
Project Contact: **Ryan Collins**

Refer to sample receipt form for information on sample condition.

**103311-W1R-GW1 (1211479001) PS**

2120B - Color, True - Sample was received and analyzed past hold time.

**103311-W2-GW1 (1211479003) PS**

2120B - Color, True - Sample was received and analyzed past hold time.

**1211332001(1605362MS) (1605363) MS**

300.0 - Anions - MS recovery for Fluoride is outside of QC criteria. Refer to LCS for accuracy requirements.

**1211416001MS (1605364) MS**

300.0 - Anions - MS recovery for Sulfate is outside of QC criteria. Refer to LCS for accuracy requirements.

**1211399001MS (1605673) MS**

4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

**1211463001MS (1605675) MS**

4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

**1211561001MS (1605677) MS**

4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

**1211399001MSD (1605674) MSD**

4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

**1211463001MSD (1605676) MSD**

4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

**1211561001MSD (1605678) MSD**

4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

\*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

### Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
103311-W1R-GW1	1211479001	04/02/2021	04/05/2021	Water (Surface, Eff., Ground)
103311-W1R-GW101	1211479002	04/02/2021	04/05/2021	Water (Surface, Eff., Ground)
103311-W2-GW1	1211479003	04/02/2021	04/05/2021	Water (Surface, Eff., Ground)
103311-TBW1	1211479004	04/02/2021	04/05/2021	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
SM21 2320B	Alkalinity as CaCO3 Langlier w/ Secon Ct
SM21 2340B	Calcium Hardness by ICP-MS-Langlier
SM23 2120B	Color w/ Secondary Contaminants (W)
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
EPA 300.0	EPA 300 Primary Inorganics only (W)
EPA 300.0	EPA 300 Secondary Contaminants only (W)
AK101	Gasoline Range Organics (W)
SM2330B	Langlier Index by SM2330B
EP200.8 M	Mercury in Water 200.8M ICP-MS UD (W)
EP200.8	Metals in DW by 200.8 ICP-MS Primy/Secdy
SM21 4500NO3-F	Nitrate/Nitrite Flow injection Pres.
SM21 4500-H B	pH Analysis w/ Secondary Contaminants W
SM21 4500-CN C,E	Total Cyanide SM4500 (W)
SM21 2540C	Total Dissolved Solids SM18 2540C w/ SC
EPA 524.2	Volatile Organics by 524.2 (DW)

Print Date: 04/23/2021 10:17:08AM



### Detectable Results Summary

Client Sample ID: **103311-W1R-GW1**

Lab Sample ID: 1211479001

**Inorganic Contaminants**

**Metals by ICP/MS**

**Polynuclear Aromatics GC/MS**

**Secondary Contaminants**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Barium	8.50	ug/L
Fluoride	0.101J	mg/L
Hardness (Ca Only)	51.3	mg/L
Mercury	0.248J	ug/L
Phenanthrene	0.0241J	ug/L
Alkalinity	85.5	mg/L
Calcium	20500	ug/L
Chloride	2.81	mg/L
Color, True	75.0	PCU
Copper	1.67	ug/L
Fluoride	0.101J	mg/L
HCO3 Alkalinity	85.5	mg/L
Iron	3830	ug/L
Langlier Index @ 50 degree F	-0.95	
Magnesium	3960	ug/L
Manganese	140	ug/L
pH	7.3	pH units
Sodium	6230	ug/L
Total Dissolved Solids	89.0	mg/L

Client Sample ID: **103311-W1R-GW101**

Lab Sample ID: 1211479002

**Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Phenanthrene	0.0208J	ug/L

### Detectable Results Summary

Client Sample ID: **103311-W2-GW1**

Lab Sample ID: 1211479003

**Inorganic Contaminants**

**Metals by ICP/MS**

**Polynuclear Aromatics GC/MS**

**Secondary Contaminants**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Barium	14.0	ug/L
Fluoride	0.112J	mg/L
Hardness (Ca Only)	51.4	mg/L
Mercury	0.207J	ug/L
Phenanthrene	0.0166J	ug/L
Alkalinity	90.6	mg/L
Aluminum	437	ug/L
Calcium	20600	ug/L
Chloride	6.19	mg/L
Color, True	40.0	PCU
Copper	1.79	ug/L
Fluoride	0.112J	mg/L
HCO3 Alkalinity	90.6	mg/L
Iron	1860	ug/L
Langlier Index @ 50 degree F	-0.53	
Magnesium	5710	ug/L
Manganese	87.4	ug/L
pH	7.7	pH units
Sodium	8080	ug/L
Total Dissolved Solids	112	mg/L

Client Sample ID: **103311-TBW1**

Lab Sample ID: 1211479004

**Volatile GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Methylene chloride	0.755	ug/L



Results of 103311-W1R-GW1

Client Sample ID: 103311-W1R-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479001
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Inorganic Contaminants

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Nickel, Selenium, and Thallium.

Batch Information

Analytical Batch: MMS11060
Analytical Method: EP200.8
Analyst: ACF
Analytical Date/Time: 04/08/21 13:08
Container ID: 1211479001-E

Prep Batch: MXX34074
Prep Method: E200.2
Prep Date/Time: 04/06/21 12:00
Prep Initial Wt./Vol.: 20 mL
Prep Extract Vol: 50 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row includes Fluoride.

Batch Information

Analytical Batch: WIC6147
Analytical Method: EPA 300.0
Analyst: A.A
Analytical Date/Time: 04/06/21 20:27
Container ID: 1211479001-G

Prep Batch: WXX13665
Prep Method: METHOD
Prep Date/Time: 04/06/21 11:00
Prep Initial Wt./Vol.: 10 mL
Prep Extract Vol: 10 mL



Results of 103311-W1R-GW1

Client Sample ID: 103311-W1R-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479001
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Metals by ICP/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Mercury, 0.248 J, 0.400, 0.200, ug/L, 5, 04/06/21 15:13

Batch Information

Analytical Batch: MMS11058
Analytical Method: EP200.8 M
Analyst: ACF
Analytical Date/Time: 04/06/21 15:13
Container ID: 1211479001-E
Prep Batch: MXX34073
Prep Method: E200.2
Prep Date/Time: 04/06/21 09:00
Prep Initial Wt./Vol.: 50 mL
Prep Extract Vol: 50 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Hardness (Ca Only), 51.3, 5.00, 5.00, mg/L, 1, 04/08/21 13:08

Batch Information

Analytical Batch: MMS11060
Analytical Method: SM21 2340B
Analyst: ACF
Analytical Date/Time: 04/08/21 13:08
Container ID: 1211479001-E
Prep Batch: MXX34074
Prep Method: E200.2
Prep Date/Time: 04/06/21 12:00
Prep Initial Wt./Vol.: 20 mL
Prep Extract Vol: 50 mL



Results of 103311-W1R-GW1

Client Sample ID: 103311-W1R-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479001
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

Batch Information

Analytical Batch: XMS12561
Analytical Method: 8270D SIM LV (PAH)
Analyst: CDM
Analytical Date/Time: 04/10/21 17:02
Container ID: 1211479001-A

Prep Batch: XXX44606
Prep Method: SW3535A
Prep Date/Time: 04/08/21 09:28
Prep Initial Wt./Vol.: 226 mL
Prep Extract Vol: 1 mL



### Results of 103311-W1R-GW1

Client Sample ID: **103311-W1R-GW1**  
 Client Project ID: **103311-006 CORDOVA SREB**  
 Lab Sample ID: 1211479001  
 Lab Project ID: 1211479

Collection Date: 04/02/21 17:00  
 Received Date: 04/05/21 12:35  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Secondary Contaminants

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Aluminum	10.0 U	20.0		ug/L	1	(<50)	04/08/21 13:08
Calcium	20500	500		ug/L	1		04/08/21 13:08
Copper	1.67	1.00		ug/L	1	(<1000)	04/08/21 13:08
Iron	3830 *	250		ug/L	1	(<300)	04/08/21 13:08
Magnesium	3960	50.0		ug/L	1		04/08/21 13:08
Manganese	140 *	1.00		ug/L	1	(<50)	04/08/21 13:08
Silver	0.500 U	1.00		ug/L	1	(<100)	04/08/21 13:08
Sodium	6230	500		ug/L	1		04/08/21 13:08
Zinc	5.00 U	10.0		ug/L	1	(<5000)	04/08/21 13:08

### Batch Information

Analytical Batch: MMS11060  
 Analytical Method: EP200.8  
 Analyst: ACF  
 Analytical Date/Time: 04/08/21 13:08  
 Container ID: 1211479001-E

Prep Batch: MXX34074  
 Prep Method: E200.2  
 Prep Date/Time: 04/06/21 12:00  
 Prep Initial Wt./Vol.: 20 mL  
 Prep Extract Vol: 50 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloride	2.81	0.200	0.0500	mg/L	1	(<250)	04/06/21 20:27
Fluoride	0.101 J	0.200	0.0500	mg/L	1	(<2)	04/06/21 20:27
Sulfate	0.100 U	0.200	0.0500	mg/L	1	(<250)	04/06/21 20:27

### Batch Information

Analytical Batch: WIC6147  
 Analytical Method: EPA 300.0  
 Analyst: A.A  
 Analytical Date/Time: 04/06/21 20:27  
 Container ID: 1211479001-G

Prep Batch: WXX13665  
 Prep Method: METHOD  
 Prep Date/Time: 04/06/21 11:00  
 Prep Initial Wt./Vol.: 10 mL  
 Prep Extract Vol: 10 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Alkalinity	85.5	10.0	2.50	mg/L	1		04/06/21 16:21
CO3 Alkalinity	5.00 U	10.0	2.50	mg/L	1		04/06/21 16:21
HCO3 Alkalinity	85.5	10.0	2.50	mg/L	1		04/06/21 16:21
OH Alkalinity	5.00 U	10.0	2.50	mg/L	1		04/06/21 16:21



Results of 103311-W1R-GW1

Client Sample ID: 103311-W1R-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479001
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Secondary Contaminants

Batch Information

Analytical Batch: WTI5598
Analytical Method: SM21 2320B
Analyst: EWW
Analytical Date/Time: 04/06/21 16:21
Container ID: 1211479001-G

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Total Dissolved Solids, 89.0, 10.0, 3.10, mg/L, 1, 04/08/21 11:32

Batch Information

Analytical Batch: STS6940
Analytical Method: SM21 2540C
Analyst: S.S
Analytical Date/Time: 04/08/21 11:32
Container ID: 1211479001-G

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: pH, 7.3, 0.100, 0.100, pH units, 1, (6.5-8.5), 04/06/21 16:21

Batch Information

Analytical Batch: WTI5596
Analytical Method: SM21 4500-H B
Analyst: EWW
Analytical Date/Time: 04/06/21 16:21
Container ID: 1211479001-G

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Color, True, 75.0 \*, 25.0, 25.0, PCU, 5, (<15), 04/05/21 16:46

Batch Information

Analytical Batch: WAT11676
Analytical Method: SM23 2120B
Analyst: EWW
Analytical Date/Time: 04/05/21 16:46
Container ID: 1211479001-G

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed

Print Date: 04/23/2021 10:17:11AM

J flagging is activated



**Results of 103311-W1R-GW1**

Client Sample ID: **103311-W1R-GW1**  
Client Project ID: **103311-006 CORDOVA SREB**  
Lab Sample ID: 1211479001  
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00  
Received Date: 04/05/21 12:35  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Secondary Contaminants**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Langlier Index @ 50 degree F	-0.95				1		04/19/21 11:29

**Batch Information**

Analytical Batch: WAT11679  
Analytical Method: SM2330B  
Analyst: EWW  
Analytical Date/Time: 04/19/21 11:29  
Container ID: 1211479001-H





Results of 103311-W1R-GW1

Client Sample ID: 103311-W1R-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479001
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15890
Analytical Method: AK102
Analyst: A.A
Analytical Date/Time: 04/09/21 09:09
Container ID: 1211479001-C
Prep Batch: XXX44604
Prep Method: SW3520C
Prep Date/Time: 04/07/21 16:32
Prep Initial Wt./Vol.: 230 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15890
Analytical Method: AK103
Analyst: A.A
Analytical Date/Time: 04/09/21 09:09
Container ID: 1211479001-C
Prep Batch: XXX44604
Prep Method: SW3520C
Prep Date/Time: 04/07/21 16:32
Prep Initial Wt./Vol.: 230 mL
Prep Extract Vol: 1 mL



Results of 103311-W1R-GW1

Client Sample ID: 103311-W1R-GW1  
Client Project ID: 103311-006 CORDOVA SREB  
Lab Sample ID: 1211479001  
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00  
Received Date: 04/05/21 12:35  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		04/08/21 16:19
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	96	50-150		%	1		04/08/21 16:19

Batch Information

Analytical Batch: VFC15539  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 04/08/21 16:19  
Container ID: 1211479001-J

Prep Batch: VXX36933  
Prep Method: SW5030B  
Prep Date/Time: 04/08/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of 103311-W1R-GW1

Client Sample ID: 103311-W1R-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479001
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



### Results of 103311-W1R-GW1

Client Sample ID: **103311-W1R-GW1**  
 Client Project ID: **103311-006 CORDOVA SREB**  
 Lab Sample ID: 1211479001  
 Lab Project ID: 1211479

Collection Date: 04/02/21 17:00  
 Received Date: 04/05/21 12:35  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Dibromochloromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
Dibromomethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
Dichlorodifluoromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
Ethylbenzene	0.250 U	0.500	0.200	ug/L	1	(<700)	04/14/21 21:12
Hexachlorobutadiene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
Isopropylbenzene (Cumene)	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
Methylene chloride	0.250 U	0.500	0.400	ug/L	1	(<5)	04/14/21 21:12
Methyl-t-butyl ether	0.500 U	1.00	0.310	ug/L	1		04/14/21 21:12
Naphthalene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
n-Butylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
n-Propylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
o-Xylene	0.250 U	0.500	0.200	ug/L	1		04/14/21 21:12
P & M -Xylene	0.250 U	0.500	0.400	ug/L	1		04/14/21 21:12
sec-Butylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
Styrene	0.250 U	0.500	0.200	ug/L	1	(<100)	04/14/21 21:12
tert-Butylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
Tetrachloroethene	0.250 U	0.500	0.150	ug/L	1	(<5)	04/14/21 21:12
Toluene	0.250 U	0.500	0.200	ug/L	1	(<1000)	04/14/21 21:12
Total Trihalomethanes	1.00 U	2.00	0.600	ug/L	1	(<80)	04/14/21 21:12
trans-1,2-Dichloroethene	0.250 U	0.500	0.200	ug/L	1	(<100)	04/14/21 21:12
trans-1,3-Dichloropropene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
Trichloroethene	0.250 U	0.500	0.200	ug/L	1	(<5)	04/14/21 21:12
Trichlorofluoromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:12
Vinyl chloride	0.200 U	0.400	0.200	ug/L	1	(<2)	04/14/21 21:12
Xylenes (total)	0.500 U	0.500	0.500	ug/L	1	(<10000)	04/14/21 21:12
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	104	70-130		%	1		04/14/21 21:12
4-Bromofluorobenzene (surr)	100	70-130		%	1		04/14/21 21:12
Toluene-d8 (surr)	101	70-130		%	1		04/14/21 21:12

### Batch Information

Analytical Batch: VMS20647  
 Analytical Method: EPA 524.2  
 Analyst: NRB  
 Analytical Date/Time: 04/14/21 21:12  
 Container ID: 1211479001-K

Prep Batch: VXX36943  
 Prep Method: SW5030B  
 Prep Date/Time: 04/14/21 11:29  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



Results of 103311-W1R-GW1

Client Sample ID: 103311-W1R-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479001
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Waters Department

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Cyanide, 0.0025 U, 0.0050, 0.0020, mg/L, 1, 04/14/21 14:27

Batch Information

Analytical Batch: WDA4963
Analytical Method: SM21 4500-CN C,E
Analyst: EWW
Analytical Date/Time: 04/14/21 14:27
Container ID: 1211479001-F
Prep Batch: WXX13669
Prep Method: METHOD
Prep Date/Time: 04/14/21 11:03
Prep Initial Wt./Vol.: 6 mL
Prep Extract Vol: 6 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Total Nitrate/Nitrite-N, 0.100 U, 0.200, 0.0500, mg/L, 2, 04/09/21 13:06

Batch Information

Analytical Batch: WFI2922
Analytical Method: SM21 4500NO3-F
Analyst: EBH
Analytical Date/Time: 04/09/21 13:06
Container ID: 1211479001-E



Results of 103311-W1R-GW101

Client Sample ID: 103311-W1R-GW101
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479002
Lab Project ID: 1211479

Collection Date: 04/02/21 17:10
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

Batch Information

Analytical Batch: XMS12561
Analytical Method: 8270D SIM LV (PAH)
Analyst: CDM
Analytical Date/Time: 04/10/21 17:24
Container ID: 1211479002-A

Prep Batch: XXX44606
Prep Method: SW3535A
Prep Date/Time: 04/08/21 09:28
Prep Initial Wt./Vol.: 210 mL
Prep Extract Vol: 1 mL



Results of 103311-W1R-GW101

Client Sample ID: 103311-W1R-GW101
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479002
Lab Project ID: 1211479

Collection Date: 04/02/21 17:10
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 0.341 U, 0.682, 0.205, mg/L, 1, 04/09/21 09:19

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 94.9, 50-150, %, 1, 04/09/21 09:19

Batch Information

Analytical Batch: XFC15890
Analytical Method: AK102
Analyst: A.A
Analytical Date/Time: 04/09/21 09:19
Container ID: 1211479002-C
Prep Batch: XXX44604
Prep Method: SW3520C
Prep Date/Time: 04/07/21 16:32
Prep Initial Wt./Vol.: 220 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 0.284 U, 0.568, 0.170, mg/L, 1, 04/09/21 09:19

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 107, 50-150, %, 1, 04/09/21 09:19

Batch Information

Analytical Batch: XFC15890
Analytical Method: AK103
Analyst: A.A
Analytical Date/Time: 04/09/21 09:19
Container ID: 1211479002-C
Prep Batch: XXX44604
Prep Method: SW3520C
Prep Date/Time: 04/07/21 16:32
Prep Initial Wt./Vol.: 220 mL
Prep Extract Vol: 1 mL



Results of 103311-W2-GW1

Client Sample ID: 103311-W2-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479003
Lab Project ID: 1211479

Collection Date: 04/02/21 20:45
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Inorganic Contaminants

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Nickel, Selenium, and Thallium.

Batch Information

Analytical Batch: MMS11060
Analytical Method: EP200.8
Analyst: ACF
Analytical Date/Time: 04/08/21 13:29
Container ID: 1211479003-H

Prep Batch: MXX34074
Prep Method: E200.2
Prep Date/Time: 04/06/21 12:00
Prep Initial Wt./Vol.: 20 mL
Prep Extract Vol: 50 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row includes Fluoride.

Batch Information

Analytical Batch: WIC6147
Analytical Method: EPA 300.0
Analyst: A.A
Analytical Date/Time: 04/06/21 21:05
Container ID: 1211479003-G

Prep Batch: WXX13665
Prep Method: METHOD
Prep Date/Time: 04/06/21 11:00
Prep Initial Wt./Vol.: 10 mL
Prep Extract Vol: 10 mL





Results of 103311-W2-GW1

Client Sample ID: 103311-W2-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479003
Lab Project ID: 1211479

Collection Date: 04/02/21 20:45
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Metals by ICP/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Mercury, 0.207 J, 0.400, 0.200, ug/L, 5, 04/06/21 15:19

Batch Information

Analytical Batch: MMS11058
Analytical Method: EP200.8 M
Analyst: ACF
Analytical Date/Time: 04/06/21 15:19
Container ID: 1211479003-H
Prep Batch: MXX34073
Prep Method: E200.2
Prep Date/Time: 04/06/21 09:00
Prep Initial Wt./Vol.: 50 mL
Prep Extract Vol: 50 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Hardness (Ca Only), 51.4, 5.00, 5.00, mg/L, 1, 04/08/21 13:29

Batch Information

Analytical Batch: MMS11060
Analytical Method: SM21 2340B
Analyst: ACF
Analytical Date/Time: 04/08/21 13:29
Container ID: 1211479003-H
Prep Batch: MXX34074
Prep Method: E200.2
Prep Date/Time: 04/06/21 12:00
Prep Initial Wt./Vol.: 20 mL
Prep Extract Vol: 50 mL



Results of 103311-W2-GW1

Client Sample ID: 103311-W2-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479003
Lab Project ID: 1211479

Collection Date: 04/02/21 20:45
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

Batch Information

Analytical Batch: XMS12561
Analytical Method: 8270D SIM LV (PAH)
Analyst: CDM
Analytical Date/Time: 04/10/21 17:45
Container ID: 1211479003-A

Prep Batch: XXX44606
Prep Method: SW3535A
Prep Date/Time: 04/08/21 09:28
Prep Initial Wt./Vol.: 230 mL
Prep Extract Vol: 1 mL



**Results of 103311-W2-GW1**

Client Sample ID: **103311-W2-GW1**  
 Client Project ID: **103311-006 CORDOVA SREB**  
 Lab Sample ID: 1211479003  
 Lab Project ID: 1211479

Collection Date: 04/02/21 20:45  
 Received Date: 04/05/21 12:35  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Secondary Contaminants**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Aluminum	437 *	20.0		ug/L	1	(<50)	04/08/21 13:29
Calcium	20600	500		ug/L	1		04/08/21 13:29
Copper	1.79	1.00		ug/L	1	(<1000)	04/08/21 13:29
Iron	1860 *	250		ug/L	1	(<300)	04/08/21 13:29
Magnesium	5710	50.0		ug/L	1		04/08/21 13:29
Manganese	87.4 *	1.00		ug/L	1	(<50)	04/08/21 13:29
Silver	0.500 U	1.00		ug/L	1	(<100)	04/08/21 13:29
Sodium	8080	500		ug/L	1		04/08/21 13:29
Zinc	5.00 U	10.0		ug/L	1	(<5000)	04/08/21 13:29

**Batch Information**

Analytical Batch: MMS11060  
 Analytical Method: EP200.8  
 Analyst: ACF  
 Analytical Date/Time: 04/08/21 13:29  
 Container ID: 1211479003-H

Prep Batch: MXX34074  
 Prep Method: E200.2  
 Prep Date/Time: 04/06/21 12:00  
 Prep Initial Wt./Vol.: 20 mL  
 Prep Extract Vol: 50 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloride	6.19	0.200	0.0500	mg/L	1	(<250)	04/06/21 21:05
Fluoride	0.112 J	0.200	0.0500	mg/L	1	(<2)	04/06/21 21:05
Sulfate	0.100 U	0.200	0.0500	mg/L	1	(<250)	04/06/21 21:05

**Batch Information**

Analytical Batch: WIC6147  
 Analytical Method: EPA 300.0  
 Analyst: A.A  
 Analytical Date/Time: 04/06/21 21:05  
 Container ID: 1211479003-G

Prep Batch: WXX13665  
 Prep Method: METHOD  
 Prep Date/Time: 04/06/21 11:00  
 Prep Initial Wt./Vol.: 10 mL  
 Prep Extract Vol: 10 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Alkalinity	90.6	10.0	2.50	mg/L	1		04/06/21 16:39
CO3 Alkalinity	5.00 U	10.0	2.50	mg/L	1		04/06/21 16:39
HCO3 Alkalinity	90.6	10.0	2.50	mg/L	1		04/06/21 16:39
OH Alkalinity	5.00 U	10.0	2.50	mg/L	1		04/06/21 16:39



Results of 103311-W2-GW1

Client Sample ID: 103311-W2-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479003
Lab Project ID: 1211479

Collection Date: 04/02/21 20:45
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Secondary Contaminants

Batch Information

Analytical Batch: WTI5598
Analytical Method: SM21 2320B
Analyst: EWW
Analytical Date/Time: 04/06/21 16:39
Container ID: 1211479003-G

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Total Dissolved Solids, 112, 10.0, 3.10, mg/L, 1, 04/08/21 11:32

Batch Information

Analytical Batch: STS6940
Analytical Method: SM21 2540C
Analyst: S.S
Analytical Date/Time: 04/08/21 11:32
Container ID: 1211479003-G

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: pH, 7.7, 0.100, 0.100, pH units, 1, (6.5-8.5), 04/06/21 16:39

Batch Information

Analytical Batch: WTI5596
Analytical Method: SM21 4500-H B
Analyst: EWW
Analytical Date/Time: 04/06/21 16:39
Container ID: 1211479003-G

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Color, True, 40.0 \*, 10.0, 10.0, PCU, 2, (<15), 04/05/21 16:46

Batch Information

Analytical Batch: WAT11676
Analytical Method: SM23 2120B
Analyst: EWW
Analytical Date/Time: 04/05/21 16:46
Container ID: 1211479003-G

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed

Print Date: 04/23/2021 10:17:11AM

J flagging is activated



**Results of 103311-W2-GW1**

Client Sample ID: **103311-W2-GW1**  
Client Project ID: **103311-006 CORDOVA SREB**  
Lab Sample ID: 1211479003  
Lab Project ID: 1211479

Collection Date: 04/02/21 20:45  
Received Date: 04/05/21 12:35  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Secondary Contaminants**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Langlier Index @ 50 degree F	-0.53				1		04/19/21 11:29

**Batch Information**

Analytical Batch: WAT11679  
Analytical Method: SM2330B  
Analyst: EWW  
Analytical Date/Time: 04/19/21 11:29  
Container ID: 1211479003-G



Results of 103311-W2-GW1

Client Sample ID: 103311-W2-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479003
Lab Project ID: 1211479

Collection Date: 04/02/21 20:45
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15890
Analytical Method: AK102
Analyst: A.A
Analytical Date/Time: 04/09/21 09:29
Container ID: 1211479003-C
Prep Batch: XXX44604
Prep Method: SW3520C
Prep Date/Time: 04/07/21 16:32
Prep Initial Wt./Vol.: 225 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15890
Analytical Method: AK103
Analyst: A.A
Analytical Date/Time: 04/09/21 09:29
Container ID: 1211479003-C
Prep Batch: XXX44604
Prep Method: SW3520C
Prep Date/Time: 04/07/21 16:32
Prep Initial Wt./Vol.: 225 mL
Prep Extract Vol: 1 mL



Results of 103311-W2-GW1

Client Sample ID: 103311-W2-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479003
Lab Project ID: 1211479

Collection Date: 04/02/21 20:45
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 7 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Gasoline Range Organics and 4-Bromofluorobenzene (surr).

Batch Information

Analytical Batch: VFC15539
Analytical Method: AK101
Analyst: S.S
Analytical Date/Time: 04/08/21 16:37
Container ID: 1211479003-J
Prep Batch: VXX36933
Prep Method: SW5030B
Prep Date/Time: 04/08/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



**Results of 103311-W2-GW1**

Client Sample ID: **103311-W2-GW1**  
 Client Project ID: **103311-006 CORDOVA SREB**  
 Lab Sample ID: 1211479003  
 Lab Project ID: 1211479

Collection Date: 04/02/21 20:45  
 Received Date: 04/05/21 12:35  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
1,1,1-Trichloroethane	0.250 U	0.500	0.150	ug/L	1	(<200)	04/14/21 21:35
1,1,2,2-Tetrachloroethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
1,1,2-Trichloroethane	0.250 U	0.500	0.150	ug/L	1	(<5)	04/14/21 21:35
1,1-Dichloroethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
1,1-Dichloroethene	0.250 U	0.500	0.150	ug/L	1	(<7)	04/14/21 21:35
1,1-Dichloropropene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
1,2,3-Trichlorobenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
1,2,3-Trichloropropane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
1,2,4-Trichlorobenzene	0.250 U	0.500	0.150	ug/L	1	(<70)	04/14/21 21:35
1,2,4-Trimethylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
1,2-Dibromo-3-chloropropane	1.00 U	2.00	0.620	ug/L	1		04/14/21 21:35
1,2-Dibromoethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
1,2-Dichlorobenzene	0.250 U	0.500	0.250	ug/L	1	(<600)	04/14/21 21:35
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1	(<5)	04/14/21 21:35
1,2-Dichloropropane	0.250 U	0.500	0.200	ug/L	1	(<5)	04/14/21 21:35
1,3,5-Trimethylbenzene	0.500 U	1.00	0.150	ug/L	1		04/14/21 21:35
1,3-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		04/14/21 21:35
1,3-Dichloropropane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1	(<75)	04/14/21 21:35
2,2-Dichloropropane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
2-Chlorotoluene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
4-Chlorotoluene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
4-Isopropyltoluene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
Benzene	0.250 U	0.500	0.200	ug/L	1	(<5)	04/14/21 21:35
Bromobenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
Bromochloromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
Bromodichloromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
Bromoform	0.250 U	0.500	0.250	ug/L	1		04/14/21 21:35
Bromomethane	1.00 U	2.00	0.620	ug/L	1		04/14/21 21:35
Carbon tetrachloride	0.250 U	0.500	0.150	ug/L	1	(<5)	04/14/21 21:35
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1	(<100)	04/14/21 21:35
Chloroethane	0.500 U	1.00	0.310	ug/L	1		04/14/21 21:35
Chloroform	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35
Chloromethane	1.00 U	2.00	0.600	ug/L	1		04/14/21 21:35
cis-1,2-Dichloroethene	0.250 U	0.500	0.200	ug/L	1	(<70)	04/14/21 21:35
cis-1,3-Dichloropropene	0.500 U	1.00	0.250	ug/L	1		04/14/21 21:35

Print Date: 04/23/2021 10:17:11AM

J flagging is activated





Results of 103311-W2-GW1

Client Sample ID: 103311-W2-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479003
Lab Project ID: 1211479

Collection Date: 04/02/21 20:45
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Includes rows for various chemical compounds like Dibromochloromethane, Ethylbenzene, and Xylenes, as well as a Surrogates section.

Batch Information

Analytical Batch: VMS20647
Analytical Method: EPA 524.2
Analyst: NRB
Analytical Date/Time: 04/14/21 21:35
Container ID: 1211479003-K

Prep Batch: VXX36943
Prep Method: SW5030B
Prep Date/Time: 04/14/21 11:29
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of 103311-W2-GW1

Client Sample ID: 103311-W2-GW1
Client Project ID: 103311-006 CORDOVA SREB
Lab Sample ID: 1211479003
Lab Project ID: 1211479

Collection Date: 04/02/21 20:45
Received Date: 04/05/21 12:35
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Waters Department

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Cyanide, 0.0025 U, 0.0050, 0.0020, mg/L, 1, 04/14/21 14:29

Batch Information

Analytical Batch: WDA4963
Analytical Method: SM21 4500-CN C,E
Analyst: EWW
Analytical Date/Time: 04/14/21 14:29
Container ID: 1211479003-F
Prep Batch: WXX13669
Prep Method: METHOD
Prep Date/Time: 04/14/21 11:03
Prep Initial Wt./Vol.: 6 mL
Prep Extract Vol: 6 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Total Nitrate/Nitrite-N, 0.100 U, 0.200, 0.0500, mg/L, 2, 04/09/21 13:08

Batch Information

Analytical Batch: WFI2922
Analytical Method: SM21 4500NO3-F
Analyst: EBH
Analytical Date/Time: 04/09/21 13:08
Container ID: 1211479003-E



Results of **103311-TBW1**

Client Sample ID: **103311-TBW1**  
Client Project ID: **103311-006 CORDOVA SREB**  
Lab Sample ID: 1211479004  
Lab Project ID: 1211479

Collection Date: 04/02/21 17:00  
Received Date: 04/05/21 12:35  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		04/08/21 15:08
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	97.5	50-150		%	1		04/08/21 15:08

**Batch Information**

Analytical Batch: VFC15539  
Analytical Method: AK101  
Analyst: S.S  
Analytical Date/Time: 04/08/21 15:08  
Container ID: 1211479004-A

Prep Batch: VXX36933  
Prep Method: SW5030B  
Prep Date/Time: 04/08/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



**Results of 103311-TBW1**

Client Sample ID: **103311-TBW1**  
 Client Project ID: **103311-006 CORDOVA SREB**  
 Lab Sample ID: 1211479004  
 Lab Project ID: 1211479

Collection Date: 04/02/21 17:00  
 Received Date: 04/05/21 12:35  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
1,1,1-Trichloroethane	0.250 U	0.500	0.150	ug/L	1	(<200)	04/14/21 19:16
1,1,2,2-Tetrachloroethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
1,1,2-Trichloroethane	0.250 U	0.500	0.150	ug/L	1	(<5)	04/14/21 19:16
1,1-Dichloroethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
1,1-Dichloroethene	0.250 U	0.500	0.150	ug/L	1	(<7)	04/14/21 19:16
1,1-Dichloropropene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
1,2,3-Trichlorobenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
1,2,3-Trichloropropane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
1,2,4-Trichlorobenzene	0.250 U	0.500	0.150	ug/L	1	(<70)	04/14/21 19:16
1,2,4-Trimethylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
1,2-Dibromo-3-chloropropane	1.00 U	2.00	0.620	ug/L	1		04/14/21 19:16
1,2-Dibromoethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
1,2-Dichlorobenzene	0.250 U	0.500	0.250	ug/L	1	(<600)	04/14/21 19:16
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1	(<5)	04/14/21 19:16
1,2-Dichloropropane	0.250 U	0.500	0.200	ug/L	1	(<5)	04/14/21 19:16
1,3,5-Trimethylbenzene	0.500 U	1.00	0.150	ug/L	1		04/14/21 19:16
1,3-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		04/14/21 19:16
1,3-Dichloropropane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1	(<75)	04/14/21 19:16
2,2-Dichloropropane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
2-Chlorotoluene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
4-Chlorotoluene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
4-Isopropyltoluene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Benzene	0.250 U	0.500	0.200	ug/L	1	(<5)	04/14/21 19:16
Bromobenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Bromochloromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Bromodichloromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Bromoform	0.250 U	0.500	0.250	ug/L	1		04/14/21 19:16
Bromomethane	1.00 U	2.00	0.620	ug/L	1		04/14/21 19:16
Carbon tetrachloride	0.250 U	0.500	0.150	ug/L	1	(<5)	04/14/21 19:16
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1	(<100)	04/14/21 19:16
Chloroethane	0.500 U	1.00	0.310	ug/L	1		04/14/21 19:16
Chloroform	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Chloromethane	1.00 U	2.00	0.600	ug/L	1		04/14/21 19:16
cis-1,2-Dichloroethene	0.250 U	0.500	0.200	ug/L	1	(<70)	04/14/21 19:16
cis-1,3-Dichloropropene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16

Print Date: 04/23/2021 10:17:11AM

J flagging is activated



**Results of 103311-TBW1**

Client Sample ID: **103311-TBW1**  
 Client Project ID: **103311-006 CORDOVA SREB**  
 Lab Sample ID: 1211479004  
 Lab Project ID: 1211479

Collection Date: 04/02/21 17:00  
 Received Date: 04/05/21 12:35  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Dibromochloromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Dibromomethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Dichlorodifluoromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Ethylbenzene	0.250 U	0.500	0.200	ug/L	1	(<700)	04/14/21 19:16
Hexachlorobutadiene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Isopropylbenzene (Cumene)	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Methylene chloride	0.755	0.500	0.400	ug/L	1	(<5)	04/14/21 19:16
Methyl-t-butyl ether	0.500 U	1.00	0.310	ug/L	1		04/14/21 19:16
Naphthalene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
n-Butylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
n-Propylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
o-Xylene	0.250 U	0.500	0.200	ug/L	1		04/14/21 19:16
P & M -Xylene	0.250 U	0.500	0.400	ug/L	1		04/14/21 19:16
sec-Butylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Styrene	0.250 U	0.500	0.200	ug/L	1	(<100)	04/14/21 19:16
tert-Butylbenzene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Tetrachloroethene	0.250 U	0.500	0.150	ug/L	1	(<5)	04/14/21 19:16
Toluene	0.250 U	0.500	0.200	ug/L	1	(<1000)	04/14/21 19:16
Total Trihalomethanes	1.00 U	2.00	0.600	ug/L	1	(<80)	04/14/21 19:16
trans-1,2-Dichloroethene	0.250 U	0.500	0.200	ug/L	1	(<100)	04/14/21 19:16
trans-1,3-Dichloropropene	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Trichloroethene	0.250 U	0.500	0.200	ug/L	1	(<5)	04/14/21 19:16
Trichlorofluoromethane	0.500 U	1.00	0.250	ug/L	1		04/14/21 19:16
Vinyl chloride	0.200 U	0.400	0.200	ug/L	1	(<2)	04/14/21 19:16
Xylenes (total)	0.500 U	0.500	0.500	ug/L	1	(<10000)	04/14/21 19:16
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	70-130		%	1		04/14/21 19:16
4-Bromofluorobenzene (surr)	102	70-130		%	1		04/14/21 19:16
Toluene-d8 (surr)	101	70-130		%	1		04/14/21 19:16

**Batch Information**

Analytical Batch: VMS20647  
 Analytical Method: EPA 524.2  
 Analyst: NRB  
 Analytical Date/Time: 04/14/21 19:16  
 Container ID: 1211479004-B

Prep Batch: VXX36943  
 Prep Method: SW5030B  
 Prep Date/Time: 04/14/21 11:29  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



### Method Blank

Blank ID: MB for HBN 1817441 [MXX/34073]  
Blank Lab ID: 1605080

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1211479001, 1211479003

### Results by EP200.8 M

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Mercury	0.0400U	0.0800	0.0400	ug/L

### Batch Information

Analytical Batch: MMS11058  
Analytical Method: EP200.8 M  
Instrument: Perkin Elmer Nexlon P5  
Analyst: ACF  
Analytical Date/Time: 4/6/2021 2:41:57PM

Prep Batch: MXX34073  
Prep Method: E200.2  
Prep Date/Time: 4/6/2021 9:00:00AM  
Prep Initial Wt./Vol.: 50 mL  
Prep Extract Vol: 50 mL

Print Date: 04/23/2021 10:17:14AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [MXX34073]  
Blank Spike Lab ID: 1605081  
Date Analyzed: 04/06/2021 14:38

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by EP200.8 M

Parameter	Blank Spike (ug/L)			CL
	Spike	Result	Rec (%)	
Mercury	4	4.21	105	( 85-115 )

### Batch Information

Analytical Batch: **MMS11058**  
Analytical Method: **EP200.8 M**  
Instrument: **Perkin Elmer Nexlon P5**  
Analyst: **ACF**

Prep Batch: **MXX34073**  
Prep Method: **E200.2**  
Prep Date/Time: **04/06/2021 09:00**  
Spike Init Wt./Vol.: 4 ug/L Extract Vol: 50 mL  
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 04/23/2021 10:17:16AM



### Matrix Spike Summary

Original Sample ID: 1211479001  
MS Sample ID: 1605082 MS  
MSD Sample ID:

Analysis Date: 04/06/2021 15:13  
Analysis Date: 04/06/2021 15:16  
Analysis Date:  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by EP200.8 M

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Mercury	0.248J	20.0	25.6	127				70-130		

### Batch Information

Analytical Batch: MMS11058  
Analytical Method: EP200.8 M  
Instrument: Perkin Elmer NexIon P5  
Analyst: ACF  
Analytical Date/Time: 4/6/2021 3:16:00PM

Prep Batch: MXX34073  
Prep Method: DW Prep for HG 200.8 NonTurb UnDigested  
Prep Date/Time: 4/6/2021 9:00:00AM  
Prep Initial Wt./Vol.: 50.00mL  
Prep Extract Vol: 50.00mL

Print Date: 04/23/2021 10:17:18AM



## Method Blank

Blank ID: MB for HBN 1817452 [MXX/34074]

Blank Lab ID: 1605132

QC for Samples:

1211479001, 1211479003

Matrix: Water (Surface, Eff., Ground)

## Results by EP200.8

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Aluminum	10.0U	20.0	6.20	ug/L
Antimony	0.500U	1.00	0.310	ug/L
Arsenic	2.50U	5.00	1.50	ug/L
Barium	1.50U	3.00	0.940	ug/L
Beryllium	0.200U	0.400	0.130	ug/L
Cadmium	0.250U	0.500	0.150	ug/L
Calcium	250U	500	150	ug/L
Chromium	1.00U	2.00	0.800	ug/L
Copper	0.500U	1.00	0.310	ug/L
Iron	125U	250	78.0	ug/L
Magnesium	25.0U	50.0	15.0	ug/L
Manganese	0.500U	1.00	0.350	ug/L
Nickel	1.00U	2.00	0.620	ug/L
Selenium	2.50U	5.00	1.50	ug/L
Silver	0.500U	1.00	0.310	ug/L
Sodium	250U	500	150	ug/L
Thallium	0.500U	1.00	0.310	ug/L
Zinc	5.00U	10.0	3.10	ug/L

## Batch Information

Analytical Batch: MMS11060  
 Analytical Method: EP200.8  
 Instrument: Perkin Elmer NexIon P5  
 Analyst: ACF  
 Analytical Date/Time: 4/8/2021 1:17:13PM

Prep Batch: MXX34074  
 Prep Method: E200.2  
 Prep Date/Time: 4/6/2021 12:00:03PM  
 Prep Initial Wt./Vol.: 20 mL  
 Prep Extract Vol: 50 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [MXX34074]  
 Blank Spike Lab ID: 1605133  
 Date Analyzed: 04/08/2021 13:20

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

## Results by EP200.8

### Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
Aluminum	1000	1030	103	(85-115)
Antimony	1000	1020	102	(85-115)
Arsenic	1000	1000	100	(85-115)
Barium	1000	920	92	(85-115)
Beryllium	100	108	108	(85-115)
Cadmium	100	96.5	97	(85-115)
Calcium	10000	10500	105	(85-115)
Chromium	400	414	103	(85-115)
Copper	1000	1000	100	(85-115)
Iron	5000	5300	106	(85-115)
Magnesium	10000	10600	106	(85-115)
Manganese	500	504	101	(85-115)
Nickel	1000	976	98	(85-115)
Selenium	1000	1050	105	(85-115)
Silver	100	101	101	(85-115)
Sodium	10000	10500	105	(85-115)
Thallium	10	9.92	99	(85-115)
Zinc	1000	1020	102	(85-115)

## Batch Information

Analytical Batch: **MMS11060**  
 Analytical Method: **EP200.8**  
 Instrument: **Perkin Elmer Nexlon P5**  
 Analyst: **ACF**

Prep Batch: **MXX34074**  
 Prep Method: **E200.2**  
 Prep Date/Time: **04/06/2021 12:00**  
 Spike Init Wt./Vol.: 1000 ug/L Extract Vol: 50 mL  
 Dupe Init Wt./Vol.: Extract Vol:



### Matrix Spike Summary

Original Sample ID: 1605131  
MS Sample ID: 1605135 MS  
MSD Sample ID:

Analysis Date: 04/08/2021 12:49  
Analysis Date: 04/08/2021 12:52  
Analysis Date:  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by EP200.8

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Aluminum	35.5	1000	1070	104				70-130		
Antimony	0.500U	1000	1140	114				70-130		
Arsenic	3.52J	1000	1050	105				70-130		
Barium	13.1	1000	1020	101				70-130		
Beryllium	0.200U	100	107	107				70-130		
Cadmium	0.250U	100	107	107				70-130		
Calcium	29300	10000	37700	84				70-130		
Chromium	1.00U	400	420	105				70-130		
Copper	3.76	1000	1010	101				70-130		
Iron	125U	5000	5540	111				70-130		
Magnesium	5680	10000	15900	102				70-130		
Manganese	16.6	500	557	108				70-130		
Nickel	1.63J	1000	982	98				70-130		
Selenium	2.50U	1000	1060	106				70-130		
Silver	0.500U	100	111	111				70-130		
Sodium	7030	10000	16900	99				70-130		
Thallium	0.500U	10.0	10.3	103				70-130		
Zinc	5.00U	1000	1020	102				70-130		

### Batch Information

Analytical Batch: MMS11060  
Analytical Method: EP200.8  
Instrument: Perkin Elmer NexIon P5  
Analyst: ACF  
Analytical Date/Time: 4/8/2021 12:52:57PM

Prep Batch: MXX34074  
Prep Method: DW Digest for Metals on ICP-MS  
Prep Date/Time: 4/6/2021 12:00:03PM  
Prep Initial Wt./Vol.: 20.00mL  
Prep Extract Vol: 50.00mL

Print Date: 04/23/2021 10:17:24AM



**Method Blank**

Blank ID: MB for HBN 1817527 [STS/6940]

Blank Lab ID: 1605418

QC for Samples:

1211479001, 1211479003

Matrix: Water (Surface, Eff., Ground)

**Results by SM21 2540C**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Dissolved Solids	5.00U	10.0	3.10	mg/L

**Batch Information**

Analytical Batch: STS6940

Analytical Method: SM21 2540C

Instrument:

Analyst: S.S

Analytical Date/Time: 4/8/2021 11:32:00AM

Print Date: 04/23/2021 10:17:29AM

## Duplicate Sample Summary

Original Sample ID: 1211554001

Duplicate Sample ID: 1605421

QC for Samples:

1211479001, 1211479003

Analysis Date: 04/08/2021 11:32

Matrix: Water (Surface, Eff., Ground)

## Results by SM21 2540C

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Dissolved Solids	1030	1064	mg/L	3.60	(< 5 )

## Batch Information

Analytical Batch: STS6940

Analytical Method: SM21 2540C

Instrument:

Analyst: S.S

Print Date: 04/23/2021 10:17:30AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [STS6940]  
Blank Spike Lab ID: 1605419  
Date Analyzed: 04/08/2021 11:32

Spike Duplicate ID: LCSD for HBN 1211479 [STS6940]  
Spike Duplicate Lab ID: 1605420  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by SM21 2540C

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Dissolved Solids	333	282	85	333	284	85	( 75-125 )	0.71	(< 5 )

### Batch Information

Analytical Batch: STS6940  
Analytical Method: SM21 2540C  
Instrument:  
Analyst: S.S

Print Date: 04/23/2021 10:17:32AM



### Method Blank

Blank ID: MB for HBN 1817557 [VXX/36933]

Blank Lab ID: 1605510

QC for Samples:

1211479001, 1211479003, 1211479004

Matrix: Water (Surface, Eff., Ground)

### Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	99.1	50-150		%

### Batch Information

Analytical Batch: VFC15539

Analytical Method: AK101

Instrument: Agilent 7890 PID/FID

Analyst: S.S

Analytical Date/Time: 4/8/2021 10:27:00AM

Prep Batch: VXX36933

Prep Method: SW5030B

Prep Date/Time: 4/8/2021 6:00:00AM

Prep Initial Wt./Vol.: 5 mL

Prep Extract Vol: 5 mL

Print Date: 04/23/2021 10:17:34AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [VXX36933]  
 Blank Spike Lab ID: 1605511  
 Date Analyzed: 04/08/2021 11:02

Spike Duplicate ID: LCSD for HBN 1211479 [VXX36933]  
 Spike Duplicate Lab ID: 1605512  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003, 1211479004

### Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	1.05	105	1.00	0.994	99	( 60-120 )	5.40	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	0.0500	104	0.0500	97	( 50-150 )	6.90
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### Batch Information

Analytical Batch: **VFC15539**  
 Analytical Method: **AK101**  
 Instrument: **Agilent 7890 PID/FID**  
 Analyst: **S.S**

Prep Batch: **VXX36933**  
 Prep Method: **SW5030B**  
 Prep Date/Time: **04/08/2021 06:00**  
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Print Date: 04/23/2021 10:17:37AM



## Method Blank

Blank ID: MB for HBN 1817807 [VXX/36943]

Blank Lab ID: 1606185

QC for Samples:

1211479001, 1211479003, 1211479004

Matrix: Drinking Water

## Results by EPA 524.2

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.500U	1.00	0.250	ug/L
1,1,1-Trichloroethane	0.250U	0.500	0.150	ug/L
1,1,2,2-Tetrachloroethane	0.500U	1.00	0.250	ug/L
1,1,2-Trichloroethane	0.250U	0.500	0.150	ug/L
1,1-Dichloroethane	0.500U	1.00	0.250	ug/L
1,1-Dichloroethene	0.250U	0.500	0.150	ug/L
1,1-Dichloropropene	0.500U	1.00	0.250	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.250	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.250	ug/L
1,2,4-Trichlorobenzene	0.250U	0.500	0.150	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.250	ug/L
1,2-Dibromo-3-chloropropane	1.00U	2.00	0.620	ug/L
1,2-Dibromoethane	0.500U	1.00	0.250	ug/L
1,2-Dichlorobenzene	0.250U	0.500	0.250	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.250U	0.500	0.200	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.150	ug/L
1,3-Dichlorobenzene	0.250U	0.500	0.150	ug/L
1,3-Dichloropropane	0.500U	1.00	0.250	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.250	ug/L
2-Chlorotoluene	0.500U	1.00	0.250	ug/L
4-Chlorotoluene	0.500U	1.00	0.250	ug/L
4-Isopropyltoluene	0.500U	1.00	0.250	ug/L
Benzene	0.250U	0.500	0.200	ug/L
Bromobenzene	0.500U	1.00	0.250	ug/L
Bromochloromethane	0.500U	1.00	0.250	ug/L
Bromodichloromethane	0.500U	1.00	0.250	ug/L
Bromoform	0.250U	0.500	0.250	ug/L
Bromomethane	1.00U	2.00	0.620	ug/L
Carbon tetrachloride	0.250U	0.500	0.150	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.250	ug/L
Chloromethane	1.00U	2.00	0.600	ug/L
cis-1,2-Dichloroethene	0.250U	0.500	0.200	ug/L
cis-1,3-Dichloropropene	0.500U	1.00	0.250	ug/L
Dibromochloromethane	0.500U	1.00	0.250	ug/L

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## Method Blank

Blank ID: MB for HBN 1817807 [VXX/36943]

Blank Lab ID: 1606185

QC for Samples:

1211479001, 1211479003, 1211479004

Matrix: Drinking Water

## Results by EPA 524.2

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Dibromomethane	0.500U	1.00	0.250	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.250	ug/L
Ethylbenzene	0.250U	0.500	0.200	ug/L
Hexachlorobutadiene	0.500U	1.00	0.250	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.250	ug/L
Methylene chloride	0.250U	0.500	0.400	ug/L
Methyl-t-butyl ether	0.500U	1.00	0.310	ug/L
Naphthalene	0.500U	1.00	0.250	ug/L
n-Butylbenzene	0.500U	1.00	0.250	ug/L
n-Propylbenzene	0.500U	1.00	0.250	ug/L
o-Xylene	0.250U	0.500	0.200	ug/L
P & M -Xylene	0.250U	0.500	0.400	ug/L
sec-Butylbenzene	0.500U	1.00	0.250	ug/L
Styrene	0.250U	0.500	0.200	ug/L
tert-Butylbenzene	0.500U	1.00	0.250	ug/L
Tetrachloroethene	0.250U	0.500	0.150	ug/L
Toluene	0.250U	0.500	0.200	ug/L
trans-1,2-Dichloroethene	0.250U	0.500	0.200	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.250	ug/L
Trichloroethene	0.250U	0.500	0.200	ug/L
Trichlorofluoromethane	0.500U	1.00	0.250	ug/L
Vinyl chloride	0.200U	0.400	0.200	ug/L
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	100	70-130		%
4-Bromofluorobenzene (surr)	100	70-130		%
Toluene-d8 (surr)	99.5	70-130		%

## Batch Information

Analytical Batch: VMS20647  
 Analytical Method: EPA 524.2  
 Instrument: VSA Agilent GC/MS 7890B/5977A  
 Analyst: NRB  
 Analytical Date/Time: 4/14/2021 11:57:00AM

Prep Batch: VXX36943  
 Prep Method: SW5030B  
 Prep Date/Time: 4/14/2021 11:29:00AM  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

Print Date: 04/23/2021 10:17:40AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [VXX36943]  
 Blank Spike Lab ID: 1606186  
 Date Analyzed: 04/14/2021 12:21

Spike Duplicate ID: LCSD for HBN 1211479 [VXX36943]  
 Spike Duplicate Lab ID: 1606187  
 Matrix: Drinking Water

QC for Samples: 1211479001, 1211479003, 1211479004

### Results by EPA 524.2

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	32.1	107	30	31.3	104	( 70-130 )	2.50	(< 30 )
1,1,1-Trichloroethane	30	31.8	106	30	30.7	102	( 70-130 )	3.70	(< 30 )
1,1,2,2-Tetrachloroethane	30	31.6	105	30	30.2	101	( 70-130 )	4.60	(< 30 )
1,1,2-Trichloroethane	30	31.2	104	30	30.7	102	( 70-130 )	1.60	(< 30 )
1,1-Dichloroethane	30	31.5	105	30	30.1	100	( 70-130 )	4.70	(< 30 )
1,1-Dichloroethene	30	32.4	108	30	30.8	103	( 70-130 )	4.90	(< 30 )
1,1-Dichloropropene	30	32.0	107	30	30.6	102	( 70-130 )	4.50	(< 30 )
1,2,3-Trichlorobenzene	30	32.3	108	30	30.8	103	( 70-130 )	4.60	(< 30 )
1,2,3-Trichloropropane	30	31.4	105	30	30.1	100	( 70-130 )	4.00	(< 30 )
1,2,4-Trichlorobenzene	30	32.7	109	30	31.2	104	( 70-130 )	4.60	(< 30 )
1,2,4-Trimethylbenzene	30	33.0	110	30	31.0	103	( 70-130 )	6.00	(< 30 )
1,2-Dibromo-3-chloropropane	30	31.6	105	30	30.4	101	( 70-130 )	4.00	(< 30 )
1,2-Dibromoethane	30	31.6	105	30	31.1	104	( 70-130 )	1.70	(< 30 )
1,2-Dichlorobenzene	30	31.4	105	30	30.4	101	( 70-130 )	3.00	(< 30 )
1,2-Dichloroethane	30	30.8	103	30	30.0	100	( 70-130 )	2.80	(< 30 )
1,2-Dichloropropane	30	31.5	105	30	30.6	102	( 70-130 )	2.90	(< 30 )
1,3,5-Trimethylbenzene	30	33.2	111	30	31.1	104	( 70-130 )	6.40	(< 30 )
1,3-Dichlorobenzene	30	32.2	107	30	30.6	102	( 70-130 )	5.20	(< 30 )
1,3-Dichloropropane	30	31.6	105	30	30.9	103	( 70-130 )	2.10	(< 30 )
1,4-Dichlorobenzene	30	32.3	108	30	30.9	103	( 70-130 )	4.40	(< 30 )
2,2-Dichloropropane	30	32.0	107	30	30.7	102	( 70-130 )	4.20	(< 30 )
2-Chlorotoluene	30	32.6	109	30	30.9	103	( 70-130 )	5.30	(< 30 )
4-Chlorotoluene	30	32.8	109	30	31.0	103	( 70-130 )	5.50	(< 30 )
4-Isopropyltoluene	30	33.5	112	30	31.5	105	( 70-130 )	6.10	(< 30 )
Benzene	30	31.1	104	30	29.9	100	( 70-130 )	3.90	(< 30 )
Bromobenzene	30	32.4	108	30	30.6	102	( 70-130 )	5.70	(< 30 )
Bromochloromethane	30	31.3	104	30	30.0	100	( 70-130 )	4.10	(< 30 )
Bromodichloromethane	30	33.1	110	30	32.0	107	( 70-130 )	3.50	(< 30 )
Bromoform	30	34.7	116	30	34.3	114	( 70-130 )	1.20	(< 30 )
Bromomethane	30	38.6	129	30	35.0	117	( 70-130 )	9.80	(< 30 )
Carbon tetrachloride	30	32.6	109	30	31.6	105	( 70-130 )	3.00	(< 30 )
Chlorobenzene	30	31.2	104	30	30.3	101	( 70-130 )	2.90	(< 30 )
Chloroethane	30	30.7	102	30	28.9	96	( 70-130 )	6.10	(< 30 )
Chloroform	30	30.4	101	30	29.3	98	( 70-130 )	3.70	(< 30 )

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**Blank Spike Summary**

Blank Spike ID: LCS for HBN 1211479 [VXX36943]  
 Blank Spike Lab ID: 1606186  
 Date Analyzed: 04/14/2021 12:21

Spike Duplicate ID: LCSD for HBN 1211479 [VXX36943]  
 Spike Duplicate Lab ID: 1606187  
 Matrix: Drinking Water

QC for Samples: 1211479001, 1211479003, 1211479004

**Results by EPA 524.2**

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloromethane	30	31.3	104	30	29.2	97	( 70-130 )	6.70	(< 30 )
cis-1,2-Dichloroethene	30	31.4	105	30	30.3	101	( 70-130 )	3.40	(< 30 )
cis-1,3-Dichloropropene	30	32.8	109	30	32.0	107	( 70-130 )	2.70	(< 30 )
Dibromochloromethane	30	33.7	112	30	33.0	110	( 70-130 )	2.20	(< 30 )
Dibromomethane	30	31.3	104	30	30.6	102	( 70-130 )	2.20	(< 30 )
Dichlorodifluoromethane	30	29.1	97	30	27.4	91	( 70-130 )	6.00	(< 30 )
Ethylbenzene	30	31.6	105	30	30.6	102	( 70-130 )	3.30	(< 30 )
Hexachlorobutadiene	30	33.7	112	30	31.7	106	( 70-130 )	6.10	(< 30 )
Isopropylbenzene (Cumene)	30	32.2	107	30	31.2	104	( 70-130 )	3.30	(< 30 )
Methylene chloride	30	32.1	107	30	30.9	103	( 70-130 )	3.70	(< 30 )
Methyl-t-butyl ether	45	45.2	100	45	44.1	98	( 70-130 )	2.40	(< 30 )
Naphthalene	30	31.8	106	30	31.1	104	( 70-130 )	2.40	(< 30 )
n-Butylbenzene	30	34.0	113	30	31.7	106	( 70-130 )	6.80	(< 30 )
n-Propylbenzene	30	33.6	112	30	31.3	104	( 70-130 )	7.20	(< 30 )
o-Xylene	30	31.9	106	30	30.8	103	( 70-130 )	3.30	(< 30 )
P & M -Xylene	60	63.4	106	60	61.2	102	( 70-130 )	3.50	(< 30 )
sec-Butylbenzene	30	33.3	111	30	31.1	104	( 70-130 )	6.70	(< 30 )
Styrene	30	32.6	109	30	31.7	106	( 70-130 )	2.80	(< 30 )
tert-Butylbenzene	30	33.2	111	30	31.1	104	( 70-130 )	6.40	(< 30 )
Tetrachloroethene	30	32.0	107	30	31.0	103	( 70-130 )	3.20	(< 30 )
Toluene	30	30.8	103	30	29.7	99	( 70-130 )	3.80	(< 30 )
trans-1,2-Dichloroethene	30	31.5	105	30	30.2	101	( 70-130 )	4.20	(< 30 )
trans-1,3-Dichloropropene	30	33.1	110	30	32.4	108	( 70-130 )	2.20	(< 30 )
Trichloroethene	30	31.9	106	30	31.0	103	( 70-130 )	3.00	(< 30 )
Trichlorofluoromethane	30	32.9	110	30	30.7	102	( 70-130 )	6.80	(< 30 )
Vinyl chloride	30	31.9	106	30	29.8	99	( 70-130 )	6.80	(< 30 )
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	30		99	30		98	( 70-130 )	0.77	
4-Bromofluorobenzene (surr)	30		100	30		96	( 70-130 )	3.80	
Toluene-d8 (surr)	30		100	30		100	( 70-130 )	0.36	

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### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [VXX36943]  
Blank Spike Lab ID: 1606186  
Date Analyzed: 04/14/2021 12:21

Spike Duplicate ID: LCSD for HBN 1211479 [VXX36943]  
Spike Duplicate Lab ID: 1606187  
Matrix: Drinking Water

QC for Samples: 1211479001, 1211479003, 1211479004

### Results by EPA 524.2

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			

### Batch Information

Analytical Batch: **VMS20647**  
Analytical Method: **EPA 524.2**  
Instrument: **VSA Agilent GC/MS 7890B/5977A**  
Analyst: **NRB**

Prep Batch: **VXX36943**  
Prep Method: **SW5030B**  
Prep Date/Time: **04/14/2021 11:29**  
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 04/23/2021 10:17:42AM



**Method Blank**

Blank ID: MB for HBN 1817435 [WA/ 11676]  
Blank Lab ID: 1605065  
QC for Samples  
1211479001, 1211479003

Matrix: Water (Surface, Eff., Ground)

**Results by SM23 2120B**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Color, True	500U	500	500	PCU

**Batch Information**

Analytical Batch: WA11676  
Analytical Method: SM23 2120B  
Instrument:  
Analyst: EWW  
Analytical Date/Time: 4/5 2021 4:46:00PM

Print Date: 04/23/2021 10:17:45AM

## Duplicate Sample Summary

Original Sample ID: 1211479001

Duplicate Sample ID: 1605067

QC for Samples:

1211479001, 1211479003

Analysis Date: 04/05/2021 16:46

Matrix: Water (Surface, Eff., Ground)

## Results by SM23 2120B

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Color, True	75.0	90.0	PCU	18.20	(< 20 )

## Batch Information

Analytical Batch: WAT11676

Analytical Method: SM23 2120B

Instrument:

Analyst: EWW

Print Date: 04/23/2021 10:17:46AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [WAT11676]  
Blank Spike Lab ID: 1605066  
Date Analyzed: 04/05/2021 16:46

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by SM23 2120B

Parameter	Blank Spike (PCU)			CL
	Spike	Result	Rec (%)	
Color, True	15	15.0	100	( 90-110 )

### Batch Information

Analytical Batch: **WAT11676**  
Analytical Method: **SM23 2120B**  
Instrument:  
Analyst: **EWV**

Print Date: 04/23/2021 10:17:47AM



## Method Blank

Blank ID: MB for HBN 1817644 (WFI/2922)

Blank Lab ID: 1605715

QC for Samples:

Matrix: Water (Surface, Eff., Ground)

## Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

## Batch Information

Analytical Batch: WFI2922

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EBH

Analytical Date/Time: 4/9/2021 2:14:47PM

Print Date: 04/23/2021 10:17:54AM



### Method Blank

Blank ID: MB for HBN 1817644 (WFI/2922)

Blank Lab ID: 1605716

QC for Samples:

Matrix: Water (Surface, Eff., Ground)

### Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

### Batch Information

Analytical Batch: WFI2922

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EBH

Analytical Date/Time: 4/9/2021 1:52:02PM

Print Date: 04/23/2021 10:17:54AM

## Method Blank

Blank ID: MB for HBN 1817644 (WFI/2922)

Blank Lab ID: 1605718

QC for Samples:

1211479001, 1211479003

Matrix: Water (Surface, Eff., Ground)

## Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

## Batch Information

Analytical Batch: WFI2922

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EBH

Analytical Date/Time: 4/9/2021 1:18:47PM

Print Date: 04/23/2021 10:17:54AM



### Method Blank

Blank ID: MB for HBN 1817644 (WFI/2922)

Blank Lab ID: 1605719

QC for Samples:

1211479001, 1211479003

Matrix: Water (Surface, Eff., Ground)

### Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

### Batch Information

Analytical Batch: WFI2922

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EBH

Analytical Date/Time: 4/9/2021 12:56:02PM

Print Date: 04/23/2021 10:17:54AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [WFI2922]  
 Blank Spike Lab ID: 1605702  
 Date Analyzed: 04/09/2021 14:13

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

## Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	1.17	47 *	( 70-130 )
Nitrite-N	2.5	3.54	141 *	( 90-110 )
Total Nitrate/Nitrite-N	5	4.71	94	( 90-110 )

## Batch Information

Analytical Batch: **WFI2922**  
 Analytical Method: **SM21 4500NO3-F**  
 Instrument: **Astoria segmented flow**  
 Analyst: **EBH**

Print Date: 04/23/2021 10:17:56AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [WFI2922]  
 Blank Spike Lab ID: 1605703  
 Date Analyzed: 04/09/2021 13:50

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

## Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.44	98	( 70-130 )
Nitrite-N	2.5	2.52	101	( 90-110 )
Total Nitrate/Nitrite-N	5	4.96	99	( 90-110 )

## Batch Information

Analytical Batch: **WFI2922**  
 Analytical Method: **SM21 4500NO3-F**  
 Instrument: **Astoria segmented flow**  
 Analyst: **EBH**

Print Date: 04/23/2021 10:17:56AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [WFI2922]  
Blank Spike Lab ID: 1605705  
Date Analyzed: 04/09/2021 13:17

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.50	100	( 70-130 )
Nitrite-N	2.5	2.52	101	( 90-110 )
Total Nitrate/Nitrite-N	5	5.02	100	( 90-110 )

### Batch Information

Analytical Batch: **WFI2922**  
Analytical Method: **SM21 4500NO3-F**  
Instrument: **Astoria segmented flow**  
Analyst: **EBH**

Print Date: 04/23/2021 10:17:56AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [WFI2922]  
 Blank Spike Lab ID: 1605706  
 Date Analyzed: 04/09/2021 12:54

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

## Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.48	99	( 70-130 )
Nitrite-N	2.5	2.51	100	( 90-110 )
Total Nitrate/Nitrite-N	5	5.00	100	( 90-110 )

## Batch Information

Analytical Batch: **WFI2922**  
 Analytical Method: **SM21 4500NO3-F**  
 Instrument: **Astoria segmented flow**  
 Analyst: **EBH**

Print Date: 04/23/2021 10:17:56AM





### Matrix Spike Summary

Original Sample ID: 1211399001  
MS Sample ID: 1605673 MS  
MSD Sample ID: 1605674 MSD

Analysis Date: 04/09/2021 12:26  
Analysis Date: 04/09/2021 12:28  
Analysis Date: 04/09/2021 12:29  
Matrix: Drinking Water

QC for Samples:

### Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	2.27	5.00	7.98	114 *	5.00	7.99	114 *	90-110	0.11	(< 25 )

### Batch Information

Analytical Batch: WFI2922  
Analytical Method: SM21 4500NO3-F  
Instrument: Astoria segmented flow  
Analyst: EBH  
Analytical Date/Time: 4/9/2021 12:28:00PM

Print Date: 04/23/2021 10:17:58AM



### Matrix Spike Summary

Original Sample ID: 1211463001  
MS Sample ID: 1605675 MS  
MSD Sample ID: 1605676 MSD

Analysis Date: 04/09/2021 12:59  
Analysis Date: 04/09/2021 13:01  
Analysis Date: 04/09/2021 13:03  
Matrix: Drinking Water

QC for Samples: 1211479001, 1211479003

### Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	0.200U	5.00	6.17	123 *	5.00	6.02	120 *	90-110	2.40	(< 25 )

### Batch Information

Analytical Batch: WFI2922  
Analytical Method: SM21 4500NO3-F  
Instrument: Astoria segmented flow  
Analyst: EBH  
Analytical Date/Time: 4/9/2021 1:01:00PM

Print Date: 04/23/2021 10:17:58AM



### Matrix Spike Summary

Original Sample ID: 1211561001  
MS Sample ID: 1605677 MS  
MSD Sample ID: 1605678 MSD

Analysis Date: 04/09/2021 13:57  
Analysis Date: 04/09/2021 13:59  
Analysis Date: 04/09/2021 14:00  
Matrix: Drinking Water

QC for Samples: 1211479001, 1211479003

### Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	0.165J	5.00	5.92	115 *	5.00	6.13	119 *	90-110	3.50	(< 25 )

### Batch Information

Analytical Batch: WFI2922  
Analytical Method: SM21 4500NO3-F  
Instrument: Astoria segmented flow  
Analyst: EBH  
Analytical Date/Time: 4/9/2021 1:59:00PM

Print Date: 04/23/2021 10:17:58AM



### Duplicate Sample Summary

Original Sample ID: 1211479001

Duplicate Sample ID: 1605269

QC for Samples:

1211479001, 1211479003

Analysis Date: 04/06/2021 16:30

Matrix: Water (Surface, Eff., Ground)

### Results by SM21 4500-H B

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
pH	7.3	7.30	pH units	0.00	(< 5 )

### Batch Information

Analytical Batch: WTI5596

Analytical Method: SM21 4500-H B

Instrument: Titration

Analyst: EWW

Print Date: 04/23/2021 10:18:01AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [WTI5596]  
Blank Spike Lab ID: 1605266  
Date Analyzed: 04/06/2021 14:16

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by SM21 4500-H B

Parameter	Blank Spike (pH units)			CL
	Spike	Result	Rec (%)	
pH	6.99	7.03	101	( 99-101 )

### Batch Information

Analytical Batch: **WTI5596**  
Analytical Method: **SM21 4500-H B**  
Instrument: **Titration**  
Analyst: **EWV**

Print Date: 04/23/2021 10:18:02AM

## Method Blank

Blank ID: MB for HBN 1817492 [WTI/5598]

Blank Lab ID: 1605280

QC for Samples:

1211479001, 1211479003

Matrix: Water (Surface, Eff., Ground)

## Results by SM21 2320B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Alkalinity	5.00U	10.0	2.50	mg/L

## Batch Information

Analytical Batch: WTI5598

Analytical Method: SM21 2320B

Instrument: Titration

Analyst: EWW

Analytical Date/Time: 4/6/2021 3:47:24PM

Print Date: 04/23/2021 10:18:05AM



### Duplicate Sample Summary

Original Sample ID: 1211479001

Duplicate Sample ID: 1605283

QC for Samples:

1211479001, 1211479003

Analysis Date: 04/06/2021 16:30

Matrix: Water (Surface, Eff., Ground)

### Results by SM21 2320B

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Alkalinity	85.5	85.5	mg/L	0.07	(< 25 )

### Batch Information

Analytical Batch: WTI5598

Analytical Method: SM21 2320B

Instrument: Titration

Analyst: EWW

Print Date: 04/23/2021 10:18:07AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [WTI5598]

Blank Spike Lab ID: 1605281

Date Analyzed: 04/06/2021 15:57

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

## Results by SM21 2320B

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Alkalinity	250	239	96	( 85-115 )

## Batch Information

Analytical Batch: **WTI5598**

Analytical Method: **SM21 2320B**

Instrument: **Titration**

Analyst: **EWV**

Print Date: 04/23/2021 10:18:08AM



## Method Blank

Blank ID: MB for HBN 1817513 [WXX/13665]

Blank Lab ID: 1605359

QC for Samples:

1211479001, 1211479003

Matrix: Water (Surface, Eff., Ground)

## Results by EPA 300.0

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloride	0.100U	0.200	0.0500	mg/L
Fluoride	0.100U	0.200	0.0500	mg/L
Sulfate	0.100U	0.200	0.0500	mg/L

## Batch Information

Analytical Batch: WIC6147

Analytical Method: EPA 300.0

Instrument: 930 Metrohm compact IC flex

Analyst: A.A

Analytical Date/Time: 4/6/2021 1:48:00PM

Prep Batch: WXX13665

Prep Method: METHOD

Prep Date/Time: 4/6/2021 11:00:00AM

Prep Initial Wt./Vol.: 10 mL

Prep Extract Vol: 10 mL

Print Date: 04/23/2021 10:18:10AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [WXX13665]  
 Blank Spike Lab ID: 1605360  
 Date Analyzed: 04/06/2021 15:23

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

## Results by EPA 300.0

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Chloride	5	5.13	103	( 90-110 )
Fluoride	5	5.05	101	( 90-110 )
Sulfate	5	5.18	104	( 90-110 )

## Batch Information

Analytical Batch: **WIC6147**  
 Analytical Method: **EPA 300.0**  
 Instrument: **930 Metrohm compact IC flex**  
 Analyst: **A.A**

Prep Batch: **WXX13665**  
 Prep Method: **METHOD**  
 Prep Date/Time: **04/06/2021 11:00**  
 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL  
 Dupe Init Wt./Vol.: Extract Vol:



### Matrix Spike Summary

Original Sample ID: 1605362  
MS Sample ID: 1605363 MS  
MSD Sample ID:

Analysis Date: 04/06/2021 18:14  
Analysis Date: 04/06/2021 19:11  
Analysis Date:  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloride	6.34	5.00	10.8	90				90-110		
Fluoride	0.100U	5.00	4.32	87 *				90-110		
Sulfate	4.43	5.00	8.96	91				90-110		

### Batch Information

Analytical Batch: WIC6147  
Analytical Method: EPA 300.0  
Instrument: 930 Metrohm compact IC flex  
Analyst: A.A  
Analytical Date/Time: 4/6/2021 7:11:44PM

Prep Batch: WXX13665  
Prep Method: EPA 300.0 Extraction Waters/Liquids  
Prep Date/Time: 4/6/2021 11:00:00AM  
Prep Initial Wt./Vol.: 10.00mL  
Prep Extract Vol: 10.00mL

Print Date: 04/23/2021 10:18:15AM



### Matrix Spike Summary

Original Sample ID: 1211416001  
MS Sample ID: 1605364 MS  
MSD Sample ID:

Analysis Date: 04/06/2021 21:43  
Analysis Date: 04/06/2021 22:02  
Analysis Date:  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	15.3	5.00	19.4	82 *				90-110		

### Batch Information

Analytical Batch: WIC6147  
Analytical Method: EPA 300.0  
Instrument: 930 Metrohm compact IC flex  
Analyst: A.A  
Analytical Date/Time: 4/6/2021 10:02:43PM

Prep Batch: WXX13665  
Prep Method: EPA 300.0 Extraction Waters/Liquids  
Prep Date/Time: 4/6/2021 11:00:00AM  
Prep Initial Wt./Vol.: 10.00mL  
Prep Extract Vol: 10.00mL

Print Date: 04/23/2021 10:18:15AM



### Method Blank

Blank ID: MB for HBN 1817781 [WXX/13669]

Blank Lab ID: 1606053

QC for Samples:

1211479001, 1211479003

Matrix: Water (Surface, Eff., Ground)

### Results by SM21 4500-CN C,E

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Cyanide	0.0025U	0.0050	0.0020	mg/L

### Batch Information

Analytical Batch: WDA4963  
Analytical Method: SM21 4500-CN C,E  
Instrument: Discrete Analyzer 3  
Analyst: EWW  
Analytical Date/Time: 4/14/2021 2:13:11PM

Prep Batch: WXX13669  
Prep Method: METHOD  
Prep Date/Time: 4/14/2021 11:03:00AM  
Prep Initial Wt./Vol.: 6 mL  
Prep Extract Vol: 6 mL

Print Date: 04/23/2021 10:18:16AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [WXX13669]  
 Blank Spike Lab ID: 1606054  
 Date Analyzed: 04/14/2021 14:15

Spike Duplicate ID: LCSD for HBN 1211479  
 [WXX13669]  
 Spike Duplicate Lab ID: 1606055  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

## Results by SM21 4500-CN C,E

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Cyanide	0.05	0.041	82	0.05	0.042	83	( 75-125 )	1.40	(< 25 )

## Batch Information

Analytical Batch: **WDA4963**  
 Analytical Method: **SM21 4500-CN C,E**  
 Instrument: **Discrete Analyzer 3**  
 Analyst: **EWV**

Prep Batch: **WXX13669**  
 Prep Method: **METHOD**  
 Prep Date/Time: **04/14/2021 11:03**  
 Spike Init Wt./Vol.: 0.05 mg/L Extract Vol: 6 mL  
 Dupe Init Wt./Vol.: 0.05 mg/L Extract Vol: 6 mL



### Matrix Spike Summary

Original Sample ID: 1211479003  
MS Sample ID: 1606057 MS  
MSD Sample ID: 1606058 MSD

Analysis Date: 04/14/2021 14:29  
Analysis Date: 04/14/2021 14:31  
Analysis Date: 04/14/2021 14:34  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479003

### Results by SM21 4500-CN C,E

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD_CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Cyanide	0.00250U	0.050	.041	83	0.050	0.041	83	75-125	0.24	(< 25 )

### Batch Information

Analytical Batch: WDA4963  
Analytical Method: SM21 4500-CN C,E  
Instrument: Discrete Analyzer 3  
Analyst: EWW  
Analytical Date/Time: 4/14/2021 2:31:45PM

Prep Batch: WXX13669  
Prep Method: Cyanide Distillation  
Prep Date/Time: 4/14/2021 11:03:00AM  
Prep Initial Wt./Vol.: 6.00mL  
Prep Extract Vol: 6.00mL

Print Date: 04/23/2021 10:18:20AM



### Method Blank

Blank ID: MB for HBN 1817519 [XXX/44604]  
Blank Lab ID: 1605389

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1211479001, 1211479002, 1211479003

### Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
<b>Surrogates</b>				
5a Androstane (surr)	95.6	60-120		%

### Batch Information

Analytical Batch: XFC15890  
Analytical Method: AK102  
Instrument: Agilent 7890B R  
Analyst: A.A  
Analytical Date/Time: 4/9/2021 8:40:00AM

Prep Batch: XXX44604  
Prep Method: SW3520C  
Prep Date/Time: 4/7/2021 4:32:04PM  
Prep Initial Wt./Vol.: 250 mL  
Prep Extract Vol: 1 mL

Print Date: 04/23/2021 10:18:22AM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [XXX44604]  
 Blank Spike Lab ID: 1605390  
 Date Analyzed: 04/09/2021 08:49

Spike Duplicate ID: LCSD for HBN 1211479  
 [XXX44604]  
 Spike Duplicate Lab ID: 1605391  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479002, 1211479003

## Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	18.9	95	20	21.0	105	( 75-125 )	10.40	(< 20 )

### Surrogates

5a Androstane (surr)	0.4		105	0.4		116	( 60-120 )	10.00	
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## Batch Information

Analytical Batch: **XFC15890**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **A.A**

Prep Batch: **XXX44604**  
 Prep Method: **SW3520C**  
 Prep Date/Time: **04/07/2021 16:32**  
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

## Method Blank

Blank ID: MB for HBN 1817519 [XXX/44604]

Blank Lab ID: 1605389

QC for Samples:

1211479001, 1211479002, 1211479003

Matrix: Water (Surface, Eff., Ground)

## Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
<b>Surrogates</b>				
n-Triacontane-d62 (surr)	109	60-120		%

## Batch Information

Analytical Batch: XFC15890

Analytical Method: AK103

Instrument: Agilent 7890B R

Analyst: A.A

Analytical Date/Time: 4/9/2021 8:40:00AM

Prep Batch: XXX44604

Prep Method: SW3520C

Prep Date/Time: 4/7/2021 4:32:04PM

Prep Initial Wt./Vol.: 250 mL

Prep Extract Vol: 1 mL

Print Date: 04/23/2021 10:18:26AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [XXX44604]  
Blank Spike Lab ID: 1605390  
Date Analyzed: 04/09/2021 08:49

Spike Duplicate ID: LCSD for HBN 1211479 [XXX44604]  
Spike Duplicate Lab ID: 1605391  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479002, 1211479003

### Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Residual Range Organics	20	20.2	101	20	22.3	112	( 60-120 )	10.30	(< 20 )	
<b>Surrogates</b>										
n-Triacontane-d62 (surr)	0.4		101	0.4		112	( 60-120 )	11.00		

### Batch Information

Analytical Batch: XFC15890  
Analytical Method: AK103  
Instrument: Agilent 7890B R  
Analyst: A.A

Prep Batch: XXX44604  
Prep Method: SW3520C  
Prep Date/Time: 04/07/2021 16:32  
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL  
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 04/23/2021 10:18:29AM



### Method Blank

Blank ID: MB for HBN 1817523 [XXX/44606]  
Blank Lab ID: 1605400

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1211479001, 1211479002, 1211479003

### Results by 8270D SIM LV (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0184J	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	53.4	42-86		%
Fluoranthene-d10 (surr)	71.2	50-97		%

### Batch Information

Analytical Batch: XMS12561  
Analytical Method: 8270D SIM LV (PAH)  
Instrument: Agilent GC 7890B/5977A SWA  
Analyst: CDM  
Analytical Date/Time: 4/10/2021 3:59:00PM

Prep Batch: XXX44606  
Prep Method: SW3535A  
Prep Date/Time: 4/8/2021 9:28:15AM  
Prep Initial Wt./Vol.: 250 mL  
Prep Extract Vol: 1 mL

Print Date: 04/23/2021 10:18:31AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211479 [XXX44606]  
 Blank Spike Lab ID: 1605401  
 Date Analyzed: 04/10/2021 16:20

Spike Duplicate ID: LCSD for HBN 1211479  
 [XXX44606]  
 Spike Duplicate Lab ID: 1605402  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211479001, 1211479002, 1211479003

### Results by 8270D SIM LV (PAH)

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	2	1.29	64	2	1.12	56	( 41-115 )	13.70	(< 20 )
2-Methylnaphthalene	2	1.27	63	2	1.11	55	( 39-114 )	13.60	(< 20 )
Acenaphthene	2	1.43	72	2	1.34	67	( 48-114 )	6.70	(< 20 )
Acenaphthylene	2	1.50	75	2	1.42	71	( 35-121 )	5.80	(< 20 )
Anthracene	2	1.50	75	2	1.47	74	( 53-119 )	2.10	(< 20 )
Benzo(a)Anthracene	2	1.32	66	2	1.34	67	( 59-120 )	1.50	(< 20 )
Benzo[a]pyrene	2	1.60	80	2	1.66	83	( 53-120 )	3.20	(< 20 )
Benzo[b]Fluoranthene	2	1.55	77	2	1.67	84	( 53-126 )	7.80	(< 20 )
Benzo[g,h,i]perylene	2	1.68	84	2	1.74	87	( 44-128 )	3.40	(< 20 )
Benzo[k]fluoranthene	2	1.64	82	2	1.65	83	( 54-125 )	0.79	(< 20 )
Chrysene	2	1.55	78	2	1.60	80	( 57-120 )	2.70	(< 20 )
Dibenzo[a,h]anthracene	2	1.66	83	2	1.73	86	( 44-131 )	4.30	(< 20 )
Fluoranthene	2	1.49	74	2	1.52	76	( 58-120 )	2.20	(< 20 )
Fluorene	2	1.46	73	2	1.40	70	( 50-118 )	3.80	(< 20 )
Indeno[1,2,3-c,d] pyrene	2	1.75	88	2	1.84	92	( 48-130 )	4.80	(< 20 )
Naphthalene	2	1.40	70	2	1.21	60	( 43-114 )	15.00	(< 20 )
Phenanthrene	2	1.46	73	2	1.46	73	( 53-115 )	0.00	(< 20 )
Pyrene	2	1.47	73	2	1.51	76	( 53-121 )	2.80	(< 20 )
<b>Surrogates</b>									
2-Methylnaphthalene-d10 (surr)	2		60	2		58	( 42-86 )	4.30	
Fluoranthene-d10 (surr)	2		72	2		75	( 50-97 )	3.80	

### Batch Information

Analytical Batch: XMS12561  
 Analytical Method: 8270D SIM LV (PAH)  
 Instrument: Agilent GC 7890B/5977A SWA  
 Analyst: CDM

Prep Batch: XXX44606  
 Prep Method: SW3535A  
 Prep Date/Time: 04/08/2021 09:28  
 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 04/23/2021 10:18:33AM

## Albarran, Michelle (Anchorage)

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**From:** Nelson, Justin (Anchorage)  
**Sent:** Monday, April 5, 2021 4:03 PM  
**To:** Env.Alaska.RcvgLogin  
**Subject:** FW: [EXTERNAL] RE: Cordova VOCs

Please proceed with the Cordova VOCs that have headspace >6mm. This email needs to be saved as a change order.

**Justin A. Nelson**  
**Environmental, Health & Safety**  
Client Service Manager, Alaska

Phone: + 01 907 562 2343  
Direct: + 01 907 550 3205

---

**From:** Ryan Collins <RDC@shanwil.com>  
**Sent:** Monday, April 5, 2021 3:47 PM  
**To:** Nelson, Justin (Anchorage) <Justin.Nelson@sgs.com>  
**Subject:** [EXTERNAL] RE: Cordova VOCs

\*\*\* WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. \*\*\*

---

Thanks Justin. Yes, please proceed.

### Shannon & Wilson, Inc.

**Ryan Collins CPG** | Senior Geologist  
5430 Fairbanks Street, Suite 3, Anchorage, Alaska 99518  
Office: 907.561.2120 | Direct: 907.433.3220  
[rdc@shanwil.com](mailto:rdc@shanwil.com)

---

**From:** Nelson, Justin (Anchorage) <[Justin.Nelson@sgs.com](mailto:Justin.Nelson@sgs.com)>  
**Sent:** Monday, April 5, 2021 3:16 PM  
**To:** Ryan Collins <[RDC@shanwil.com](mailto:RDC@shanwil.com)>  
**Subject:** Cordova VOCs

The VOC vials for this workorder all have air bubbles >6mm, do you want me to proceed with analysis? The attached has some information on how quickly you can expect analyte loss for different compounds if you're interested.

**Justin A. Nelson**  
**Environmental, Health & Safety**  
Client Service Manager, Alaska  
**SGS**  
200 West Potter Drive  
99518 – Anchorage  
Phone: +01 907 562 2343  
Direct: +01 907 550 3205

E-mail: [Justin.Nelson@sgs.com](mailto:Justin.Nelson@sgs.com)

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**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

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**CHAIN-OF-CUSTODY RECORD**

2705 Saint Andrews Loop, Suite A Pasco, WA 99301-9378 (509) 946-6309

Page 1 of 1  
 Laboratory S65 ANCHORAGE  
 Attn: JUSTIN NELSON

Analysis Parameters/Sample Container Description  
 (include preservative if used)

3-20-01	3-20-02	3-20-03	3-20-04	3-20-05	3-20-06	3-20-07	3-20-08	3-20-09	3-20-10	3-20-11	3-20-12	3-20-13	3-20-14	3-20-15	3-20-16	3-20-17	3-20-18	3-20-19	3-20-20
3-20-01	3-20-02	3-20-03	3-20-04	3-20-05	3-20-06	3-20-07	3-20-08	3-20-09	3-20-10	3-20-11	3-20-12	3-20-13	3-20-14	3-20-15	3-20-16	3-20-17	3-20-18	3-20-19	3-20-20

#36541 AD

Sample Identity	Lab No.	Time	Date Sampled	Comp	Grab	3-20-01	3-20-02	3-20-03	3-20-04	3-20-05	3-20-06	3-20-07	3-20-08	3-20-09	3-20-10	3-20-11	3-20-12	3-20-13	3-20-14	3-20-15	3-20-16	3-20-17	3-20-18	3-20-19	3-20-20	Remarks/Matrix
103311-W1P-GW1	1AD	5:00p	4/2/21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	GROUNDWATER
103311-W1R-GW101	2AD	5:10p	4/2/21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	GROUNDWATER
103311-W2-GW1	3AD	8:45p	4/2/21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	GROUNDWATER
103311-TBW1	4AF	5:00p	4/2/21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	LAS PROVIDED TRIP BLANK
	5AC																									

Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Project Number: 103311-006	Total Number of Containers	Signature: <u>[Signature]</u>	Signature: _____	Signature: _____
Project Name: <u>COBORO SPEG</u>	COC Seals/Intact? Y/N/NA	Printed Name: <u>Ryan Collins</u>	Printed Name: _____	Printed Name: _____
Contact: <u>RYAN COLLINS</u>	Received Good Cond./Cold	Date: <u>4/5/21</u>	Date: _____	Date: _____
Ongoing Project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Delivery Method:	Company: <u>SHANNON &amp; WILSON</u>	Company: _____	Company: _____
Sampler: <u>RYAN COLLINS</u>	(attach shipping bill, if any)	Received By: 1.	Received By: 2.	Received By: 3.
<b>Instructions</b>		Signature: _____	Signature: _____	Signature: <u>[Signature]</u>
Requested Turnaround Time: <u>STANDARD 10-day</u>		Printed Name: _____	Printed Name: _____	Printed Name: <u>SL</u>
Special Instructions: <u>LEVEL II DELIVERABLES</u>		Date: _____	Date: _____	Date: <u>04/05/21</u>
Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report Yellow - w/shipment - for consignee files Pink - Shannon & Wilson - Job File		Company: _____	Company: _____	Company: <u>42 DSI absent HD</u>





e-Sample Receipt Form

SGS Workorder #:

1211479



1 2 1 1 4 7 9

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
<b>Chain of Custody / Temperature Requirements</b>		
Were Custody Seals intact? Note # & location	N/A	Absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
<input type="checkbox"/> N/A <b>**Exemption permitted if chilled &amp; collected &lt;8 hours ago, or for samples where chilling is not required</b>		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 4.2 °C Therm. ID: D51
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
<b>Holding Time / Documentation / Sample Condition Requirements</b>		
Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	No	Total Coliform received past holding time and not analyzed.
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	<input type="checkbox"/> N/A <b>***Exemption permitted for metals (e.g,200.8/6020B).</b>
<b>Volatile / LL-Hg Requirements</b>		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	See attached change order.
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	No	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
<b>Note to Client:</b> Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



## Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1211479001-A	No Preservative Required	OK			
1211479001-B	No Preservative Required	OK			
1211479001-C	HCL to pH < 2	OK			
1211479001-D	HCL to pH < 2	OK			
1211479001-E	H2SO4 to pH < 2	OK			
1211479001-F	NaOH to pH > 10	OK			
1211479001-G	No Preservative Required	OK			
1211479001-H	HNO3 to pH < 2	OK			
1211479001-I	Na2S2O3 for Chlorine Redu	OK			
1211479001-J	HCL to pH < 2	OK			
1211479001-K	HCL to pH < 2	OK			
1211479001-L	HCL to pH < 2	OK			
1211479001-M	HCL to pH < 2	OK			
1211479001-N	HCL to pH < 2	OK			
1211479001-O	HCL to pH < 2	OK			
1211479002-A	No Preservative Required	OK			
1211479002-B	No Preservative Required	OK			
1211479002-C	HCL to pH < 2	OK			
1211479002-D	HCL to pH < 2	OK			
1211479002-E	HCL to pH < 2	OK			
1211479002-F	HCL to pH < 2	OK			
1211479002-G	HCL to pH < 2	OK			
1211479002-H	HCL to pH < 2	OK			
1211479002-I	HCL to pH < 2	OK			
1211479002-J	HCL to pH < 2	OK			
1211479003-A	No Preservative Required	OK			
1211479003-B	No Preservative Required	OK			
1211479003-C	HCL to pH < 2	OK			
1211479003-D	HCL to pH < 2	OK			
1211479003-E	H2SO4 to pH < 2	OK			
1211479003-F	NaOH to pH > 10	OK			
1211479003-G	No Preservative Required	OK			
1211479003-H	HNO3 to pH < 2	OK			
1211479003-I	Na2S2O3 for Chlorine Redu	OK			
1211479003-J	HCL to pH < 2	OK			
1211479003-K	HCL to pH < 2	OK			
1211479003-L	HCL to pH < 2	OK			
1211479003-M	HCL to pH < 2	OK			
1211479003-N	HCL to pH < 2	OK			
1211479003-O	HCL to pH < 2	OK			
1211479004-A	HCL to pH < 2	OK			
1211479004-B	HCL to pH < 2	OK			
1211479004-C	HCL to pH < 2	OK			
1211479004-D	HCL to pH < 2	OK			
1211479004-E	HCL to pH < 2	OK			
1211479004-F	HCL to pH < 2	OK			
1211479005-A	HCL to pH < 2	OK			
1211479005-B	HCL to pH < 2	OK			
1211479005-C	HCL to pH < 2	OK			

Container Id

Preservative

Container  
Condition

Container Id

Preservative

Container  
Condition

#### Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

**Laboratory Data Review Checklist**

Completed By:

Justin Risley

Title:

Engineering Staff

Date:

April 27, 2021

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1211479

Laboratory Report Date:

April 23, 2021

CS Site Name:

ADOT&PF Cordova Airport ARFF Bldg.

ADEC File Number:

2215.38.035

Hazard Identification Number:

27304

1211479

Laboratory Report Date:

April 23, 2021

CS Site Name:

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all the submitted sample analyses?

Yes  No  N/A  Comments:

Analyses were performed by SGS North America, Inc. in Anchorage, AK.

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

Analyses were not transferred or subcontracted.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

Cooler 1 was received at 4.2° C in Anchorage.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

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d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

The laboratory report noted the VOA vials associated with the VOC analysis had bubbles greater than 6 mm.  
The laboratory also notes that total coliform was received past the holding time and not analyzed.

e. Data quality or usability affected?

Comments:

VOC analytes were not detected in the project samples; rejected have been rejected (“R” flagged) due to the sample integrity being compromised.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

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b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

*103311-W1R-GW1* PS

2120B - Color, True - Sample was received and analyzed past hold time.

*103311-W2-GW1* PS

2120B - Color, True - Sample was received and analyzed past hold time.

1211332001(1605362MS) (1605363) MS

300.0 - Anions - MS recovery for Fluoride is outside of QC criteria. Refer to LCS for accuracy requirements.

1211416001MS (1605364) MS

300.0 - Anions - MS recovery for Sulfate is outside of QC criteria. Refer to LCS for accuracy requirements.

1211399001MS (1605673) MS

4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1211463001MS (1605675) MS

4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1211561001MS (1605677) MS

4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1211399001MSD (1605674) MSD

4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1211463001MSD (1605676) MSD

4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1211561001MSD (1605678) MSD

4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite/Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

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c. Were all corrective actions documented?

Yes  No  N/A  Comments:

The laboratory did not specify any corrective actions.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Total coliform received past the hold time. The samples were not analyzed.

The QC errors noted above are discussed in the following sections.

#### 5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

Total coliform was not analyzed due to an exceedance in hold time; see 5.b below.

b. All applicable holding times met?

Yes  No  N/A  Comments:

The hold time for total coliform was not met and the analysis was not performed.

Project samples *103311-W1R-GW1* and *103311-W2-GW1* were received and analyzed past the hold time for Method SM23 2120B. The results are considered estimates and have been flagged 'J' in the analytical database.

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

Soils were not analyzed with this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

All reported LODs are less than the DEC groundwater cleanup level with exception of 1,2,3-trichloropropane, 1,2-dibromoethane, vinyl chloride, arsenic, cyanide, and thallium. The non-detect result for these analytes have been **bolded** on the associated data table.

e. Data quality or usability affected?

Yes  No  N/A

Data quality and usability were affected; see above.



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6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

Method blank results were below the LOQ; however, PAH analyte phenanthrene was detected below the LOQ (0.0184 ug/L).

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Method blank 1605400 is a quality-control sample for project samples *103311-W1R-GW1*, *103311-W2-GW1*, and *103311-W1R-GW101*.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Phenanthrene was also detected below the LOQ in associated project samples *103311-W1R-GW1*, *103311-W2-GW1*, and *103311-W1R-GW101*. These results are considered not detected and flagged 'UB' at the LOQ in the analytical database.

v. Data quality or usability affected?

Comments:

Yes; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

An LCS/LCSD was reported for PAH, DRO, GRO, cyanide, total dissolved solids (TDS) and volatile organic compound (VOC) analyses. An LCS was reported for alkalinity, color, EPA 300.0, mercury, metals, nitrate/nitrite, and pH analyses. A laboratory duplicate was also analyzed for alkalinity, color, TDS, and pH analyses.

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- ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

An LCS was reported for mercury analysis.

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

Nitrate was recovered below the acceptable limits and nitrite was recovered above the acceptable limits for LCS samples 1605702. Total nitrate/nitrite were not detected in the associated samples. The samples have been flagged “UJ” in the analytical table.

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

See above.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

The samples were affected, see above.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were affected; see above.

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c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

An MS/MSD was reported for nitrate/nitrite and cyanide. An MS was reported for EPA 300.0, mercury, and metal analyses. Refer to LCS/LCSD for accuracy requirements for analyses without MS/MSD.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Only an MS was reported for mercury and metals analysis.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

The recovery for total nitrate/nitrite was above the upper control limit for the 3 MS/MSD pairs analyzed by method SM21 4500NO3-F.

The recovery for fluoride was below the lower control limit in the EPA 300.0 MS.

The recovery for sulfate was below the lower control limit in the EPA 300.0 MS.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  Comments:

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v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

The original samples used in the nitrate/nitrite %R failures were project samples associated with this work order. Therefore, no qualifications are required.

The original sample used in the fluoride %R failure was not a project sample. Therefore, no qualifications are required.

The original sample used in the sulfate %R failure was project sample *103311-WIR-GW1*. However, the spiked concentration was low relative to the native concentration in the sample and therefore no qualifications are required.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability are affected; see above.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

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iv. Data quality or usability affected?

Comments:

Data quality or usability is not affected; see above.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?  
(If not, enter explanation below.)

Yes  No  N/A  Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?  
(If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

One cooler was used to transport the project samples and trip blank.

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

Methylene chloride was detected above the LOQ (0.755 ug/L) but less than two-times the LOQ. This analyte was not detected in the associated project samples. No affect on the data.

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A.

v. Data quality or usability affected?

Comments:

Data quality and usability are not affected; see above.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

Field duplicate sample pairs 103311-WIR-GW1/103311-WIR-GW101 were submitted blind with this work order for GRO, DRO, RRO, VOC, and PAH analysis.

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iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R<sub>1</sub> = Sample Concentration  
R<sub>2</sub> = Field Duplicate Concentration

Yes  No  N/A  Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability were not affected; see above.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Reusable equipment was not used for this project, so an equipment blank was not submitted with this work order.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

N/A; an equipment blank was not submitted with this work order.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; an equipment blank was not submitted with this work order.

iii. Data quality or usability affected?

Comments:

Data quality and usability were not affected; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

Other data flags or qualifiers were not required.

Appendix D

# Quality Assurance and Quality Control Summary

QA/QC

APPENDIX D: QA/QC SUMMARY

## QUALITY ASSURANCE (QA) / QUALITY CONTROL (QC) SUMMARY

This appendix summarizes Shannon & Wilson's review of analytical sample results for the Cordova SREB Site Characterization project. Laboratory QC procedures included evaluating surrogate recovery, performing continuing calibration checks, analyzing method blanks, and checking laboratory control samples to assess the accuracy and precision of the analytical methods. The laboratory reports, including case narratives describing laboratory QA results, are appended.

Shannon & Wilson reviewed nine laboratory reports prepared by Eurofins TestAmerica Laboratories, Sacramento (TestAmerica) and SGS North America, Inc. (SGS) to evaluate compliance with project data quality objectives following the Alaska Department of Environmental Conservation's (DEC's) laboratory data review checklist (LDRC). These work orders are detailed in Exhibit 8-1.

**Exhibit 8-1: Laboratory work order summary**

Laboratory	Work Order	Sample Type	Included Analyses
TestAmerica	320-71353-1	Soil	PFAS (EPA 537 Modified)
TestAmerica	320-71353-1-R1	Water	PFAS (EPA 537 Modified)
TestAmerica	320-71360-1	Soil	PFAS (EPA 537 Modified)
TestAmerica	320-72120-1	Water	PFAS (EPA 537 Modified)
SGS	1211155	Water	GRO (AK101), DRO (AK102), RRO (AK103), VOCs (SW8260D), PAHs (SW8270D SIM)
SGS	1211172	Soil	GRO (AK101), DRO (AK102), RRO (AK103), VOCs (SW8260D), PAHs (SW8270D SIM)
SGS	1211171	Soil	GRO (AK101), DRO (AK102), RRO (AK103), VOCs (SW8260D), PAHs (SW8270D SIM), SVOCs (SW8270D-SIM), RCRA Metals (SW6020B), Ethylene glycol (SW8015B), Ammonia (4500-NH3-G)
SGS	1211478	Water	Multiple drinking water regulatory compounds
SGS	1211479	Soil	GRO (AK101), DRO (AK102), RRO (AK103), VOCs (SW8260D), PAHs (SW8270D SIM)



## D.1 ANALYTICAL QUALITY ASSURANCE AND QUALITY CONTROL

QA/QC procedures assist in producing data of acceptable quality and reliability. Analytical results for laboratory QC samples were reviewed and a QA assessment of the data was conducted as the data were generated. The QA review procedures provided documentation of the accuracy and precision of the analytical data and confirmed that the analyses were sufficiently sensitive to detect analytes at levels below applicable DEC soil or groundwater cleanup levels and other regulatory limits, where such limits exist.

Shannon & Wilson conducted a QA/QC review of the laboratory reports containing data for this submittal. The laboratories apply the letter 'J' to a detection less than the limit of quantitation (LOQ) but greater than the detection limit; this "flagged" datum is considered an estimated concentration. TestAmerica refers to the LOQ as the reporting limit (RL). Shannon & Wilson applied a standardized set of flags to data brought into question during the review.

Data flags applied to multiple analytes and details regarding data quality flags applied to the analytical results are described in the LDRCs.

## D.2 SAMPLE HANDLING

Samples collected by Shannon & Wilson personnel were shipped via Alaska Air Cargo to the TestAmerica in West Sacramento, California or SGS in Anchorage, Alaska to perform the requested analyses, using the methods specified in the chain-of-custody records. All samples were analyzed at the TestAmerica laboratory or SGS in Anchorage, with exception of the ethylene glycol samples in work order 1211171, which were subcontracted to Bio-Chem of Grand Rapids, MI. Sample-receipt forms provided by the laboratories were reviewed and checked to verify samples were received in good condition and within the acceptable temperature range. The DEC considers samples received free of ice and at temperatures between 0 °C and 6 °C as acceptable.

Samples were generally received in good condition and properly preserved; with the following exceptions:

- Three samples in work order 1211171 for analysis of ethylene glycol experience shipping delays and the cooler was received at ambient temperature. Due to the temperature exceedance and instability of the target analyte, the results are considered unusable and reported as 'R'.
- VOA vials associated with the VOC analysis in work order 1211479 were received with bubbles greater than 6 millimeters. VOC analytes were not detected in the project samples, and the results are considered unusable and reported as 'R'.

Chain-of-custody records were also reviewed to confirm the information was complete, custody was not breached, and samples were analyzed within the acceptable holding time. chain-of-custody records were complete and correct, except for minor labeling discrepancies that did not affect the results. The analyses were performed within their method required holding times, with the following exception:

- Sample SB12-1 was extracted outside of hold time by method SW8270D-SIM in work order 1211172. PAH analytes were not detected in the project samples and non-detect results are flagged “UJ”.
- The sample for total coliform was received past the holding time and was not analyzed by the laboratory.

### D.3 ANALYTICAL SENSITIVITY

Reporting limits for regulated analytes were below DEC cleanup levels other applicable regulatory limits for the samples included in these work orders with exception of the following analytes in work order 1211171 mercury, naphthalene (PAH analysis), several VOC and SVOCs and 1,2,3-trichloropropane in work order 1211155, several VOCs in work order 1211478, and several VOCs, arsenic, cyanide, and thallium in work order 1211479.

### D.4 LABORATORY METHOD BLANKS

Laboratory method blanks (MBs) were analyzed in association with samples collected for this project to check for contributions to the analytical results possibly attributable to laboratory-based contamination. Field sample results are considered potentially impacted if they are included in the same preparatory batch as an MB exhibiting analyte detections and have corresponding detections for those analytes. Affected sample concentrations within five times (non-PFAS) or ten times (PFAS) of those reported in the MB are assumed to be false-positives and are flagged ‘UB’ at the sample concentration or LOQ, whichever is greater. For non-PFAS analyses, affected sample concentrations within ten times those reported in the MB are assumed to have a high analytical bias and are flagged ‘JH’. See the LDRCs for a discussion and explanation of method blank failures.

### D.5 TRIP, EQUIPMENT, AND FIELD BLANK SAMPLES

Trip blanks were submitted with the samples marked for volatile analyses to verify cross-contamination did not occur during sample handling and transport. Equipment blanks were submitted with the samples that were collected with reusable equipment to verify that the sampling equipment employed did not introduce analyte contributions to the sample results. Field blanks were collected to verify that the ambient environmental

conditions and sampler personal protective equipment did not introduce PFAS contributions to the sample results.

As with MBs, field sample results are considered potentially impacted if the detected sample concentration for the analyte found in the blank sample is within five or ten times that of the blank concentration. Sample results within five times that of a blank concentration are considered not detected and flagged "UB" at the detected concentration or LOQ, whichever is greater. See the LDRCs for a discussion on method blank and trip blank QC failures.

## D.6 METHOD ACCURACY AND PRECISION

In order to evaluate the accuracy and precision of the analytical methods, the laboratory analyzed QC samples for each preparatory batch. These QC samples consist of laboratory control samples (LCS) and LCS duplicates (LCSD), matrix spike (MS) and MS duplicates (MSD) samples. Shannon & Wilson reviewed the results of the laboratory QC samples to verify that the reported accuracy and precision were within acceptable limits. The review identified several QC failures which affected the data (see LDRCs for details). Results affected by method precision failures are flagged 'J' while results affected by high method recovery are flagged 'JH' in the summary tables. Similarly, results affected by low method recovery are flagged 'JL' for detected analyte concentrations or 'UJ' for non-detect results.

## D.7 SURROGATE RECOVERY

The laboratory spiked the samples analyzed for organic constituents with a known quantity of a surrogate compound or isotope dilution analyte similar to the target analytes. The recoveries of these surrogates or isotopes are provided with the sample results in the associated laboratory reports. Shannon & Wilson reviewed the provided surrogate and isotope recovery information to verify the recoveries were within the control limits for the given method. The review identified surrogate recovery failures in work order 320-71360-1; see the associated LDRC for a discussion. Results affected by surrogate recovery are flagged 'J' unless previously qualified for more serious QC issues.

## D.8 FIELD SAMPLE REPRESENTATIVENESS

The overall representativeness of the sample results was evaluated by analyzing the amount of agreement between the detected results field duplicate samples. The agreement was determined by calculating the relative percent difference between the detected results of the field duplicate pairs. Results affected by relative percent difference failures are flagged 'J' in the results summary table unless previously qualified for more serious QC issues.

## D.9 OTHER QUALIFIER

The PFOS or perfluorohexanoic acid (PFHxA) concentrations reported for multiple soil samples in work order 320-71360-1 are considered estimated and flagged 'J' because the transition mass ratio did not meet laboratory acceptance criteria. The issue is typically observed due to matrix interference. The laboratory used professional judgement to identify the analyte but there is some degree of uncertainty in the determination.

PFOS in samples *SBIW20-1*, *SBIW20-101*, *SBIW19-1* in 320-71360-1 have estimated results with a 'J' qualifier due to very high target recoveries. The analyte peaks saturated the instrument detector, which the laboratory attributes to sample matrix interference.

## D.10 DATA QUALITY SUMMARY

By working in general accordance with the proposed scope of services, Shannon & Wilson considers the samples we collected for this project to be representative of site conditions at the locations and times they were obtained. Based on this QA review, three results for ethylene glycol were rejected as unusable due to QC failures, surpassing the completeness goal of obtaining 85 percent useable data. In general, the quality of the analytical data for this project does not appear to have been compromised by analytical irregularities and is adequate for the purposes of this assessment. Results that are affected by QC anomalies are qualified with the appropriate flags in the analytical data tables.

Appendix E

# Updated CSM

## CONTENTS

- Human Health Conceptual Site Model Scoping Form
- Human Health Conceptual Site Model Graphic Form

## SCOPING FORM

APPENDIX E: UPDATED CSM

# Appendix A - Human Health Conceptual Site Model Scoping Form and Standardized Graphic

Site Name: Aircraft Rescue and Fire Fighting Building, Cordova Airport, Cordova AK

File Number: n/a

Completed by: Rachel Willis. Updated 4/16/2021.

### Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

*General Instructions: Follow the italicized instructions in each section below.*

### 1. General Information:

**Sources** (check potential sources at the site)

- USTs
- ASTs
- Dispensers/fuel loading racks
- Drums
- Vehicles
- Landfills
- Transformers
- Other: Aqueous film forming foam (AFFF)

**Release Mechanisms** (check potential release mechanisms at the site)

- Spills
- Leaks
- Direct discharge
- Burning
- Other:

**Impacted Media** (check potentially-impacted media at the site)

- Surface soil (0-2 feet bgs\*)
- Subsurface soil (>2 feet bgs)
- Air
- Sediment
- Groundwater
- Surface water
- Biota
- Other:

**Receptors** (check receptors that could be affected by contamination at the site)

- Residents (adult or child)
- Commercial or industrial worker
- Construction worker
- Subsistence harvester (i.e. gathers wild foods)
- Subsistence consumer (i.e. eats wild foods)
- Site visitor
- Trespasser
- Recreational user
- Farmer
- Other:

\* bgs - below ground surface

**2. Exposure Pathways:** *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.)

*If the box is checked, label this pathway complete:*

Complete

Comments:

Soil samples contained concentrations of GRO, DRO, 1,3,5-trimethylbenzene, naphthalene, and PFOS above DEC CUL. Contamination may be brought to the surface during construction activities.

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future?

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350.

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

Water for the airport structures is provided by an existing well. Contaminants do not exceed regulatory levels in groundwater, but soil contaminants may migrate to groundwater in the future.



## 2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future?

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities).

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

Our well search identified multiple water supply wells near the ARFF building. PFAS was not present exceeding EPA lifetime health advisory levels in two wells sampled, but soil contaminants may migrate to groundwater in the future. We suspect contamination is limited to the top-most water aquifer.

## 3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods?

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)?

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.)

*If all of the boxes are checked, label this pathway complete:*

Incomplete

Comments:

We suspect that the contamination has not spread beyond the airport property boundary. The airport property is developed and restricted-access.

### c) Inhalation-

#### 1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Are the contaminants in soil volatile (see Appendix D in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

Volatile contaminants of potential concern include constituents of heating oil. Excavation activities could unearth the contaminated soil, which would affect outdoor air quality.

## 2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminated soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures)



Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)?



*If both boxes are checked, label this pathway complete:*

Complete

Comments:

Contaminants are present below the ARFF in the floor drain substrate.

**3. Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

**Dermal Exposure to Contaminants in Groundwater and Surface Water**

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

*Check the box if further evaluation of this pathway is needed:*

Comments:

Dermal exposure to PFAS contaminants may occur during construction excavation.

**Inhalation of Volatile Compounds in Tap Water**

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

*Check the box if further evaluation of this pathway is needed:*

Comments:

## Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM<sub>10</sub>). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

*Check the box if further evaluation of this pathway is needed:*



Comments:

One surface soil sample collected from localized surface soil staining has results above cleanup level for multiple fuel and volatile compound. PFAS was found above CUL in multiple surface soil samples. These particles may be dispersed in the wind.

## Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

*Check the box if further evaluation of this pathway is needed:*



Comments:

**4. Other Comments** *(Provide other comments as necessary to support the information provided in this form.)*

GRAPHIC FORM

APPENDIX E: UPDATED CSM

# HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: Aircraft Rescue and Fire Fighting Building, Cordova Airport

Completed By: Rachel Willis

Date Completed: Updated 2/2/2021,

**Instructions:** Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.

(1) Media	(2) Transport Mechanisms	
<input checked="" type="checkbox"/> Surface Soil (0-2 ft bgs)	<input checked="" type="checkbox"/> Direct release to surface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to subsurface <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Runoff or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____	
	<input checked="" type="checkbox"/> Subsurface Soil (2-15 ft bgs)	<input checked="" type="checkbox"/> Direct release to subsurface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
	<input checked="" type="checkbox"/> Ground-water	<input checked="" type="checkbox"/> Direct release to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Flow to surface water body <i>check surface water</i> <input type="checkbox"/> Flow to sediment <i>check sediment</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Direct release to surface water <i>check surface water</i> <input type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Sedimentation <i>check sediment</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
	<input type="checkbox"/> Sediment	<input type="checkbox"/> Direct release to sediment <i>check sediment</i> <input type="checkbox"/> Resuspension, runoff, or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____

(3) Exposure Media	(4) Exposure Pathway/Route	(5) Current & Future Receptors						
		Residents (adults or children)	Commercial or Industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
<input checked="" type="checkbox"/> soil	<input checked="" type="checkbox"/> Incidental Soil Ingestion <input checked="" type="checkbox"/> Dermal Absorption of Contaminants from Soil <input checked="" type="checkbox"/> Inhalation of Fugitive Dust		C/F	C/F	F			
<input checked="" type="checkbox"/> groundwater	<input checked="" type="checkbox"/> Ingestion of Groundwater <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Groundwater <input checked="" type="checkbox"/> Inhalation of Volatile Compounds in Tap Water		C/F	C/F	F			
<input checked="" type="checkbox"/> air	<input checked="" type="checkbox"/> Inhalation of Outdoor Air <input checked="" type="checkbox"/> Inhalation of Indoor Air <input checked="" type="checkbox"/> Inhalation of Fugitive Dust		C/F	C/F	C/F			
<input checked="" type="checkbox"/> surface water	<input checked="" type="checkbox"/> Ingestion of Surface Water <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Surface Water <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water		C/F	C/F	C/F			
<input type="checkbox"/> sediment	<input type="checkbox"/> Direct Contact with Sediment							
<input type="checkbox"/> biota	<input type="checkbox"/> Ingestion of Wild or Farmed Foods							

# Important Information

About Your Environmental Report

IMPORTANT INFORMATION



## I CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

## THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors that were considered in the development of the report have changed.

## SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events and should be consulted to determine if additional tests are necessary.

## MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining

your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

### A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

### THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

### BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

### READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims

being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

**The preceding paragraphs are based on information provided by the ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland**

IMPORTANT INFORMATION