

Groundwater Monitoring Report:

JUNE 2018 SAMPLING EVENT

SANDOVAL COUNTY LANDFILL **Sandoval County, New Mexico**

Submitted To:

**New Mexico Environment Department
Solid Waste Bureau
Harold Runnels Bldg – Room N2150
P.O. Box 5469 – 1190 St Francis Drive
Santa Fe, NM 87502-5469**

Prepared For:

**Sandoval County
2708 Iris Road N.E.
Rio Rancho, NM 87144**

Prepared By:

**Gordon Environmental/PSC
333 Rio Rancho Blvd. N.E., Suite 400
Rio Rancho, NM 87124
505.867.6990**

September 2018

Gordon/PSC Project #: 01004118





333 Rio Rancho Blvd. NE, Suite 400

Rio Rancho, New Mexico 87124

505.867.6990

September 14, 2018

Mr. George Schuman
Permit Section Manager
NMED Solid Waste Bureau
Harold Runnels Bldg – Room N2150
PO Box 5469 – 1190 St. Francis Drive
Santa Fe, NM 87502-5469

Re: Sandoval County Landfill: Groundwater Monitoring Report
June 2018 Sampling Event [01004118/0002]

Dear Mr. Schuman:

On behalf of our client, Sandoval County, Gordon Environmental/PSC (Gordon/PSC) is submitting groundwater monitoring results corresponding to samples collected at the Sandoval County Landfill on June 7, 2018. The attached Groundwater Monitoring Report includes a summary of groundwater quality and monitoring data for this event. In addition, laboratory analytical results are compared to the established assessment monitoring levels (AMLs) and upper tolerance limit values (UTLVs) approved by NMED on 02/09/15.

A comparison of the laboratory analytical results for replacement wells MW-6R and MW-7R (installed May 2018) and the historical groundwater quality database for wells MW-6 and MW-7 (deactivated) is also provided. The comparison shows that the geochemical signatures of replacement wells MW-6R and MW-7R are statistically consistent with the historical groundwater quality database for wells MW-6 and MW-7, respectively. Correspondingly, SCLF is requesting SWB approval to adopt the background water quality parameters/concentrations, statistical parameter values, and reduced parameter list for replacement wells MW-6R and MW-7R that have already been established for wells MW-6 and MW-7. The water level (as detectable) in wells MW-6 and MW-7 will continue to be recorded during each subsequent groundwater sampling event to assist in characterizing groundwater elevation, flow direction, and velocity.

We appreciate the Department's ongoing review of the groundwater monitoring program for the Sandoval County Landfill. Please contact us with your questions or comments.

Very truly yours,
Gordon Environmental/PSC

A handwritten signature in black ink, reading "Braden S. Belliveau".

Braden S. Belliveau, EIT
Project Engineer

A handwritten signature in black ink, reading "Michael J. Crepeau".

Michael J. Crepeau, P.E.
Senior Project Director

cc: Mr. Mark Hatzenbuhler, Director of Public Works, Sandoval County
Mr. Bert Sanchez, Solid Waste Manager (Facility Operating Record)

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1.0 INTRODUCTION

On June 7, 2018 Gordon Environmental/PSC (Gordon/PSC) performed annual groundwater monitoring at the Sandoval County Landfill (**Attachment 1**) in accordance with the site's existing Solid Waste Facility Permit (Solid Waste Facility I.D. No. SWM-0123365). The 06/07/18 event consisted of sample collection at each of the site's five active monitoring wells.

Samples collected from wells MW-2, 3, 5R, 6R, and 7R were analyzed for the current NMED-approved alternate list of parameters (**Attachment 2**). Laboratory analytical results for wells MW-2, 3, and 5R were compared to the established assessment monitoring levels (AMLs) and upper tolerance limit values (UTLVs) approved by the NMED in 2015. In addition, a comparison of the laboratory analytical results for replacement wells MW-6R and MW-7R to existing wells MW-6 and MW-7 (**Attachment 5.2**) is provided in order to obtain SWB approval to adopt the following wells MW-6 and MW-7 groundwater monitoring program criteria for replacement wells MW-6R and MW-7R:

1. background water quality parameters/concentrations
2. statistical parameter values (i.e., BCV, AML, UTLV)
3. reduced parameter list

2.0 GROUNDWATER MONITORING PROGRAM

2.1 Groundwater Monitoring Network

The original monitoring well network at Sandoval County Landfill (SCLF) consisted of four monitoring wells (MW-1 through MW-4). Upgradient monitoring well MW-4 was decommissioned in June 2003 in advance of Cell 4A construction, and replaced by upgradient monitoring well MW-5 in July/August 2003. On 03/11/10, the Solid Waste Bureau (SWB) approved the exclusion of well MW-1 from sample collection due to steadily decreasing water levels of nearly 1 ft/yr between 1999 and 2009. Two additional monitoring wells (MW-6 and MW-7) were installed in January and March 2004, respectively. On 03/21/16, SWB approved the exclusion of well MW-5 from the sampling network, and the installation of well MW-5R as the replacement upgradient well. Well MW-5 was subsequently replaced by upgradient well MW-5R in April 2016 due to predictable declining recharge issues.

On 11/13/18, Gordon/PSC submitted the *Groundwater Monitoring Wells MW-6 and MW-7 Replacement Workplan* (“the Workplan”) to NMED for review and approval. Due to declining regional and local groundwater levels, the Workplan provided the rationale for the deactivation of wells MW-6 and MW-7 (i.e., removal from the groundwater monitoring network and conversion to use as piezometers) and replacement with new wells MW-6R and MW-7R. On 11/29/17 SWB approved the Workplan and the removal of wells MW-6 and MW-7 from the groundwater monitoring network (**Attachment 7.2**). The field activities related to the installation of replacement monitoring wells MW-6R and MW-7R between 02/22/18 and 05/31/18 are documented in the *Groundwater Monitoring Wells MW-6R and MW-7R Installation Report* (Gordon/PSC, 06/25/18), which was approved by SWB on 07/04/18 (**Attachment 7.3**).

To demonstrate the suitability of wells MW-6R and MW-7R as proper replacements for wells MW-6 and MW-7, **Section 4.3** of this Report provides a comparison of the historical analytical data from wells MW-6 and MW-7 to the current results of wells MW-6R and MW-7R, respectively. As with wells MW-1 and MW-5, the water level (as detectable) in wells MW-6 and MW-7 will continue to be recorded during each subsequent groundwater sampling event to assist in characterizing groundwater elevation, flow direction, and velocity.

2.2 Monitoring Schedule and Parameters

The current groundwater monitoring program for SCLF consists of the annual collection and analysis of samples for the NMED-approved alternate list of parameters (**Attachment 2**). Pending SWB approval, samples collected from replacement wells MW-6R and MW-7R during future events will be analyzed for the same alternate list of parameters currently approved for wells MW-2, 3, and 5R. Consistent with the requirements of 20.9.9.11.B NMAC, samples collected from each well in 2019 will be analyzed for the entire suite of parameters listed in Subsections A&C of 20.9.9.20 NMAC (i.e., once every five years).

2.3 Groundwater Level Measurements

Depth-to-water (DTW) measurements for all on-site wells were recorded on 06/07/18 prior to purging and sampling, and were used to develop the groundwater elevation contour map provided as **Attachment 3**. The measurements were recorded using a calibrated electronic tape that emits an audible signal when the water surface is penetrated. These event-specific measurements, along with the calculated groundwater elevation for each well, are summarized in **Attachment 4**.

2.4 Monitoring Well Purging and Sampling

Monitoring wells MW-2, 3, 5R, 6R, and 7R are equipped with dedicated pump systems designed to control the flow and delivery of groundwater to the ground surface in order to produce the most representative sample of groundwater beneath the facility. The pump system for each well includes a dedicated Grundfos® Redi-Flo4™ submersible pump and motor used for both purging and sampling. The pump/motor combination is operated by a Redi-Flo® variable frequency drive (VFD) controller that allows the flow rate to be controlled at the ground surface as the groundwater exits the discharge tubing. On 06/07/18, a minimum of 3 well volumes of water were removed from each monitoring well before sampling.

Following collection, the groundwater samples were immediately placed in a cooler containing ice and maintained at approximately 4°C until delivery to the laboratory on 06/08/18. Samples delivered to the laboratory were accompanied by the appropriate chain-of-custody documentation.

2.5 Monitoring Well Inspection and Maintenance

Each monitoring well is equipped with a locking cap, and each lock was found to be secured and in good condition. The protective casings, bollards, and concrete pads were also found to be in good condition at the time of sampling.

3.0 SITE HYDROGEOLOGY

The hydrogeology of the site is summarized in Section 3 of the *Application for Permit for the Sandoval County Landfill, Volume V, updated January 2005*. The following discussion of the site hydrogeology presents select information contained in the Application for Permit:

The landfill site is located on the western flank of the Albuquerque Basin at an elevation of approximately 5,280 to 5,430 feet. The landfill is underlain by a sequence of siltstones and mudstones belonging to the Arroyo Ojito Formation of the upper Santa Fe Group. In this area, the Santa Fe Group is over 4,000 feet thick. The Arroyo Ojito Formation consists of two members, the Loma Barbon and the Ceja, both of which are exposed at an outcrop near the east-central portion of the property. The Loma Barbon Member is the major unit within the Arroyo Ojito Formation, and underlies the entire facility. The Loma Barbon consists of well-consolidated, fine-grained, yellow-brown to red-brown silty sandstones with interbedded mudstones and scattered lenses of fluvial deposits of coarse-grained and cobbly sandstones.

The Ceja Member of the Arroyo Ojito Formation is a 40- to 60-foot-thick sequence of moderately consolidated, light red to red-brown medium to coarse-grained sandstones and gravels, with minor interbeds of siltstones and mudstones. This unit is present on the topographically highest portion of the property in the area of wells MW-3 and MW-6, and may be seen capping the hills immediately south of the Facility. Unconformably overlying the Arroyo Ojito Formation are thin (20-30 feet thick) Quaternary deposits of Pleistocene age.

3.1 Groundwater Flow Direction and Velocity

The direction of groundwater flow at SCLF has historically been to the east-northeast towards the Rio Grande, and groundwater contour modeling results from the June 2018 event are consistent with the historical trend. **Attachment 3** presents the groundwater elevation contour map based on depth-to-water measurements recorded from the site's nine existing groundwater monitoring wells on 06/07/18. The DTW measurement from MW-7 was excluded in the development of the groundwater elevation contour map due to a 6-foot discrepancy between the 2017 and 2018 DTW measurements for well MW-7. The contour map was developed using data from the site survey performed on 03/26/15, new data for replacement well MW-5R from a survey performed on 06/21/16, and new data for wells MW-6, MW-6R, MW-7, and MW-7R from a survey performed on 06/11/18. The survey data indicate that the current groundwater table ranges in elevation from 4990.76 feet above mean sea level (fmsl) in upgradient well MW-5 to 4973.00 fmsl in downgradient well MW-3. The groundwater flow direction is generally northeastward, following a hydraulic gradient of 0.0062 ft/ft (**Attachment 3**). Assuming a saturated hydraulic conductivity (K_{SAT}) of 3.28×10^{-7} ft/sec to 3.28×10^{-5} ft/sec (10^{-5} cm/sec to 10^{-3} cm/sec, *Freeze and Cherry, 1979*) and an effective porosity (n) of 0.45 (*Domenico and Schwartz, 1998*) for semi-consolidated silty sand, the average linear groundwater velocity ranges from approximately 0.142 ft/year to 14.2 ft/year.

4.0 LABORATORY ANALYTICAL RESULTS

Groundwater samples were analyzed by Hall Environmental Analysis Laboratory (HEAL) of Albuquerque, NM, using applicable EPA methods or their approved equivalents. A review of the quality assurance/quality control (QA/QC) data provided by the laboratory indicates that applicable QA/QC criteria have been met for this event. Laboratory analytical results for the 06/07/18 sampling event are summarized in **Attachment 5**. The corresponding laboratory reports and chain-of-custody documentation are provided in **Attachments 6**; which also provides the laboratory practical quantitation limits (PQLs).

4.1 Laboratory Quality Assurance/Quality Control

The following quality assurance/quality control (QA/QC) samples were collected and analyzed for the volatile organic compounds (VOCs) listed in Subsection A of 20.9.9.20 NMAC to ensure field-sampling quality and laboratory reproducibility:

- One field blank (labeled “FB”) collected in the vicinity of well MW-5R on 06/07/18
- One duplicate sample (labeled “Dupe”) collected from well MW-5R on 06/07/18

In addition, one trip blank, prepared and sealed by the laboratory, was included with the samples to ensure sample quality. The field blank was prepared by filling sample containers with VOC-free deionized water (provided by the laboratory) in proximity to the gasoline-powered generator. No VOCs were reported as detected in the duplicate, field blank, or trip blank QA/QC samples.

4.2 Laboratory Analytical Results

Organic Parameters

Groundwater samples collected from wells MW-2, 3, 5R, 6R, and 7R were analyzed for the alternate list of organic parameters provided in **Attachment 2**; and the laboratory analytical results were compared to the corresponding established AML. No organic parameter was reported as detected above the respective laboratory PQL in any of the groundwater samples.

Inorganic Parameters

Groundwater samples collected from wells MW-2, 3, 5R, 6R, and 7R were also analyzed for the alternate list of inorganic parameters provided in **Attachment 2**; and the laboratory analytical results were compared to the corresponding established AML. With the exceptions of the parameters listed in **Table 1**, no inorganic parameter exceeded its respective, established AML. As required, preliminary notification of the exceedances was provided to NMED Solid Waste Bureau on 07/17/18 (**Attachment 7.1**).

Table 1 provides a summary of the inorganic parameters exhibiting apparent exceedances of the established AML.

Table 1
Inorganic Parameters Exhibiting Established AML or UTLV Exceedances

Well I.D.	Sampling Date	Parameter	Analytical Result (mg/L)	Established AML (mg/L)	Regulatory Presumptive AML (mg/L)	Established UTLV (mg/L)
MW-3	06/07/18	Total Chromium	0.042	0.027	0.025	0.078
		Total Iron	5.4	0.91	0.75	6.135
		Arsenic	0.0075	0.0069	0.005	0.01
MW-7R	06/07/18	Fluoride	0.86	0.86	0.8	0.9776
		Nitrate	6.2	5.0	5.0	N/A

Notes:

- N/A indicates UTLV not assigned
- Established AMLs and Established UTLVs for MW-7 are being temporarily used for evaluating MW-7R monitoring results until the establishment of AMLs and UTLVs for MW-7R

Well MW-3

Total Chromium

The concentration of total chromium in well MW-3 (i.e., 0.042 mg/L) exceeds the established AML of 0.027 mg/L, but remains below the established UTLV of 0.078 mg/L. Comparison of historical total and dissolved chromium concentrations in well MW-3 (06/2016) indicate that chromium exists primarily in particulate form, likely as a suspended sediment. The total chromium detection is, therefore, attributable to a source other than the landfill.

Total Iron

The concentration of total iron in well MW-3 (i.e., 5.4 mg/L) exceeds the established AML of 0.91 mg/L, but remains below the established UTLV of 6.135 mg/L. Comparison of historical total and dissolved iron concentrations in well MW-3 (06/2016) indicate that iron exists primarily in particulate form, likely as a suspended sediment. The total iron detection is, therefore, attributable to a source other than the landfill.

Arsenic

The concentration of arsenic in well MW-3 (i.e., 0.0075 mg/L) exceeds the established AML of 0.0075 mg/L, but remains below the established UTLV of 0.01 mg/L.

Well MW-7R

Fluoride

The concentration of fluoride in downgradient replacement well MW-7R (i.e., 0.86 mg/L) meets the established AML of 0.86 mg/L, but remains below the established UTLV of 0.9776 mg/L for well MW-7. The June 2018 analytical result remains within historical dataset range for well MW-7 (i.e., 0.72 mg/L to 1.2 mg/L), and is likely attributable to natural fluctuations in groundwater quality.

Nitrate

Nitrate was reported as detected at a concentration of 6.2 mg/L, higher than the established AML of 5.0 mg/L; however, a UTLV has not been established for this parameter for well MW-7. The June 2018 analytical result is likely a result of natural fluctuations in groundwater quality, and future analytical data from replacement well MW-7R will be closely monitored.

4.3 Comparison of MW-6 to MW-6R and MW-7 to MW-7R

Attachment 5.2 provides a comparison of pertinent historical analytical data for wells MW-6 and MW-7 (i.e., 2011-2017) to the analytical data for wells MW-6R and MW-7R for the 06/07/18 event. In general, the analytical data show a strong and predictable correlation in water quality between the two wells; and the results for wells MW-6R and MW-7R are statistically consistent with the historical database for wells MW-6 and MW-7, respectively. In addition, the spatial proximity of MW-6R to MW-6 (i.e., approximately 74 feet) and MW-7R to MW-7 (approximately 114 feet) ensures a similarity in groundwater elevations. Therefore, SCLF is requesting SWB approval to adopt the following wells MW-6 and MW-7 groundwater monitoring program criteria for replacement wells MW-6R and MW-7R:

1. background water quality parameters/concentrations
2. statistical parameter values (i.e., BCV, AML, UTLV)
3. reduced parameter list

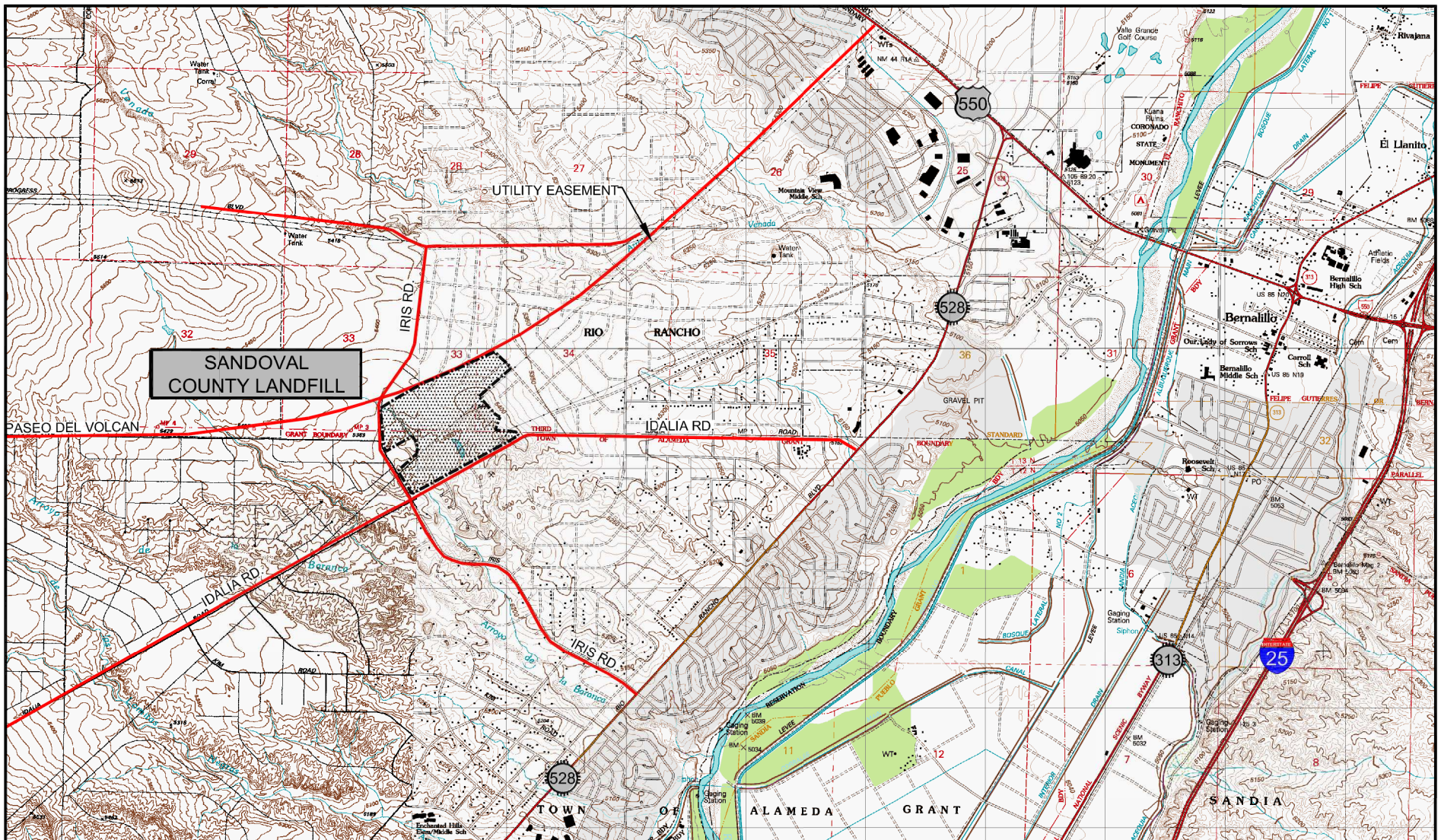
Upon SWB approval of the above requests, SCLF plans to update the site's Groundwater Monitoring Plan and Groundwater Monitoring System Plan.

5.0 SUMMARY AND CONCLUSIONS

The values of detected parameters are generally consistent with values reported for previous monitoring events; and the geochemical signature of site groundwater remains consistent with background water quality. Therefore, it is recommended that annual groundwater sampling at wells MW-2, 3, 5R, 6R, and 7R for the current approved alternate parameter list (**Attachment 2**) continue at the site. The analytical data evaluation and conclusions presented in this Report have been reviewed and verified by a Qualified Groundwater Scientist; and the Certification Statement of Mr. Michael J. Crepeau, P.E., is provided as **Attachment 8**.

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 1
Site Location Map



MAP REFERENCE:
 BERNALILLO, NM (2006), AND LOMA MACHETE, NM (1996),
 USGS 7.5' SERIES, 1:24,000 SCALE, TOPOGRAPHIC QUADRANGLE MAPS.



Drawing: X:\2017\0041.17\02_DSGN\02_DWG\050_CIVIL\SITE LOCATION MAP 83-13-M.dwg
 Date/Time: Aug. 31, 2018-09:21:26 ; LAYOUT: A (LS)
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SITE LOCATION MAP

SANDOVAL COUNTY LANDFILL
 RIO RANCHO, NEW MEXICO



333 Rio Rancho Blvd. N.E.
 Rio Rancho, New Mexico
 Phone: 505-867-6990
 Fax: 505-867-6991

DATE: 08/24/2018	CAD: SITE LOCATION MAP.dwg	PROJECT #: 01004118/0001
DRAWN BY: BSB	REVIEWED BY: MJC	ATTACHMENT 1
APPROVED BY: MJC	www.team-psc.com	

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 2

Approved Alternate Parameter List and Monitoring Schedule

ATTACHMENT 2
APPROVED ALTERNATE PARAMETER LIST AND MONITORING SCHEDULE
Sandoval County Landfill

Subsection A Inorganic Parameters	Sampling Frequency	
	Annual	5 Years
Heavy Metals		
Fluoride, F	X	X
Chloride, Cl ⁻	X	X
Nitrate as N, NO ₃ -N	X	X
Sulfate, SO ₄ ²⁻	X	X
Aluminum, Al	X	X
Barium, Ba	X	X
Beryllium, Be		X
Boron, B		X
Cadmium, Cd		X
Chromium, Cr	X	X
Cobalt, Co	X	X
Copper, Cu		X
Iron, Fe	X	X
Manganese, Mn	X	X
Molybdenum, Mo		X
Nickel, Ni		X
Silver, Ag		X
Vanadium, V		X
Zinc, Zn	X	X
Antimony, Sb		X
Arsenic, As	X	X
Lead, Pb	X	X
Selenium, Se		X
Thallium, Tl		X
Uranium, U	X	X
Mercury, Hg		X
Cyanide, CN ⁻		X
Radioactivity		
Combined Radium, Ra 226 & Ra 228		X
Physical Parameters		
Total Dissolved Solids (TDS)	X	X
pH	X	X
Subsection C Inorganic Parameters	Sampling Frequency	
	Annual	5 Years
Phosphate, PO ₄ ²⁻	X	X
Calcium	X	X
Magnesium	X	X
Potassium	X	X
Sodium	X	X
Total Organic Carbon (TOC)	X	X
Ammonia	X	X
Total Nitrogen (TN)	X	X
Total Kjeldahl Nitrogen (TKN)	X	X
Physical Parameters		
Bicarbonate (as CaCO ₃)	X	X
Carbonate (as CaCO ₃)	X	X
Specific Conductance (SC)	X	X
Field Temperature	X	X
Depth to Water	X	X
Groundwater Elevation	X	X

Approved 08/09/2009; next 5th year event scheduled for 2019

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ATTACHMENT 2
APPROVED ALTERNATE PARAMETER LIST AND MONITORING SCHEDULE
Sandoval County Landfill

Subsection A Organic Parameters	Sampling Frequency	
	Annual	5 Years
EDB & DBCP		
1,2-Dibromo-3-chloropropane (DBCP)	X	X
1,2-Dibromoethane (Ethylene dibromide, EDB)	X	X
Polychlorinated Biphenyls (PCBs)		X
Polycyclic Aromatic Hydrocarbons (PAHs)		
Naphthalene plus monomethylnaphthalenes		X
Benzo(a)pyrene		X
Volatile Organic Compounds		
Benzene	X	X
Toluene	X	X
Ethylbenzene	X	X
1,2-Dichloroethane (EDC)	X	X
Acetone	X	X
Acrylonitrile	X	X
Bromochloromethane	X	X
Bromodichloromethane	X	X
Bromoform	X	X
Bromomethane (Methyl bromide)	X	X
2-Butanone (Methyl ethyl ketone)	X	X
Carbon Disulfide	X	X
Carbon Tetrachloride	X	X
Chlorobenzene	X	X
Chloroethane (Ethyl Chloride)	X	X
Chloroform (Trichloromethane)	X	X
Chloromethane (Methyl chloride)	X	X
cis-1,2-Dichloroethene	X	X
cis-1,3-Dichloropropene	X	X
Dibromochloromethane	X	X
Dibromomethane (Methylene Bromide)	X	X
1,2-Dichlorobenzene (o-Dichlorobenzene)	X	X
1,4 Dichlorobenzene (p-Dichlorobenzene)	X	X
1,1-Dichloroethane	X	X
1,1-Dichloroethene (1,1-DCE)	X	X
1,2-Dichloropropane	X	X
2-Hexanone	X	X
Iodomethane (Methyl iodide)	X	X
4-Methyl-2-pentanone (MIBK)	X	X
Methylene chloride (Dichloromethane, DCM)	X	X
Styrene	X	X
1,1,1,2-Tetrachloroethane	X	X
1,1,2,2-Tetrachloroethane	X	X
Tetrachloroethene (PCE)	X	X
trans-1,2-Dichloroethene	X	X
trans-1,3-Dichloropropene	X	X
trans-1,4-Dichloro-2-butene	X	X
1,1,1-Trichloroethane (TCA)	X	X
1,1,2-Trichloroethane	X	X
Trichloroethene (1,1,2-Trichloroethylene, TCE)	X	X
Trichlorofluoromethane (CFC 11)	X	X
1,2,3-Trichloropropane	X	X
Vinyl Chloride	X	X
Vinyl Acetate	X	X
Xylenes (Total)	X	X
Semivolatile Organic Compounds (SVOCs)		
Phenolics	X	X

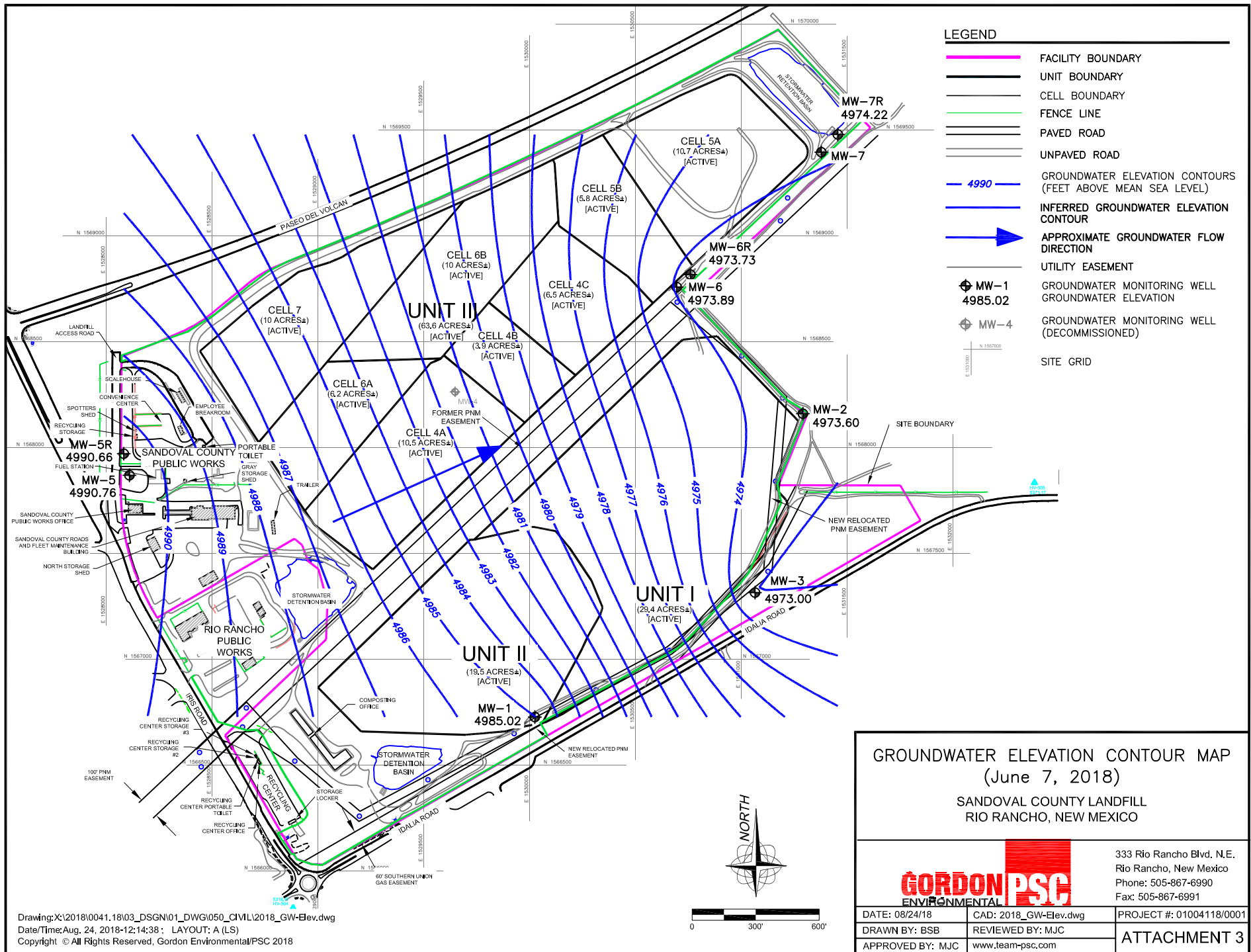
Approved 08/09/2009; next 5th year event scheduled for 2019

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**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
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ATTACHMENT 3

Groundwater Elevation Contour Map
(June 7, 2018)



**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 4

Groundwater Sampling Field Data, Monitoring Well Details, & Field Notes

**Groundwater Monitoring Report
Sandoval County Landfill
June 2018 Sampling Event**

Attachment 4 - Groundwater Monitoring Well and Field Data Summary

**Groundwater Sampling Field Data
June 7, 2018**

Well I.D.	Sampling Date	Top of Well Elevation ⁽¹⁾ (fmsl)	Depth to Water ⁽²⁾ (fbtow)	Temperature ⁽³⁾ (°C)	pH ⁽³⁾ (standard units)	Specific Conductivity ⁽³⁾ (mS/cm)	Purge Volume ⁽⁴⁾ (gal)	Groundwater Elevation (fmsl)
MW-1	NS	5324.82	339.80	NS	NS	NS	NS	4985.02
MW-2	06/07/18	5416.19	442.59	23.3	8.0	573	16	4973.60
MW-3	06/07/18	5376.25	403.25	25.1	7.9	562	18.2	4973.00
MW-5	NS	5364.40	373.64	NS	NS	NS	NS	4990.76
MW-5R	06/07/18	5366.52	375.86	21.5	8.0	792	115	4990.66
MW-6	NS	5423.65	449.76	NS	NS	NS	NS	4973.89
MW-6R	06/07/18	5421.99	448.26	21.1	8.1	668	87.5	4973.73
MW-7	NS	5365.00	396.50	NS	NS	NS	NS	4968.40
MW-7R	06/07/18	5363.32	389.10	19.8	8.0	511	78	4974.22

Notes:

⁽¹⁾ Monitoring well survey data current as of 03/26/2015 for wells MW-1 through MW-5, 06/21/16 for MW-5R, and 06/11/18 for wells MW-6 through MW-7R

⁽²⁾ Recorded prior to the purging procedure. Recorded for all wells on 06/07/18.

⁽³⁾ Stabilized field parameter values during the purging procedure.

⁽⁴⁾ Volume of water purged prior to sample collection.

fmsl: feet above mean sea level

fbtow: feet below top of wellhead (for well MW-5R, feet below top of sounding tube)

NS: Not Sampled

**Groundwater Monitoring Report
Sandoval County Landfill
June 2018 Sampling Event**

Attachment 4 - Groundwater Monitoring Well and Field Data Summary

**Groundwater Monitoring Well Detail Summary
June 7, 2018**

Well I.D.	Well Construction Material	Well Diameter (in.)	Top of Well Elevation ^(1, 2) (fmsl)	Ground Elevation ⁽¹⁾ (fmsl)	Total Depth (fbtow)	Boring Depth (fbgs)	Screen Length (ft.)	Location ^(1, 2)		Well Completion Date
								Northing	Easting	
MW-1	Sch 80 PVC	4	5324.82	5322.45	342.92	340	30	1566727.43	1530025.087	6/10/1993
MW-2	Sch 80 PVC	4	5416.19	5414.11	450.64	448	30	1568159.39	1531290.849	4/12/1996
MW-3	Sch 80 PVC	4	5376.25	5374.32	411.47	410	30	1567315.35	1531065.172	4/2/1996
MW-5	SDR 17 PVC	4.5	5364.40	5362.38	381.57	384	30	1567869.08	1528110.294	8/11/2003
MW-5R	Sch 80 PVC	5	5366.52	5363.93	411.50	430	40	1567970.78	1528082.99	4/15/2016
MW-6	Sch 40 PVC	4	5423.65	5421.90	458.85	462	30	1568758.24	1530695.53	1/28/2004
MW-6R	Sch 80 PVC	5	5421.99	5,418.85	484.00	495	40	1568816.59	1530759.48	5/31/2018
MW-7	Sch 40 PVC	4	5365.09	5363.30	399.89	404	30	1569394.45	1531378.28	3/5/2004
MW-7R	Sch 80 PVC	5	5363.32	5360.39	425.00	430	40	1569430.16	1531418.57	5/31/2018

Notes:

⁽¹⁾ Monitoring well survey data current as of 03/26/2015 for wells MW-1 through MW-5, 06/21/16 for MW-5R, and 06/11/18 for wells MW-6 through MW-7R

⁽²⁾ Well elevation and location data for wells MW-5R, MW-6R, and MW-7R as recorded at sounding tube.

fmsl: feet above mean sea level

fbtow: feet below top of wellhead

fbgs: feet below ground surface

Site: Sandoval County LF

Samplers: BSB/LC

Date: 06/07/18

Ambient Temperature: Ave 81.8°F

Wind Direction/Speed: Ave 4 mph from SW

Recent Precipitation: 0.06 in on 06/06/18

Well ID: MW-5R

Depth-to-water: 375.86

Total Depth: 411.50

Measured from: North (Sounding Hole)

Notes: _____

Well ID: MW-5

Depth-to-water: 373.64

Total Depth: 381.57

Measured from: North of PVC

Notes: _____

Well ID: MW-1

Depth-to-water: 389.80

Total Depth: 342.92'

Measured from: N-PVC

Notes: _____

Well ID: MW-2

Depth-to-water: 442.59

Total Depth: 450.64

Measured from: North

Notes: _____

Well ID: MW-3

Depth-to-water: 403.25'

Total Depth: 411.47'

Measured from: N-Top Well Hand Hole

Notes: _____

Well ID: MW-6

Depth-to-water: 449.76

Total Depth: 458.85'

Measured from: North of PVC

Notes: _____

Well ID: MW-7

Depth-to-water: 396.58

Total Depth: 399.89'

Measured from: North of PVC

Notes: no lock

Well ID: MW-7R

Depth-to-water: 389.10

Total Depth: 430.0

Measured from: N-Sounding Hole

Notes: _____

Well ID: MW-6R

Depth-to-water: 448.25e'

Total Depth: 494.0'

Measured from: N-Sounding Hole

Notes: _____

Site: Sandoval County Landfill

Samplers: BSB/LC

Observers: BSB/LC

Site/Well Condition: OK / OK

Well ID: MW-2

Depth-to-water: 442.59'

Total Depth: 450.64

Measured from: North

Date: 06/01/18

Ambient Temperature: 86° F

Wind Direction/Speed: From NW / 7 mph

Recent Precipitation: 0.06 in on 06/06/18

Equipment Information

Sampling Method:

One Well Volume (feet, gallons) $(450.64 - 442.59) = 8.05$ feet
(Total Depth - DTW) = well column

$8.05 \times 0.65 = 5.233$ gallons
(Well Column \times 0.65) = 1 well-volume

Three Well Volumes $5.233 \times 3 = 15.6995$ gallons
1 well-volume \times 3 = 3 well-volumes

Pump Make: Grundfos® Refi-Flo 4

Pump On: 1100 Water Out: 1118

Generator Fuel:

	Beginning	Mid	Final	Electric Pump
Hz	<u>100 Hz</u>			
disch. Rate				

Notes: Controller Reversed

Sampler(s):

Braden Belliveau

Name

[Signature]

Signature

Field Blank: —

Duplicate: —

Filtered: —

Lidia Cepeda

Name

[Signature]

Signature

Time	Gallons Removed	°C	pH	SC units <u>MS</u>	Observations	Pumping Rate
11:20	2	20.4	8.1	592	Cloudy 20% Slight Metallic Odor	444.78'
11:25	6	20.6	7.6	584	Slight Sulfur odor	—
11:30	10	20.9	7.9	579	"	445.40'
11:33	11.5	22.2	7.7	575	"	445.25
11:36	13.75	21.9	8.0	588	Slightly Cloudy Slight Odor	445.2
11:39	16.0	23.3	8.0	573	Slightly Cloudy Heat + Odor	—

Volume Purged: 16.2 gallons

Sample Start: 11:43

Sample End: 1152

Site: Sandoval County Landfill

Samplers: BSB / LC

Observers: BSB / LC

Site/Well Condition: OK / OK

Well ID: MW-3

Depth-to-water: 403.25'

Total Depth: 411.47

Measured from: N-Top Wellhead Hole

Date: 6/7/18

Ambient Temperature: 88°F

Wind Direction/Speed: From SW 8 mph

Recent Precipitation: 0.06 in on 06/06/18

Equipment Information

Sampling Method:

One Well Volume (Total Depth - DTW) = well column
 $(411.47 - 403.25) = 8.22$ feet

(feet, gallons) $8.22 \times 0.65 = 5.343$ gallons
 (Well Column x 0.65) = 1 well-volume

Three Well Volumes $5.343 \times 3 = 16.03$ gallons
 1 well-volume x 3 = 3 well-volumes

Pump Make: Grundfos® Refi-Flo 4

Pump On: 12:36 Water Out: 1309

Generator Fuel:

Last	Beginning	Mid	Final	Electric Pump
100/92 Hz	100 Hz			
disch. Rate				

Notes:

Controller Reverse

Pump keeps Surging

Sampler(s):

Braden Belliveau

Name

[Signature]
Signature

Field Blank: —

Duplicate: —

Filtered: —

Lidia Cepeda

Name

[Signature]
Signature

Time	Gallons Removed	°C	pH	SC units <u>MS</u>	Observations	Pumping Rate
1:10	1.25	20.4	8.1	596	Mostly Clear Slight Mineral odor	406.04'
1:20	6.5	22.0	7.9	579	"	406.17
1:23	8.25	23.2	7.9	570	"	406.19
1:26	10.0	23.2	8.0	570	"	—
1:29	11.5	24.4	7.9	534	"	406.20
1:32	13.25	24.4	8.2	567	60% Cloudy Tan Slight Mineral odor	406.19
1:35	15.0	24.5	7.9	570	Visually Yellow	406.20
1:37	16.0	25.2	8.0	565	"	—
1:40	18.2	25.1	7.9	562	Visually Tan	—

Volume Purged: 18.2 gallons

Sample Start: 14:02

Sample End: 14:13

Site: Sandoval County Landfill
 Samplers: BSB/LC
 Observers: BSB/LC
 Site/Well Condition: Good / Good

Equipment Information

Sampling Method:

One Well Volume (feet, gallons) $(411.50 - 375.86) = 35.64$ feet
 (Total Depth - DTW) = well column
 $35.64 \times 1.02 = 36.35$ gallons
 (Well Column x 1.02) = 1 well-volume
 Three Well Volumes $36.35 \times 3 = 109.06$ gallons
 1 well-volume x 3 = 3 well-volumes

Pump Make: Grundfos® Refi-Flo 4

Pump On: 9:00 A Water Out: 9:03 A

Generator Fuel:				Electric Pump
	Beginning	Mid	Final	
H ₂	70 H ₂			
disch. Rate				

Notes: Controller Reverser

Well ID: MW-5R
 Depth-to-water: 375.86
 Total Depth: 411.50
 Measured from: Soundings Hole - N

Date: 6/7/18
 Ambient Temperature: 69°F
 Wind Direction/Speed: 0-1 mph from North
 Recent Precipitation: 0.06" - 06/06/18

Time	Gallons Removed	°C	pH	SC units <u>MS</u>	Observations	DTW
9:04	2.5	18.3	7.4	801	small black specs odor - Foul - Rotten Egg Mostly Clear	—
9:12	25	20.0	7.7	796	mostly clear slight foul odor	377.28
9:18	40	21.3	8.0	792	"	—
9:23	55	22.0	7.8	789	slight sulfur odor still clear	377.30
9:29	65	21.5	7.8	791	"	377.28
9:34	80	21.2	7.9	795	"	—
9:37	90	21.6	7.9	783	"	377.26
9:43	100	21.6	7.8	784	"	—
9:47	115	21.5	8.0	792	"	—

Volume Purged: 116 gallons

Sample Start: 9:47

Sample End: 9:57

Field Blank: 9:27

Duplicate: 9:53

Filtered: —

Sampler(s): Braden Belliveau
 Name
[Signature]
 Signature

Lidia Cepeda
 Name
[Signature]
 Signature

Groundwater Monitoring Field Notes

Site: Sandoval County Landfill

Samplers: BSB/LC

Observers: "

Site/Well Condition: Good / Good

Well ID: MW-6R

Depth-to-water: 448.26'

Total Depth: 494.0

Measured from: Top PVC

Date: 06/07/18

Ambient Temperature: 97°F

Wind Direction/Speed: Fr SW 9 mph

Recent Precipitation: 0.46 in on 06-06-18

Equipment Information

Sampling Method:

One Well Volume (feet, gallons)	$(494 - 448.26) = 45.74$ feet
	(Total Depth - DTW) = well column
	$45.74 \times 0.65 = 29.73$ gallons
	(Well Column \times 0.65) = 1 well-volume
Three Well Volumes	$29.73 \times 3 = 89.193$ gallons
	1 well-volume \times 3 = 3 well-volumes

Pump Make: Grundfos® Refi-Flo 4

Pump On: 14:26 Water Out: 14:29

Generator Fuel:				Electric Pump
Last	Beginning	Mid	Final	
98/100 Hz	100			
disch. Rate				

Notes: Controller reversed

Time	Gallons Removed	°C	pH	SC units <u>MS</u>	Observations	Pumping Rate
14:30	4	18.8	8.3	684	Clear N. odor	449.54
14:35	15	19.2	7.9	669	" "	449.55
14:40	25	19.9	8.3	662	" "	449.56
14:45	33	21.1	8.0	666	" "	449.61
14:50	45	20.9	8.1	670	" "	449.54
14:55	55	20.7	7.9	667	" "	449.52
15:00	65	20.8	8.0	669	" "	449.52
15:05	77	20.8	8.0	665	" "	449.52
15:10	87.5	21.1	8.1	668	" "	—

Volume Purged: 94 gallons

Sample Start: 15:15

Sample End: 15:28

Sampler(s): Braden Belliveau

Name

[Signature]

Signature

Field Blank: —

Duplicate: —

Filtered: —

Lidia Cepeda

Name

[Signature]

Signature

Groundwater Monitoring Field Notes

Site: Sandoval County Landfill

Samplers: BSB/LC

Observers: "

Site/Well Condition: Good / Good

Equipment Information

Sampling Method:

One Well Volume $(430.0 - 389.10) = 40.9$ feet
(Total Depth - DTW) = well column
(feet, gallons) $40.9 \times 0.65 = 26.585$ gallons
(Well Column x 0.65) = 1 well-volume

Three Well Volumes $26.585 \times 3 = 79.755$ gallons
1 well-volume x 3 = 3 well-volumes

Pump Make: Grundfos® Refi-Flo 4

Pump On: 1555 Water Out: 1556

Generator Fuel:				Electric Pump
	Beginning	Mid	Final	
Hz	94			
disch. Rate				

Notes: Controller Reversed

Well ID: MW-7R

Depth-to-water: 389.10

Total Depth: 430

Measured from: Top well head - N

Date: 06/07/18

Ambient Temperature: 97°F

Wind Direction/Speed: From W / 4 mph

Recent Precipitation: 0.06 in on 06-06-18

Time	Gallons Removed	°C	pH	SC units μS	Observations	Pumping Rate
1557	3.5	18.3	8.3	638	Clear No odor	390.79
1602	20.0	18.8	7.9	508	" "	391.21
1607	37.5	19.7	8.0	513	" "	391.61
1611	50	19.5	8.1	508	" "	391.71
1614	59	19.5	8.0	510	" "	391.79
1617	70	19.8	8.1	509	" "	391.84
1620	78	19.8	8.0	511	" "	—

Volume Purged: 80 gallons

Sample Start: 1623

Sample End: 1637

Sampler(s): Braden Belliveau

Name

[Signature]

Signature

Field Blank: —

Duplicate: —

Filtered: —

Lidia Cepeda

Name

[Signature]

Signature

Groundwater Monitoring Field Notes

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 5

Summary of Inorganic Parameter Analytical Results

Attachment 5 - Summary of Organic Parameter Analytical Results

Notes for Summary of Inorganic Parameter Analytical Results

- (1) All parameter concentrations expressed in mg/L, except for Field pH (standard units), Field SC ($\mu\text{S}/\text{cm}$), Field Temperature ($^{\circ}\text{C}$), and Phenolics ($\mu\text{g}/\text{L}$).

The following statistical parameters were updated on 07/03/14. The well/parameter-specific statistical values (i.e., calculated BCV, calculated/established UTLV, and calculated/established AML) included in **Attachment 5** were approved by NMED on 02/09/15.

Calculated BCV (2014) = Calculated Background Concentration Value

- The simple mean (i.e., arithmetic average) of the concentrations of each parameter reported as detected a minimum of 2 times within the background data set (1996 - 03/2014). If reported as detected only once, the BCV is assigned the value of the single detection. If reported as 100% non-detect, the BCV is assigned the value of the highest laboratory practical quantitation limit (PQL) within the background data set (1996 - 2014).

Regulatory Presumptive AML = Regulatory Presumptive Assessment Monitoring Level

2014 Established AML = Established Assessment Monitoring Level

- Parameter and well-specific value defined as the greater of either the regulatory presumptive AML (05/05/10) or the calculated BCV for each well/parameter combination.

2014 Calculated UTLV = Calculated Upper Tolerance Limit Value

- Parameter and well-specific statistical value calculated via evaluation of applicable background monitoring analytical data by Sanitas®.
- Non-detects are assigned a value of $\frac{1}{2}$ the laboratory PQL for UTLV statistical calculations with Sanitas™.

2014 Established UTLV = Established Upper Tolerance Limit Value

- Equals the Calculated UTLV if Calculated UTLV > Established AML
- Parameters for which the calculated UTLV \leq the regulatory presumptive AML were not assigned an established UTLV.
- Parameters for which the background dataset contained 100% non-detects were not assigned an established UTLV.

N/A = UTLV not assigned


GWPS = Regulatory Groundwater Protection Standard (20.9.9.20 NMAC Subsection A)

Bold laboratory analytical values for the current event indicate an exceedance of the Established AML.

Bold italics laboratory analytical values for the current event indicate an exceedance of the Established UTLV.

Parenthetical values indicate the results of dissolved metals analyses.

 Indicates no sampling/analysis performed for corresponding monitoring date

 The D qualifier indicates the sample was diluted by the laboratory prior to analysis

 Field data not available. Laboratory data provided where available.

 Parenthetical values represent dissolved metals analytical results

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 5.1

Summary of Inorganic Parameter Analytical Results: Wells MW-2, 3, and 5R

Groundwater Monitoring Report
Sandoval County Landfill
June 2018 Sampling Event

Attachment 5.1 - Summary of Inorganic Parameter Analytical Results

MW-2	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
PARAMETER ⁽¹⁾													
Fluoride, F	0.75	0.75	0.78	0.72	0.76	0.77	0.66	0.81	1.045	1.045	0.81	0.8	1.6
Chloride, Cl ⁻	73	74	73	76	74	82	69	83.18	89.36	N/A	187.5	187.5	250
Nitrate as N, NO ₃ -N	<1.0	1.0	1.0	1.0	1.1	1.0	0.95	0.94	1.4	N/A	5.0	5.0	10
Sulfate, SO ₄ ²⁻	50	50	51	52	52	51	47	58.56	69.76	N/A	450	450	600
Aluminum, Al	0.74	0.23	0.23	0.11	0.023	0.550	0.16	0.43	1.5	N/A	3.75	3.75	5.0
Barium, Ba	0.062	0.052	0.053	0.053	0.052	0.060	0.050	0.052	0.06729	N/A	0.5	0.5	1.0
Chromium, Cr	0.05	0.021	0.011	0.058	0.0070 (<0.0060)	0.0390	0.016	0.026	0.052	0.052	0.026	0.025	0.05
Cobalt, Co	<0.025	<0.025	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.030	0.015	N/A	0.0375	0.0375	0.05
Iron, Fe	5.2	1.8	1.4	1.6	0.47 (<0.020)	3.5	1.3	1.43	6.654	6.654	1.43	0.75	1.0
Manganese, Mn	0.061	<0.03	0.012	0.0075	0.0053 (0.0039)	0.0027	0.0099	0.13	0.304	0.304	0.15	0.15	0.2
Zinc, Zn	<0.05	<0.05	<0.010	0.013	<0.010	<0.010	<0.010	0.071	0.0729	N/A	7.5	7.5	10
Arsenic, As	0.005	<0.005	0.0040	0.0041	0.0033 (0.0031)	0.0051	0.0041	0.0057	0.0079	0.0079	0.0057	0.005	0.01
Lead, Pb	<0.01	<0.01	<0.0010	0.0015	0.00057 (<0.00050)	0.0012	0.0010	0.01	0.005	N/A	0.025	0.025	0.05
Uranium, U	<0.015	<0.015	0.0019	0.0024	0.0021	0.0020	0.0018	0.0036	1.25	1.25	0.015	0.015	0.03
Total Dissolved Solids, TDS	366	366	396	350	344	368	372	365.36	486	N/A	750	750	1,000
Field pH (standard units)	7.8	7.9	7.8	7.3	7.72	7.8	8.0	7.70	7.068 - 8.305	N/A	6 - 9	6 - 9	6 - 9
Subsection A Organic Parameter	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
Phenolics (total)	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.005	0.0025	N/A	0.00375	0.00375	0.005
Subsection C Parameters	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
Phosphate, PO ₄	<0.5	<0.5	<0.50	<0.50	<0.50	<2.5	<0.50	1.0	—	—	—	—	—
Calcium, Ca	39	36	38	35	38	41	37	41	—	—	—	—	—
Magnesium, Mg	4.6	4.2	4.2	4.0	4.4	4.6	4.3	4.8	—	—	—	—	—
Potassium, K	4.2	4.2	4.2	4.5	4.1	4.3	4.2	4.5	—	—	—	—	—
Sodium, Na	70	67	70	68	71	71	75	72	—	—	—	—	—
Total Organic Carbon, TOC	15	27	2.5	4.8	5.9	8.6	3.9	11.8	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	<1.0	1.0	1.0	1.0	1.1	1.0	<1.0	1.0	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	110	110	110	109.7	112.4	113.7	111.5	110	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.000	<2.000	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.6	—	—	—	—	—
Field Temperature (°C)	19.8	20.2	19.9	20.7	22.6	22.2	23.3	19.0	—	—	—	—	—
Field SC (mS/cm)	638	598	556	617	546	574	573	550	—	—	—	—	—

Groundwater Monitoring Report
Sandoval County Landfill
June 2018 Sampling Event

Attachment 5.1 - Summary of Inorganic Parameter Analytical Results

MW-3													
PARAMETER ⁽¹⁾	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
Fluoride, F	0.71	0.65	0.73	0.68	0.71	0.68	<0.50	0.69	0.8417	0.8417	0.8	0.8	1.6
Chloride, Cl ⁻	75	76	76	81	76	74	78	80.93	87.52	N/A	187.5	187.5	250
Nitrate as N, NO ₃ -N	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.3	N/A	5.0	5.0	10
Sulfate, SO ₄ ²⁻	55	52	54	55	54	55	52	60.93	69.18	N/A	450	450	600
Aluminum, Al	0.80	0.35	0.038	0.022	0.36	0.22	2.0	0.33	1.5	N/A	3.75	3.75	5.0
Barium, Ba	0.064	0.056	0.047	0.049	0.060	0.052	0.056	0.050	0.06628	N/A	0.5	0.5	1.0
Chromium, Cr	0.028	0.018	0.0074	<0.0060	0.16 (<0.0060)	0.018	0.042	0.027	0.078	0.078	0.027	0.025	0.05
Cobalt, Co	<0.025	<0.025	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.03	0.015	N/A	0.0375	0.0375	0.05
Iron, Fe	5.10	2.20	0.27	0.32	3.5 (<0.020)	1.4	5.4	0.91	6.135	6.135	0.91	0.75	1.0
Manganese, Mn	0.047	<0.03	0.0024	0.0039	0.057 (0.0021)	0.018	0.055	0.043	0.052	N/A	0.15	0.15	0.2
Zinc, Zn	<0.05	<0.05	<0.010	<0.010	<0.010	<0.010	<0.010	0.061	0.0612	N/A	7.5	7.5	10
Arsenic, As	0.0083	0.0083	0.0057	0.0058	0.0080 (0.0050)	0.0056	0.0075	0.0069	0.01	0.01	0.0069	0.005	0.01
Lead, Pb	<0.01	<0.01	<0.0010	<0.0010	0.0024 (<0.00050)	0.00072	0.0015	0.01	0.005	N/A	0.025	0.025	0.05
Uranium, U	<0.015	<0.015	0.0020	0.0023	0.0025	0.0020	0.0020	0.0032	1.25	1.25	0.015	0.015	0.03
Total Dissolved Solids, TDS	370	368	382	358	344	360	366	363.20	385.2	N/A	750	750	1,000
Field pH (standard units)	7.8	7.8	7.8	7.5	7.73	7.9	7.9	7.77	7.378 - 8.314	N/A	6 - 9	6 - 9	6 - 9
Subsection A Organic Parameter	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
Phenolics (total)	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.005	0.0025	N/A	0.00375	0.00375	0.005
Subsection C Parameters	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
Phosphate, PO ₄	<0.5	<0.5	<0.50	<0.50	<0.50	<2.5	<2.5	1.0	—	—	—	—	—
Calcium, Ca	41	40	39	38	41	42	40	42	—	—	—	—	—
Magnesium, Mg	5.2	4.9	4.5	4.4	4.9	4.7	4.8	4.8	—	—	—	—	—
Potassium, K	4.5	4.5	4.0	4.6	4.4	4.1	4.5	4.3	—	—	—	—	—
Sodium, Na	73	69	67	70	70	68	72	74	—	—	—	—	—
Total Organic Carbon, TOC	1.3	30	7.1	13	13	1.7	2.1	7.8	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	110	110	100	106.1	108.8	107.8	107.1	103	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.000	<2.000	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Field Temperature (°C)	20.9	20.2	18.6	21.1	22.3	22.2	25.1	18.9	—	—	—	—	—
Field SC (mS/cm)	621	599	570	622	552	573	562	566	—	—	—	—	—

Groundwater Monitoring Report
Sandoval County Landfill
June 2018 Sampling Event

Attachment 5.1 - Summary of Inorganic Parameter Analytical Results

MW-5R	MW-5				MW-5R			2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
PARAMETER ⁽¹⁾	03/13/12	03/13/13	03/18/14	03/25/15	06/01/16	04/13/17	06/07/18						
Fluoride, F	0.78	1.60	0.70	0.75	0.70	0.65	0.58	0.77	0.9399	0.940	0.8	0.8	1.6
Chloride, Cl ⁻	170	160	170	180	170	170	160	176.00	206.4	206.4	187.5	187.5	250
Nitrate as N, NO ₃ -N	<1.0	<1.0	<0.10	<0.10	0.60	0.75	0.71	1.0	0.5	N/A	5.0	5.0	10
Sulfate, SO ₄ ²⁻	20	<5.0	27	1.3	32	29	31	29.84	47.94	N/A	450	450	600
Aluminum, Al	<0.15	<0.15	0.086	0.050	<0.020	9.6 (<0.020)	<0.020	0.16	1.5	N/A	3.75	3.75	5.0
Barium, Ba	0.12	0.14	0.19	0.20	0.093	0.21	0.087	0.12	0.2291	N/A	0.5	0.5	1.0
Chromium, Cr	<0.01	0.02	0.025	0.0064	0.015 (<0.0060)	0.045	<0.0060	0.047	0.14	0.14	0.047	0.025	0.05
Cobalt, Co	<0.025	<0.025	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.03	0.015	N/A	0.0375	0.0375	0.05
Iron, Fe	0.98	0.82	1.4	0.83	0.15 (<0.020)	11 (0.020)	0.022	1.20	1.649	1.649	1.20	0.75	1.0
Manganese, Mn	0.082	0.073	0.41	0.17	0.024 (0.023)	0.30	<0.0020	0.11	0.4475	0.4475	0.15	0.15	0.2
Zinc, Zn	0.18	0.95	1.2	2.0	0.015	0.029	<0.010	0.80	1.3	N/A	7.5	7.5	10
Arsenic, As	0.0057	0.0091	0.0062	0.0067	0.0044 (0.0042)	0.011	0.0069	0.0080	0.012	0.012	0.008	0.005	0.01
Lead, Pb	<0.01	0.013	0.011	0.025	0.00050 (<0.00050)	0.0060	<0.00050	0.020	0.017	N/A	0.025	0.025	0.05
Uranium, U	<0.015	<0.015	0.0012	0.0019	0.0024	0.0028	0.0019	0.0026	1.25	1.25	0.015	0.015	0.03
Total Dissolved Solids, TDS	479	472	490	454	460	473	473	478.47	545.5	N/A	750	750	1,000
Field pH (standard units)	7.5	7.4	7.5	7.5	7.69	8.2	8.0	7.53	6.622 - 8.435	N/A	6 - 9	6 - 9	6 - 9
Subsection A Organic Parameter	03/13/12	03/13/12	03/18/14	03/25/15	06/01/16	04/13/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
Phenolics (total)	<0.0025	0.0049	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0041	0.0049	0.0049	0.00407	0.00375	0.005
Subsection C Parameters	03/13/12	03/13/12	03/18/14	03/25/15	06/01/16	04/13/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
Phosphate, PO ₄	<0.5	<0.5	<0.50	<0.50	<0.50	<2.5	<0.50	1.0	—	—	—	—	—
Calcium, Ca	51	54	50	48	48	63	45	45	—	—	—	—	—
Magnesium, Mg	5.6	6.3	5.7	5.4	5.2	8.5	4.9	5.1	—	—	—	—	—
Potassium, K	5.8	6.6	6.6	6.7	5.3	7.3	5.2	6.0	—	—	—	—	—
Sodium, Na	100	94	97	100	110	110	110	105	—	—	—	—	—
Total Organic Carbon, TOC	16	9	6.5	1.8	4.0	<1.0	1.6	8	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	130	140	130	138.4	104.5	102.3	101.8	119	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.000	<2.000	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	—	—	—	—	—
Field Temperature (°C)	17.4	16.0	15.3	17.1	22.4	19.1	21.5	16.6	—	—	—	—	—
Field SC (mS/cm)	855	835	801	854	768	834	792	798	—	—	—	—	—

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 5.2

Comparison of Analytical Results: MW-6 to MW-6R and MW-7 to MW-7R

Groundwater Monitoring Report
Sandoval County Landfill
June 2018 Sampling Event

Attachment 5.2 - Comparison of Analytical Results

MW-6R	MW-6							MW-6R	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	(2014) Established AML	Presumptive AML	GWPS
PARAMETER ⁽¹⁾	03/10/11	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/09/17	06/07/18						
Fluoride, F	0.71	0.66	0.67	0.69	0.62		<0.50	0.53	0.70	0.8235	0.8235	0.8	0.8	1.6
Chloride, Cl ⁻	130	120	120	120	130		120	100	124.29	130	N/A	187.5	187.5	250
Nitrate as N, NO ₃ -N	<1.0	<1.0	<1.0	0.74	0.60		<0.50	1.1	0.89	1.0	N/A	5.0	5.0	10
Sulfate, SO ₄ ²⁻	47	46	43	44	49		<2.5	42	48.86	53.59	N/A	450	450	600
Aluminum, Al	<0.15	0.19	0.15	0.12	0.026		0.040	<0.020	0.15	1.5	N/A	3.75	3.75	5.0
Barium, Ba	0.06	0.061	0.056	0.055	0.069		0.10	0.050	0.053	0.06468	N/A	0.5	0.5	1.0
Chromium, Cr	<0.01	<0.01	0.013	0.0064	<0.0060		0.024	<0.0060	0.012	0.016	N/A	0.025	0.025	0.05
Cobalt, Co	<0.025	<0.025	<0.025	<0.0060	<0.0060		<0.0060	<0.0060	0.03	0.015	N/A	0.0375	0.0375	0.05
Iron, Fe	0.11	0.17	0.22	0.14	0.14		3.4 (2.9)	0.081	0.17	0.22	N/A	0.75	0.75	1.0
Manganese, Mn	<0.03	<0.03	<0.03	0.0079	0.025		0.35 (0.45)	0.0040	0.079	0.15	N/A	0.15	0.15	0.2
Zinc, Zn	<0.05	<0.05	<0.05	0.010	<0.010		<0.010	<0.010	0.030	0.05	N/A	7.5	7.5	10
Arsenic, As	0.0091	0.0068	0.0078	0.0066	0.0056		0.0018	0.0062	0.009	0.011	0.011	0.009	0.005	0.01
Lead, Pb	<0.01	<0.01	<0.01	<0.0010	<0.0010		<0.00050	<0.00050	0.01	0.005	N/A	0.025	0.025	0.05
Uranium, U	<0.015	<0.015	<0.015	0.0024	0.0031		<0.00050	0.0018	0.0025	1.25	1.25	0.015	0.015	0.03
Total Dissolved Solids, TDS	427	433	439	224	424		537	407	414.50	453.4	N/A	750	750	1,000
Field pH (standard units)	7.9	7.8	7.8	7.7	7.5		7.0	8.1	7.84	7.555 - 8.217	N/A	6 - 9	6 - 9	6 - 9
Subsection A Organic Parameter	03/10/11	03/12/12	03/12/13	03/18/14	03/25/15	06/01/16	03/09/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	Established AML (2014)	Presumptive AML	GWPS
Phenolics (total)	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025		0.0058	<0.0025	0.003	0.0015	N/A	0.00375	0.00375	0.005
Subsection C Parameters	03/10/11	03/12/12	03/12/13	03/18/14	03/25/15	06/01/16	03/09/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	(2014) Established AML	Presumptive AML	GWPS
Phosphate, PO ₄	<0.5	<0.5	<0.5	<0.50	<0.50		<2.5	<0.50	1.0	—	—	—	—	—
Calcium, Ca	46	46	50	45	42		56	44	44	—	—	—	—	—
Magnesium, Mg	5.7	5.4	5.8	5.0	4.8		5.5	4.9	5.3	—	—	—	—	—
Potassium, K	5.0	4.9	5.4	4.5	5.1		4.6	4.8	4.7	—	—	—	—	—
Sodium, Na	98	93	92	90	88		90	80	91	—	—	—	—	—
Total Organic Carbon, TOC	<1.0	<1.0	14	18	6.9		100	<1.0	11.2	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<0.5	<1.0	<1.0		<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	1.1	1.0	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	110	110	110	110	118.0		150.4	102.4	109	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.0		<2.000	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	1.0	—	—	—	—	—
Field Temperature (°C)	18.3	21.5	23.9	19.1	19.4		16.3	21.1	21.1	—	—	—	—	—
Field SC (mS/cm)	605	804	734	700	776		771	668	728	—	—	—	—	—

Groundwater Monitoring Report
Sandoval County Landfill
June 2018 Sampling Event

Attachment 5.2 - Comparison of Analytical Results

MW-7R	MW-7							MW-7R	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
PARAMETER ⁽¹⁾	03/10/11	03/12/12	03/13/13	03/18/14	03/25/15	05/24/16	03/08/17	06/07/18						
Fluoride, F	0.88	0.83	0.84	0.85	0.78	0.80	1.2	0.86	0.86	0.9776	0.9776	0.86	0.8	1.6
Chloride, Cl ⁻	46	42	41	42	42	40	49	48	43.43	48	N/A	187.5	187.5	250
Nitrate as N, NO ₃ -N	1.9	1.9	2.0	2.1	0.78	<1.0	<0.10	6.2	2.6	3.2	N/A	5.0	5.0	10
Sulfate, SO ₄ ²⁻	53	55	55	55	44	51	61	43	62.07	84.24	N/A	450	450	600
Aluminum, Al	<0.15	<0.15	0.20	0.19	1.0	0.36	0.58	0.085	0.19	1.5	N/A	3.75	3.75	5.0
Barium, Ba	0.08	0.074	0.062	0.061	0.060	0.061	0.065	0.051	0.060	0.08	N/A	0.5	0.5	1.0
Chromium, Cr	<0.01	<0.01	<0.01	0.011	0.016	0.0085 (<0.0060)	0.030	<0.0060	0.017	0.028	0.028	0.025	0.025	0.05
Cobalt, Co	<0.025	<0.025	<0.025	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.03	0.015	N/A	0.0375	0.0375	0.05
Iron, Fe	0.13	0.17	0.21	0.20	0.91	0.47 (0.037)	0.99 (0.48)	0.090	0.19	0.31	N/A	0.75	0.75	1.0
Manganese, Mn	0.086	0.05	<0.03	0.022	0.050	0.020 (0.015)	0.022	0.013	0.074	0.19	0.19	0.15	0.15	0.2
Zinc, Zn	<0.05	<0.05	<0.05	<0.010	0.023	0.015	0.023	<0.010	0.05	0.025	N/A	7.5	7.5	10
Arsenic, As	0.0064	<0.005	0.0070	0.0059	0.0065	0.0055 (0.0052)	0.0068	0.0048	0.0064	0.007	0.007	0.0064	0.005	0.01
Lead, Pb	<0.01	<0.01	<0.01	<0.0010	0.0023	0.0015 (<0.00050)	0.0016	<0.00050	0.01	0.005	N/A	0.025	0.025	0.05
Uranium, U	<0.015	<0.015	<0.015	0.0028	0.0023	0.0022	0.0027	0.0020	0.0031	1.25	1.25	0.015	0.015	0.03
Total Dissolved Solids, TDS	326	329	333	172	313	297	324	332	322.64	358	N/A	750	750	1,000
Field pH (standard units)	8.1	7.9	7.9	7.9	7.5	7.79	7.7	8.0	7.86	7.639 - 8.211	N/A	6 - 9	6 - 9	6 - 9
Subsection A Organic Parameter	03/10/11	03/12/12	03/13/13	03/18/14	03/25/15	05/24/16	03/08/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
Phenolics (total)	<0.0025	<0.0025	0.0032	<0.0025	<0.0025	<0.0025	0.0029	<2.5	0.0032	0.0015	N/A	0.00375	0.00375	0.005
Subsection C Parameters	03/10/11	03/12/12	03/13/13	03/18/14	03/25/15	05/24/16	03/08/17	06/07/18	2014 Calculated BCV	2014 Calculated UTLV	2014 Established UTLV	2014 Established AML	Presumptive AML	GWPS
Phosphate, PO ₄	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	1.0	—	—	—	—	—
Calcium, Ca	40	40	39	39	36	41	44	35	37	—	—	—	—	—
Magnesium, Mg	5.4	5.1	4.8	4.7	4.7	5.2	5.1	4.2	4.9	—	—	—	—	—
Potassium, K	4.5	4.3	4.2	4.6	4.5	4.2	4.4	4.1	4.3	—	—	—	—	—
Sodium, Na	61	58	55	55	54	58	56	68	61	—	—	—	—	—
Total Organic Carbon, TOC	3.4	<1.0	<1.0	3.3	76	4.6	54	<1.0	3.8	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	1.9	1.9	2.0	2.1	1.9	<1.0	<1.0	6.2	2.6	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	130	120	120	120	137.2	135.7	127.9	107.8	119	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.000	<2.000	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Field Temperature (°C)	21.5	20.8	21.4	19.3	17.4	19.9	17.5	19.8	21.1	—	—	—	—	—
Field SC (mS/cm)	416	537	519	493	535	488	511	511	512	—	—	—	—	—

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 6

Laboratory Report and Chain-of-Custody Documentation
(06/07/18 Sampling Event)



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 13, 2018

Mike Crepeau

Gordon Environmental/PSC

213 S. Camino del Pueblo

Bernalillo, NM 87004

TEL:

FAX

RE: SCLF

OrderNo.: 1806511

Dear Mike Crepeau:

Hall Environmental Analysis Laboratory received 8 sample(s) on 6/8/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: 7/13/2018

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-2

Project: SCLF

Collection Date: 6/7/2018 11:43:00 AM

Lab ID: 1806511-001

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: JME
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/11/2018 6:59:55 PM
1,2-Dibromoethane	ND	0.0094		µg/L	1	6/11/2018 6:59:55 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	0.66	0.10		mg/L	1	6/9/2018 1:23:56 AM
Chloride	69	10		mg/L	20	6/9/2018 1:36:21 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	6/9/2018 1:23:56 AM
Nitrogen, Nitrate (As N)	0.95	0.10		mg/L	1	6/9/2018 1:23:56 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	6/9/2018 1:23:56 AM
Sulfate	47	10		mg/L	20	6/9/2018 1:36:21 AM
EPA METHOD 200.7: METALS						Analyst: pmf
Aluminum	0.16	0.020		mg/L	1	6/21/2018 7:42:10 PM
Barium	0.050	0.0020		mg/L	1	6/21/2018 7:42:10 PM
Calcium	37	1.0		mg/L	1	6/21/2018 7:42:10 PM
Chromium	0.016	0.0060		mg/L	1	6/21/2018 7:42:10 PM
Cobalt	ND	0.0060		mg/L	1	6/21/2018 7:42:10 PM
Iron	1.3	0.10	*	mg/L	5	6/25/2018 10:03:32 PM
Magnesium	4.3	1.0		mg/L	1	6/21/2018 7:42:10 PM
Manganese	0.0099	0.0020		mg/L	1	6/21/2018 7:42:10 PM
Potassium	4.2	1.0		mg/L	1	6/21/2018 7:42:10 PM
Sodium	75	1.0		mg/L	1	6/21/2018 7:42:10 PM
Zinc	ND	0.010		mg/L	1	6/21/2018 7:42:10 PM
EPA 200.8: METALS						Analyst: DBK
Arsenic	0.0041	0.0010		mg/L	1	6/27/2018 8:21:16 PM
Lead	0.0010	0.00050		mg/L	1	6/27/2018 8:21:16 PM
Uranium	0.0018	0.00050		mg/L	1	6/27/2018 8:21:16 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Benzene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Toluene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Ethylbenzene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Acetone	ND	10		µg/L	1	6/14/2018 2:50:00 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Bromoform	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Bromomethane	ND	2.0		µg/L	1	6/14/2018 2:50:00 AM
2-Butanone	ND	10		µg/L	1	6/14/2018 2:50:00 AM
Carbon disulfide	ND	10		µg/L	1	6/14/2018 2:50:00 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-2

Project: SCLF

Collection Date: 6/7/2018 11:43:00 AM

Lab ID: 1806511-001

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Chlorobenzene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Chloroethane	ND	2.0		µg/L	1	6/14/2018 2:50:00 AM
Chloroform	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Chloromethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Dibromomethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	6/14/2018 2:50:00 AM
2-Hexanone	ND	10		µg/L	1	6/14/2018 2:50:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/14/2018 2:50:00 AM
Methylene Chloride	ND	2.5		µg/L	1	6/14/2018 2:50:00 AM
Styrene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	6/14/2018 2:50:00 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/14/2018 2:50:00 AM
Vinyl chloride	ND	0.40		µg/L	1	6/14/2018 2:50:00 AM
Xylenes, Total	ND	2.0		µg/L	1	6/14/2018 2:50:00 AM
Acrylonitrile	ND	10		µg/L	1	6/14/2018 2:50:00 AM
Bromochloromethane	ND	2.0		µg/L	1	6/14/2018 2:50:00 AM
Iodomethane	ND	10		µg/L	1	6/14/2018 2:50:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/14/2018 2:50:00 AM
Vinyl acetate	ND	10		µg/L	1	6/14/2018 2:50:00 AM
Surr: 1,2-Dichloroethane-d4	96.5	70-130		%Rec	1	6/14/2018 2:50:00 AM
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	6/14/2018 2:50:00 AM
Surr: Dibromofluoromethane	91.8	70-130		%Rec	1	6/14/2018 2:50:00 AM
Surr: Toluene-d8	97.3	70-130		%Rec	1	6/14/2018 2:50:00 AM

TOTAL PHENOLICS BY SW-846 9067

Analyst: **JME**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: 7/13/2018

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-2

Project: SCLF

Collection Date: 6/7/2018 11:43:00 AM

Lab ID: 1806511-001

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL PHENOLICS BY SW-846 9067						
Phenolics	ND	2.5		µg/L	1	Analyst: JME 6/20/2018
EPA METHOD 9060 TOC						
Total Organic Carbon	3.9	1.0		mg/L	1	Analyst: DAM 6/12/2018 4:50:49 PM
SM2510B: SPECIFIC CONDUCTANCE						
Conductivity	580	5.0		µmhos/c	1	Analyst: JRR 6/13/2018 7:11:37 PM
SM 4500 NH3: AMMONIA						
Nitrogen, Ammonia	ND	1.0		mg/L	1	Analyst: smb 6/23/2018 11:51:00 AM
TOTAL NITROGEN						
Nitrogen, Total	ND	1.0		mg/L	1	Analyst: SRM 6/29/2018 12:59:00 PM
SM4500-H+B / 9040C: PH						
pH	7.86		H	pH units	1	Analyst: JRR 6/13/2018 7:11:37 PM
SM2320B: ALKALINITY						
Bicarbonate (As CaCO3)	111.5	20.00		mg/L Ca	1	Analyst: JRR 6/13/2018 7:11:37 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/13/2018 7:11:37 PM
Total Alkalinity (as CaCO3)	111.5	20.00		mg/L Ca	1	6/13/2018 7:11:37 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
Total Dissolved Solids	372	20.0		mg/L	1	Analyst: sat 6/14/2018 9:54:00 AM
SM 4500 NORG C: TKN						
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	Analyst: smb 6/27/2018 10:25:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-3

Project: SCLF

Collection Date: 6/7/2018 2:03:00 PM

Lab ID: 1806511-002

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: JME
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/11/2018 8:02:07 PM
1,2-Dibromoethane	ND	0.0093		µg/L	1	6/11/2018 8:02:07 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	ND	0.50		mg/L	5	6/9/2018 1:48:45 AM
Chloride	78	2.5		mg/L	5	6/9/2018 1:48:45 AM
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	6/9/2018 1:48:45 AM
Nitrogen, Nitrate (As N)	1.1	0.50		mg/L	5	6/9/2018 1:48:45 AM
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	6/9/2018 1:48:45 AM
Sulfate	52	2.5		mg/L	5	6/9/2018 1:48:45 AM
EPA METHOD 200.7: METALS						Analyst: pmf
Aluminum	2.0	0.10	*	mg/L	5	6/25/2018 10:05:49 PM
Barium	0.056	0.0020		mg/L	1	6/21/2018 7:44:03 PM
Calcium	40	1.0		mg/L	1	6/21/2018 7:44:03 PM
Chromium	0.042	0.0060		mg/L	1	6/21/2018 7:44:03 PM
Cobalt	ND	0.0060		mg/L	1	6/21/2018 7:44:03 PM
Iron	5.4	0.20	*	mg/L	10	6/25/2018 10:07:48 PM
Magnesium	4.8	1.0		mg/L	1	6/21/2018 7:44:03 PM
Manganese	0.055	0.0020	*	mg/L	1	6/21/2018 7:44:03 PM
Potassium	4.5	1.0		mg/L	1	6/21/2018 7:44:03 PM
Sodium	72	1.0		mg/L	1	6/21/2018 7:44:03 PM
Zinc	ND	0.010		mg/L	1	6/21/2018 7:44:03 PM
EPA 200.8: METALS						Analyst: DBK
Arsenic	0.0075	0.0010		mg/L	1	6/27/2018 8:24:57 PM
Lead	0.0015	0.00050		mg/L	1	6/27/2018 8:24:57 PM
Uranium	0.0020	0.00050		mg/L	1	6/27/2018 8:24:57 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Benzene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Toluene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Ethylbenzene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Acetone	ND	10		µg/L	1	6/14/2018 4:02:00 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Bromoform	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Bromomethane	ND	2.0		µg/L	1	6/14/2018 4:02:00 AM
2-Butanone	ND	10		µg/L	1	6/14/2018 4:02:00 AM
Carbon disulfide	ND	10		µg/L	1	6/14/2018 4:02:00 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-3

Project: SCLF

Collection Date: 6/7/2018 2:03:00 PM

Lab ID: 1806511-002

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Chlorobenzene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Chloroethane	ND	2.0		µg/L	1	6/14/2018 4:02:00 AM
Chloroform	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Chloromethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Dibromomethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	6/14/2018 4:02:00 AM
2-Hexanone	ND	10		µg/L	1	6/14/2018 4:02:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/14/2018 4:02:00 AM
Methylene Chloride	ND	2.5		µg/L	1	6/14/2018 4:02:00 AM
Styrene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	6/14/2018 4:02:00 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/14/2018 4:02:00 AM
Vinyl chloride	ND	0.40		µg/L	1	6/14/2018 4:02:00 AM
Xylenes, Total	ND	2.0		µg/L	1	6/14/2018 4:02:00 AM
Acrylonitrile	ND	10		µg/L	1	6/14/2018 4:02:00 AM
Bromochloromethane	ND	2.0		µg/L	1	6/14/2018 4:02:00 AM
Iodomethane	ND	10		µg/L	1	6/14/2018 4:02:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/14/2018 4:02:00 AM
Vinyl acetate	ND	10		µg/L	1	6/14/2018 4:02:00 AM
Surr: 1,2-Dichloroethane-d4	99.2	70-130		%Rec	1	6/14/2018 4:02:00 AM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	6/14/2018 4:02:00 AM
Surr: Dibromofluoromethane	92.8	70-130		%Rec	1	6/14/2018 4:02:00 AM
Surr: Toluene-d8	95.9	70-130		%Rec	1	6/14/2018 4:02:00 AM

TOTAL PHENOLICS BY SW-846 9067

Analyst: **JME**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: 7/13/2018

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-3

Project: SCLF

Collection Date: 6/7/2018 2:03:00 PM

Lab ID: 1806511-002

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL PHENOLICS BY SW-846 9067						
Phenolics	ND	2.5		µg/L	1	Analyst: JME 6/20/2018
EPA METHOD 9060 TOC						
Total Organic Carbon	2.1	1.0		mg/L	1	Analyst: DAM 6/12/2018 5:41:52 PM
SM2510B: SPECIFIC CONDUCTANCE						
Conductivity	560	5.0		µmhos/c	1	Analyst: JRR 6/13/2018 7:20:30 PM
SM 4500 NH3: AMMONIA						
Nitrogen, Ammonia	ND	1.0		mg/L	1	Analyst: smb 6/23/2018 11:51:00 AM
TOTAL NITROGEN						
Nitrogen, Total	1.1	1.0		mg/L	1	Analyst: SRM 6/29/2018 12:59:00 PM
SM4500-H+B / 9040C: PH						
pH	7.84		H	pH units	1	Analyst: JRR 6/13/2018 7:20:30 PM
SM2320B: ALKALINITY						
Bicarbonate (As CaCO3)	107.1	20.00		mg/L Ca	1	Analyst: JRR 6/13/2018 7:20:30 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/13/2018 7:20:30 PM
Total Alkalinity (as CaCO3)	107.1	20.00		mg/L Ca	1	6/13/2018 7:20:30 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
Total Dissolved Solids	366	40.0	D	mg/L	1	Analyst: sat 6/14/2018 9:54:00 AM
SM 4500 NORG C: TKN						
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	Analyst: smb 6/27/2018 10:25:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-5R

Project: SCLF

Collection Date: 6/7/2018 9:47:00 AM

Lab ID: 1806511-003

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: JME
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/11/2018 8:17:35 PM
1,2-Dibromoethane	ND	0.0095		µg/L	1	6/11/2018 8:17:35 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	0.58	0.10		mg/L	1	6/9/2018 2:13:35 AM
Chloride	160	10		mg/L	20	6/9/2018 2:25:59 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	6/9/2018 2:13:35 AM
Nitrogen, Nitrate (As N)	0.71	0.10		mg/L	1	6/9/2018 2:13:35 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	6/9/2018 2:13:35 AM
Sulfate	31	0.50		mg/L	1	6/9/2018 2:13:35 AM
EPA METHOD 200.7: METALS						Analyst: pmf
Aluminum	ND	0.020		mg/L	1	6/25/2018 11:06:32 PM
Barium	0.087	0.0020		mg/L	1	6/25/2018 11:06:32 PM
Calcium	45	1.0		mg/L	1	6/25/2018 11:06:32 PM
Chromium	ND	0.0060		mg/L	1	6/25/2018 11:06:32 PM
Cobalt	ND	0.0060		mg/L	1	6/26/2018 8:23:27 PM
Iron	0.022	0.020		mg/L	1	6/25/2018 11:06:32 PM
Magnesium	4.9	1.0		mg/L	1	6/25/2018 11:06:32 PM
Manganese	ND	0.0020		mg/L	1	6/25/2018 11:06:32 PM
Potassium	5.2	1.0		mg/L	1	6/25/2018 11:06:32 PM
Sodium	110	5.0		mg/L	5	7/9/2018 5:27:17 PM
Zinc	ND	0.010		mg/L	1	6/26/2018 8:23:27 PM
EPA 200.8: METALS						Analyst: JLF
Arsenic	0.0069	0.0010		mg/L	1	6/19/2018 9:27:16 PM
Lead	ND	0.00050		mg/L	1	6/19/2018 9:27:16 PM
Uranium	0.0019	0.00050		mg/L	1	6/19/2018 9:27:16 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Benzene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Toluene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Ethylbenzene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Acetone	ND	10		µg/L	1	6/14/2018 4:26:00 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Bromoform	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Bromomethane	ND	2.0		µg/L	1	6/14/2018 4:26:00 AM
2-Butanone	ND	10		µg/L	1	6/14/2018 4:26:00 AM
Carbon disulfide	ND	10		µg/L	1	6/14/2018 4:26:00 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-5R

Project: SCLF

Collection Date: 6/7/2018 9:47:00 AM

Lab ID: 1806511-003

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Chlorobenzene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Chloroethane	ND	2.0		µg/L	1	6/14/2018 4:26:00 AM
Chloroform	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Chloromethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Dibromomethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	6/14/2018 4:26:00 AM
2-Hexanone	ND	10		µg/L	1	6/14/2018 4:26:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/14/2018 4:26:00 AM
Methylene Chloride	ND	2.5		µg/L	1	6/14/2018 4:26:00 AM
Styrene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	6/14/2018 4:26:00 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/14/2018 4:26:00 AM
Vinyl chloride	ND	0.40		µg/L	1	6/14/2018 4:26:00 AM
Xylenes, Total	ND	2.0		µg/L	1	6/14/2018 4:26:00 AM
Acrylonitrile	ND	10		µg/L	1	6/14/2018 4:26:00 AM
Bromochloromethane	ND	2.0		µg/L	1	6/14/2018 4:26:00 AM
Iodomethane	ND	10		µg/L	1	6/14/2018 4:26:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/14/2018 4:26:00 AM
Vinyl acetate	ND	10		µg/L	1	6/14/2018 4:26:00 AM
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	6/14/2018 4:26:00 AM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	6/14/2018 4:26:00 AM
Surr: Dibromofluoromethane	93.1	70-130		%Rec	1	6/14/2018 4:26:00 AM
Surr: Toluene-d8	96.4	70-130		%Rec	1	6/14/2018 4:26:00 AM

TOTAL PHENOLICS BY SW-846 9067

Analyst: **JME**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: 7/13/2018

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-5R

Project: SCLF

Collection Date: 6/7/2018 9:47:00 AM

Lab ID: 1806511-003

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL PHENOLICS BY SW-846 9067						
Phenolics	ND	2.5		µg/L	1	Analyst: JME 6/20/2018
EPA METHOD 9060 TOC						
Total Organic Carbon	1.6	1.0		mg/L	1	Analyst: DAM 6/12/2018 5:58:20 PM
SM2510B: SPECIFIC CONDUCTANCE						
Conductivity	790	5.0		µmhos/c	1	Analyst: JRR 6/13/2018 7:28:47 PM
SM 4500 NH3: AMMONIA						
Nitrogen, Ammonia	ND	1.0		mg/L	1	Analyst: smb 6/23/2018 11:51:00 AM
TOTAL NITROGEN						
Nitrogen, Total	ND	1.0		mg/L	1	Analyst: SRM 6/29/2018 12:59:00 PM
SM4500-H+B / 9040C: PH						
pH	7.88		H	pH units	1	Analyst: JRR 6/13/2018 7:28:47 PM
SM2320B: ALKALINITY						
Bicarbonate (As CaCO3)	101.8	20.00		mg/L Ca	1	Analyst: JRR 6/13/2018 7:28:47 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/13/2018 7:28:47 PM
Total Alkalinity (as CaCO3)	101.8	20.00		mg/L Ca	1	6/13/2018 7:28:47 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
Total Dissolved Solids	473	20.0		mg/L	1	Analyst: sat 6/14/2018 9:54:00 AM
SM 4500 NORG C: TKN						
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	Analyst: smb 6/27/2018 10:25:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-6R

Project: SCLF

Collection Date: 6/7/2018 3:13:00 PM

Lab ID: 1806511-004

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: JME
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/11/2018 8:33:04 PM
1,2-Dibromoethane	ND	0.0093		µg/L	1	6/11/2018 8:33:04 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	0.53	0.10		mg/L	1	6/9/2018 2:38:23 AM
Chloride	100	10		mg/L	20	6/9/2018 2:50:48 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	6/9/2018 2:38:23 AM
Nitrogen, Nitrate (As N)	1.1	0.10		mg/L	1	6/9/2018 2:38:23 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	6/9/2018 2:38:23 AM
Sulfate	42	10		mg/L	20	6/9/2018 2:50:48 AM
EPA METHOD 200.7: METALS						Analyst: pmf
Aluminum	ND	0.020		mg/L	1	6/25/2018 11:08:33 PM
Barium	0.050	0.0020		mg/L	1	6/25/2018 11:08:33 PM
Calcium	44	1.0		mg/L	1	6/25/2018 11:08:33 PM
Chromium	ND	0.0060		mg/L	1	6/25/2018 11:08:33 PM
Cobalt	ND	0.0060		mg/L	1	6/26/2018 8:27:45 PM
Iron	0.081	0.020		mg/L	1	6/25/2018 11:08:33 PM
Magnesium	4.9	1.0		mg/L	1	6/25/2018 11:08:33 PM
Manganese	0.0040	0.0020		mg/L	1	6/25/2018 11:08:33 PM
Potassium	4.8	1.0		mg/L	1	6/25/2018 11:08:33 PM
Sodium	80	1.0		mg/L	1	6/25/2018 11:08:33 PM
Zinc	ND	0.010		mg/L	1	6/26/2018 8:27:45 PM
EPA 200.8: METALS						Analyst: JLF
Arsenic	0.0062	0.0010		mg/L	1	6/19/2018 9:32:11 PM
Lead	ND	0.00050		mg/L	1	6/19/2018 9:32:11 PM
Uranium	0.0018	0.00050		mg/L	1	6/19/2018 9:32:11 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Benzene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Toluene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Ethylbenzene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Acetone	ND	10		µg/L	1	6/14/2018 4:50:00 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Bromoform	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Bromomethane	ND	2.0		µg/L	1	6/14/2018 4:50:00 AM
2-Butanone	ND	10		µg/L	1	6/14/2018 4:50:00 AM
Carbon disulfide	ND	10		µg/L	1	6/14/2018 4:50:00 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-6R

Project: SCLF

Collection Date: 6/7/2018 3:13:00 PM

Lab ID: 1806511-004

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Chlorobenzene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Chloroethane	ND	2.0		µg/L	1	6/14/2018 4:50:00 AM
Chloroform	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Chloromethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Dibromomethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	6/14/2018 4:50:00 AM
2-Hexanone	ND	10		µg/L	1	6/14/2018 4:50:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/14/2018 4:50:00 AM
Methylene Chloride	ND	2.5		µg/L	1	6/14/2018 4:50:00 AM
Styrene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	6/14/2018 4:50:00 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/14/2018 4:50:00 AM
Vinyl chloride	ND	0.40		µg/L	1	6/14/2018 4:50:00 AM
Xylenes, Total	ND	2.0		µg/L	1	6/14/2018 4:50:00 AM
Acrylonitrile	ND	10		µg/L	1	6/14/2018 4:50:00 AM
Bromochloromethane	ND	2.0		µg/L	1	6/14/2018 4:50:00 AM
Iodomethane	ND	10		µg/L	1	6/14/2018 4:50:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/14/2018 4:50:00 AM
Vinyl acetate	ND	10		µg/L	1	6/14/2018 4:50:00 AM
Surr: 1,2-Dichloroethane-d4	97.7	70-130		%Rec	1	6/14/2018 4:50:00 AM
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	6/14/2018 4:50:00 AM
Surr: Dibromofluoromethane	92.4	70-130		%Rec	1	6/14/2018 4:50:00 AM
Surr: Toluene-d8	95.8	70-130		%Rec	1	6/14/2018 4:50:00 AM

TOTAL PHENOLICS BY SW-846 9067

Analyst: **JME**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: 7/13/2018

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-6R

Project: SCLF

Collection Date: 6/7/2018 3:13:00 PM

Lab ID: 1806511-004

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL PHENOLICS BY SW-846 9067						
Phenolics	ND	2.5		µg/L	1	Analyst: JME 6/20/2018
EPA METHOD 9060 TOC						
Total Organic Carbon	ND	1.0		mg/L	1	Analyst: DAM 6/12/2018 6:14:49 PM
SM2510B: SPECIFIC CONDUCTANCE						
Conductivity	690	5.0		µmhos/c	1	Analyst: JRR 6/13/2018 7:41:24 PM
SM 4500 NH3: AMMONIA						
Nitrogen, Ammonia	ND	1.0		mg/L	1	Analyst: smb 6/23/2018 11:51:00 AM
TOTAL NITROGEN						
Nitrogen, Total	1.1	1.0		mg/L	1	Analyst: SRM 6/29/2018 12:59:00 PM
SM4500-H+B / 9040C: PH						
pH	8.00		H	pH units	1	Analyst: JRR 6/13/2018 7:41:24 PM
SM2320B: ALKALINITY						
Bicarbonate (As CaCO3)	102.4	20.00		mg/L Ca	1	Analyst: JRR 6/13/2018 7:41:24 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/13/2018 7:41:24 PM
Total Alkalinity (as CaCO3)	102.4	20.00		mg/L Ca	1	6/13/2018 7:41:24 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
Total Dissolved Solids	407	20.0		mg/L	1	Analyst: sat 6/14/2018 9:54:00 AM
SM 4500 NORG C: TKN						
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	Analyst: smb 6/27/2018 10:25:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-7R

Project: SCLF

Collection Date: 6/7/2018 4:23:00 PM

Lab ID: 1806511-005

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: JME
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/11/2018 8:48:34 PM
1,2-Dibromoethane	ND	0.0094		µg/L	1	6/11/2018 8:48:34 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	0.86	0.10		mg/L	1	6/9/2018 3:52:50 AM
Chloride	48	10		mg/L	20	6/9/2018 4:05:15 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	6/9/2018 3:52:50 AM
Nitrogen, Nitrate (As N)	6.2	0.10		mg/L	1	6/9/2018 3:52:50 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	6/9/2018 3:52:50 AM
Sulfate	43	10		mg/L	20	6/9/2018 4:05:15 AM
EPA METHOD 200.7: METALS						Analyst: pmf
Aluminum	0.085	0.020		mg/L	1	6/21/2018 7:45:55 PM
Barium	0.051	0.0020		mg/L	1	6/21/2018 7:45:55 PM
Calcium	35	1.0		mg/L	1	6/21/2018 7:45:55 PM
Chromium	ND	0.0060		mg/L	1	6/21/2018 7:45:55 PM
Cobalt	ND	0.0060		mg/L	1	6/21/2018 7:45:55 PM
Iron	0.090	0.020		mg/L	1	6/21/2018 7:45:55 PM
Magnesium	4.2	1.0		mg/L	1	6/21/2018 7:45:55 PM
Manganese	0.013	0.0020		mg/L	1	6/21/2018 7:45:55 PM
Potassium	4.1	1.0		mg/L	1	6/21/2018 7:45:55 PM
Sodium	68	1.0		mg/L	1	6/21/2018 7:45:55 PM
Zinc	ND	0.010		mg/L	1	6/21/2018 7:45:55 PM
EPA 200.8: METALS						Analyst: DBK
Arsenic	0.0048	0.0010		mg/L	1	6/27/2018 8:28:39 PM
Lead	ND	0.00050		mg/L	1	6/27/2018 8:28:39 PM
Uranium	0.0020	0.00050		mg/L	1	6/27/2018 8:28:39 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Benzene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Toluene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Ethylbenzene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Acetone	ND	10		µg/L	1	6/14/2018 5:14:00 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Bromoform	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Bromomethane	ND	2.0		µg/L	1	6/14/2018 5:14:00 AM
2-Butanone	ND	10		µg/L	1	6/14/2018 5:14:00 AM
Carbon disulfide	ND	10		µg/L	1	6/14/2018 5:14:00 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-7R

Project: SCLF

Collection Date: 6/7/2018 4:23:00 PM

Lab ID: 1806511-005

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Chlorobenzene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Chloroethane	ND	2.0		µg/L	1	6/14/2018 5:14:00 AM
Chloroform	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Chloromethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Dibromomethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	6/14/2018 5:14:00 AM
2-Hexanone	ND	10		µg/L	1	6/14/2018 5:14:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/14/2018 5:14:00 AM
Methylene Chloride	ND	2.5		µg/L	1	6/14/2018 5:14:00 AM
Styrene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	6/14/2018 5:14:00 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/14/2018 5:14:00 AM
Vinyl chloride	ND	0.40		µg/L	1	6/14/2018 5:14:00 AM
Xylenes, Total	ND	2.0		µg/L	1	6/14/2018 5:14:00 AM
Acrylonitrile	ND	10		µg/L	1	6/14/2018 5:14:00 AM
Bromochloromethane	ND	2.0		µg/L	1	6/14/2018 5:14:00 AM
Iodomethane	ND	10		µg/L	1	6/14/2018 5:14:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/14/2018 5:14:00 AM
Vinyl acetate	ND	10		µg/L	1	6/14/2018 5:14:00 AM
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%Rec	1	6/14/2018 5:14:00 AM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	6/14/2018 5:14:00 AM
Surr: Dibromofluoromethane	92.1	70-130		%Rec	1	6/14/2018 5:14:00 AM
Surr: Toluene-d8	96.3	70-130		%Rec	1	6/14/2018 5:14:00 AM

TOTAL PHENOLICS BY SW-846 9067

Analyst: **JME**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: 7/13/2018

CLIENT: Gordon Environmental/PSC

Client Sample ID: MW-7R

Project: SCLF

Collection Date: 6/7/2018 4:23:00 PM

Lab ID: 1806511-005

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL PHENOLICS BY SW-846 9067						
Phenolics	ND	2.5		µg/L	1	Analyst: JME 6/20/2018
EPA METHOD 9060 TOC						
Total Organic Carbon	ND	1.0		mg/L	1	Analyst: DAM 6/12/2018 6:31:19 PM
SM2510B: SPECIFIC CONDUCTANCE						
Conductivity	510	5.0		µmhos/c	1	Analyst: JRR 6/13/2018 7:49:29 PM
SM 4500 NH3: AMMONIA						
Nitrogen, Ammonia	ND	1.0		mg/L	1	Analyst: smb 6/23/2018 11:51:00 AM
TOTAL NITROGEN						
Nitrogen, Total	6.2	1.0		mg/L	1	Analyst: SRM 6/29/2018 12:59:00 PM
SM4500-H+B / 9040C: PH						
pH	8.05		H	pH units	1	Analyst: JRR 6/13/2018 7:49:29 PM
SM2320B: ALKALINITY						
Bicarbonate (As CaCO3)	107.8	20.00		mg/L Ca	1	Analyst: JRR 6/13/2018 7:49:29 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/13/2018 7:49:29 PM
Total Alkalinity (as CaCO3)	107.8	20.00		mg/L Ca	1	6/13/2018 7:49:29 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						
Total Dissolved Solids	332	20.0		mg/L	1	Analyst: sat 6/14/2018 9:54:00 AM
SM 4500 NORG C: TKN						
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	Analyst: smb 6/27/2018 10:25:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: DUPE

Project: SCLF

Collection Date: 6/7/2018 9:53:00 AM

Lab ID: 1806511-006

Matrix:

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Benzene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Toluene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Ethylbenzene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Acetone	ND	10		µg/L	1	6/14/2018 5:37:00 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Bromoform	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Bromomethane	ND	2.0		µg/L	1	6/14/2018 5:37:00 AM
2-Butanone	ND	10		µg/L	1	6/14/2018 5:37:00 AM
Carbon disulfide	ND	10		µg/L	1	6/14/2018 5:37:00 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Chlorobenzene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Chloroethane	ND	2.0		µg/L	1	6/14/2018 5:37:00 AM
Chloroform	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Chloromethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Dibromomethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	6/14/2018 5:37:00 AM
2-Hexanone	ND	10		µg/L	1	6/14/2018 5:37:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/14/2018 5:37:00 AM
Methylene Chloride	ND	2.5		µg/L	1	6/14/2018 5:37:00 AM
Styrene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	6/14/2018 5:37:00 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/14/2018 5:37:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: DUPE

Project: SCLF

Collection Date: 6/7/2018 9:53:00 AM

Lab ID: 1806511-006

Matrix:

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Vinyl chloride	ND	0.40		µg/L	1	6/14/2018 5:37:00 AM
Xylenes, Total	ND	2.0		µg/L	1	6/14/2018 5:37:00 AM
Acrylonitrile	ND	10		µg/L	1	6/14/2018 5:37:00 AM
Bromochloromethane	ND	2.0		µg/L	1	6/14/2018 5:37:00 AM
Iodomethane	ND	10		µg/L	1	6/14/2018 5:37:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/14/2018 5:37:00 AM
Vinyl acetate	ND	10		µg/L	1	6/14/2018 5:37:00 AM
Surr: 1,2-Dichloroethane-d4	97.0	70-130		%Rec	1	6/14/2018 5:37:00 AM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	6/14/2018 5:37:00 AM
Surr: Dibromofluoromethane	92.7	70-130		%Rec	1	6/14/2018 5:37:00 AM
Surr: Toluene-d8	95.0	70-130		%Rec	1	6/14/2018 5:37:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: FB

Project: SCLF

Collection Date: 6/7/2018 9:27:00 AM

Lab ID: 1806511-007

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Benzene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Toluene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Ethylbenzene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Acetone	ND	10		µg/L	1	6/14/2018 6:01:00 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Bromoform	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Bromomethane	ND	2.0		µg/L	1	6/14/2018 6:01:00 AM
2-Butanone	ND	10		µg/L	1	6/14/2018 6:01:00 AM
Carbon disulfide	ND	10		µg/L	1	6/14/2018 6:01:00 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Chlorobenzene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Chloroethane	ND	2.0		µg/L	1	6/14/2018 6:01:00 AM
Chloroform	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Chloromethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Dibromomethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	6/14/2018 6:01:00 AM
2-Hexanone	ND	10		µg/L	1	6/14/2018 6:01:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/14/2018 6:01:00 AM
Methylene Chloride	ND	2.5		µg/L	1	6/14/2018 6:01:00 AM
Styrene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	6/14/2018 6:01:00 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/14/2018 6:01:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: FB

Project: SCLF

Collection Date: 6/7/2018 9:27:00 AM

Lab ID: 1806511-007

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Vinyl chloride	ND	0.40		µg/L	1	6/14/2018 6:01:00 AM
Xylenes, Total	ND	2.0		µg/L	1	6/14/2018 6:01:00 AM
Acrylonitrile	ND	10		µg/L	1	6/14/2018 6:01:00 AM
Bromochloromethane	ND	2.0		µg/L	1	6/14/2018 6:01:00 AM
Iodomethane	ND	10		µg/L	1	6/14/2018 6:01:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/14/2018 6:01:00 AM
Vinyl acetate	ND	10		µg/L	1	6/14/2018 6:01:00 AM
Surr: 1,2-Dichloroethane-d4	99.1	70-130		%Rec	1	6/14/2018 6:01:00 AM
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	6/14/2018 6:01:00 AM
Surr: Dibromofluoromethane	93.6	70-130		%Rec	1	6/14/2018 6:01:00 AM
Surr: Toluene-d8	96.2	70-130		%Rec	1	6/14/2018 6:01:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: Trip Blank

Project: SCLF

Collection Date:

Lab ID: 1806511-008

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: JME
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/11/2018 9:04:05 PM
1,2-Dibromoethane	ND	0.0094		µg/L	1	6/11/2018 9:04:05 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Benzene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Toluene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Ethylbenzene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Acetone	ND	10		µg/L	1	6/14/2018 6:25:00 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Bromoform	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Bromomethane	ND	2.0		µg/L	1	6/14/2018 6:25:00 AM
2-Butanone	ND	10		µg/L	1	6/14/2018 6:25:00 AM
Carbon disulfide	ND	10		µg/L	1	6/14/2018 6:25:00 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Chlorobenzene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Chloroethane	ND	2.0		µg/L	1	6/14/2018 6:25:00 AM
Chloroform	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Chloromethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Dibromomethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	6/14/2018 6:25:00 AM
2-Hexanone	ND	10		µg/L	1	6/14/2018 6:25:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/14/2018 6:25:00 AM
Methylene Chloride	ND	2.5		µg/L	1	6/14/2018 6:25:00 AM
Styrene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	6/14/2018 6:25:00 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1806511**

Date Reported: **7/13/2018**

CLIENT: Gordon Environmental/PSC

Client Sample ID: Trip Blank

Project: SCLF

Collection Date:

Lab ID: 1806511-008

Matrix: AQUEOUS

Received Date: 6/8/2018 8:32:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/14/2018 6:25:00 AM
Vinyl chloride	ND	0.40		µg/L	1	6/14/2018 6:25:00 AM
Xylenes, Total	ND	2.0		µg/L	1	6/14/2018 6:25:00 AM
Acrylonitrile	ND	10		µg/L	1	6/14/2018 6:25:00 AM
Bromochloromethane	ND	2.0		µg/L	1	6/14/2018 6:25:00 AM
Iodomethane	ND	10		µg/L	1	6/14/2018 6:25:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/14/2018 6:25:00 AM
Vinyl acetate	ND	10		µg/L	1	6/14/2018 6:25:00 AM
Surr: 1,2-Dichloroethane-d4	99.9	70-130		%Rec	1	6/14/2018 6:25:00 AM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	6/14/2018 6:25:00 AM
Surr: Dibromofluoromethane	92.5	70-130		%Rec	1	6/14/2018 6:25:00 AM
Surr: Toluene-d8	95.6	70-130		%Rec	1	6/14/2018 6:25:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	MB-38774	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals
Client ID:	PBW	Batch ID:	38774	RunNo:	52143
Prep Date:	6/19/2018	Analysis Date:	6/21/2018	SeqNo:	1708010
				Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LLCS-38774	SampType:	LCSLL	TestCode:	EPA Method 200.7: Metals
Client ID:	BatchQC	Batch ID:	38774	RunNo:	52143
Prep Date:	6/19/2018	Analysis Date:	6/21/2018	SeqNo:	1708014
				Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	116	50	150			
Barium	ND	0.0020	0.002000	0	84.5	50	150			
Calcium	ND	1.0	0.5000	0	100	50	150			
Chromium	0.0060	0.0060	0.006000	0	100	50	150			
Cobalt	ND	0.0060	0.006000	0	80.0	50	150			
Iron	0.026	0.020	0.02000	0	130	50	150			
Magnesium	ND	1.0	0.5000	0	101	50	150			
Manganese	0.0026	0.0020	0.002000	0	131	50	150			
Potassium	ND	1.0	0.5000	0	102	50	150			
Sodium	ND	1.0	0.5000	0	113	50	150			
Zinc	ND	0.010	0.005000	0	115	50	150			

Sample ID	LCS-38774	SampType:	LCS	TestCode:	EPA Method 200.7: Metals
Client ID:	LCSW	Batch ID:	38774	RunNo:	52143
Prep Date:	6/19/2018	Analysis Date:	6/21/2018	SeqNo:	1708015
				Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	110	85	115			
Barium	0.49	0.0020	0.5000	0	98.0	85	115			
Calcium	49	1.0	50.00	0	99.0	85	115			
Chromium	0.49	0.0060	0.5000	0	98.8	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.7	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	LCS-38774		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 38774		RunNo: 52143					
Prep Date:	6/19/2018		Analysis Date: 6/21/2018		SeqNo: 1708015		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	50	1.0	50.00	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.8	85	115			
Potassium	49	1.0	50.00	0	99.0	85	115			
Sodium	52	1.0	50.00	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	99.6	85	115			

Sample ID	MB-A	SampType: MBLK			TestCode: EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID: A52226			RunNo: 52226					
Prep Date:		Analysis Date: 6/25/2018			SeqNo: 1711064		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LLLCS-A		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: A52226		RunNo: 52226					
Prep Date:			Analysis Date: 6/25/2018		SeqNo: 1711065		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	113	50	150			
Barium	ND	0.0020	0.002000	0	90.0	50	150			
Calcium	ND	1.0	0.5000	0	100	50	150			
Chromium	0.0061	0.0060	0.006000	0	102	50	150			
Iron	ND	0.020	0.02000	0	94.7	50	150			
Magnesium	ND	1.0	0.5000	0	97.4	50	150			
Manganese	ND	0.0020	0.002000	0	77.0	50	150			
Potassium	ND	1.0	0.5000	0	107	50	150			
Sodium	ND	1.0	0.5000	0	116	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: A52226		RunNo: 52226					
Prep Date:			Analysis Date: 6/25/2018		SeqNo: 1711066		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	104	85	115			
Barium	0.51	0.0020	0.5000	0	102	85	115			
Calcium	51	1.0	50.00	0	103	85	115			
Chromium	0.48	0.0060	0.5000	0	95.4	85	115			
Iron	0.50	0.020	0.5000	0	99.6	85	115			
Magnesium	52	1.0	50.00	0	103	85	115			
Manganese	0.48	0.0020	0.5000	0	96.2	85	115			
Potassium	51	1.0	50.00	0	102	85	115			
Sodium	51	1.0	50.00	0	103	85	115			

Sample ID	LCSD-A		SampType: LCSD		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSS02		Batch ID: A52226		RunNo: 52226					
Prep Date:			Analysis Date: 6/25/2018		SeqNo: 1711067		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	105	85	115	0.0954	20	
Barium	0.52	0.0020	0.5000	0	105	85	115	1.19	20	
Calcium	50	1.0	50.00	0	100	85	115	3.33	20	
Chromium	0.49	0.0060	0.5000	0	97.7	85	115	1.06	20	
Iron	0.49	0.020	0.5000	0	98.6	85	115	0.314	20	
Magnesium	51	1.0	50.00	0	102	85	115	3.33	20	
Manganese	0.48	0.0020	0.5000	0	97.0	85	115	0.111	20	
Potassium	50	1.0	50.00	0	100	85	115	2.97	20	
Sodium	51	1.0	50.00	0	102	85	115	2.32	20	

Sample ID	MB-A		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: A52268		RunNo: 52268					
Prep Date:			Analysis Date: 6/26/2018		SeqNo: 1712683		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								
Zinc	ND	0.010								

Sample ID	LLCS-A		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: A52268		RunNo: 52268					
Prep Date:			Analysis Date: 6/26/2018		SeqNo: 1712684		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.0068	0.0060	0.006000	0	114	50	150			
Zinc	ND	0.010	0.005000	0	109	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: A52268		RunNo: 52268					
Prep Date:			Analysis Date: 6/26/2018		SeqNo: 1712685		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.48	0.0060	0.5000	0	96.7	85	115			
Zinc	0.49	0.010	0.5000	0	98.0	85	115			

Sample ID	MB-C		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: C52534		RunNo: 52534					
Prep Date:			Analysis Date: 7/9/2018		SeqNo: 1724596		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0								

Sample ID	LLLCS-C		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: C52534		RunNo: 52534					
Prep Date:			Analysis Date: 7/9/2018		SeqNo: 1724597		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0	0.5000	0	110	50	150			

Sample ID	LCS-C		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: C52534		RunNo: 52534					
Prep Date:			Analysis Date: 7/9/2018		SeqNo: 1724600		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	48	1.0	50.00	0	97.0	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	MB	SampType: MBLK		TestCode: EPA 200.8: Metals						
Client ID:	PBW	Batch ID: B52093		RunNo: 52093						
Prep Date:		Analysis Date: 6/19/2018		SeqNo: 1705034		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Uranium	ND	0.00050								

Sample ID	LL LCS	SampType: LCSLL			TestCode: EPA 200.8: Metals					
Client ID:	BatchQC	Batch ID: B52093			RunNo: 52093					
Prep Date:		Analysis Date: 6/19/2018			SeqNo: 1705035			Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	114	50	150			
Lead	0.00071	0.00050	0.0005000	0	143	50	150			
Uranium	ND	0.00050	0.0005000	0	94.2	50	150			

Sample ID	LCS	SampType: LCS			TestCode: EPA 200.8: Metals					
Client ID:	LCSW	Batch ID: B52093			RunNo: 52093					
Prep Date:		Analysis Date: 6/19/2018			SeqNo: 1705036			Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	91.0	85	115			
Lead	0.012	0.00050	0.01250	0	94.6	85	115			
Uranium	0.011	0.00050	0.01250	0	91.9	85	115			

Sample ID	MSLL LCS-38774		SampType: LCSLL		TestCode: EPA 200.8: Metals					
Client ID:	BatchQC		Batch ID: 38774		RunNo: 52162					
Prep Date:	6/19/2018		Analysis Date: 6/22/2018		SeqNo: 1708816		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	65.5	50	150			
Lead	ND	0.00050	0.0005000	0	90.5	50	150			
Uranium	ND	0.00050	0.0005000	0	95.4	50	150			

Sample ID	MSLCS-38774		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: 38774		RunNo: 52162					
Prep Date:	6/19/2018		Analysis Date: 6/22/2018		SeqNo: 1708817		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.012	0.00050	0.01250	0	96.9	85	115			
Uranium	0.012	0.00050	0.01250	0	97.5	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	MB-38774		SampType:	MBLK		TestCode:	EPA 200.8: Metals			
Client ID:	PBW		Batch ID:	38774		RunNo:	52162			
Prep Date:	6/19/2018		Analysis Date:	6/22/2018		SeqNo:	1708822	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Uranium	ND	0.00050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R51837		RunNo: 51837							
Prep Date:	Analysis Date: 6/8/2018		SeqNo: 1693200		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R51837		RunNo: 51837							
Prep Date:	Analysis Date: 6/8/2018		SeqNo: 1693201		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.5	90	110			
Chloride	4.6	0.50	5.000	0	92.2	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.4	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	96.3	90	110			
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0	94.9	90	110			
Sulfate	9.2	0.50	10.00	0	91.5	90	110			

Sample ID 1806511-004EMS	SampType: ms		TestCode: EPA Method 300.0: Anions							
Client ID: MW-6R	Batch ID: R51837		RunNo: 51837							
Prep Date:	Analysis Date: 6/9/2018		SeqNo: 1693234		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.0	0.10	0.5000	0.5272	95.8	55.8	133			
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	97.0	77.9	108			
Nitrogen, Nitrate (As N)	3.7	0.10	2.500	1.109	102	85	113			
Phosphorus, Orthophosphate (As P)	5.1	0.50	5.000	0	102	62.5	120			

Sample ID 1806511-004EMSD	SampType: msd		TestCode: EPA Method 300.0: Anions							
Client ID: MW-6R	Batch ID: R51837		RunNo: 51837							
Prep Date:	Analysis Date: 6/9/2018		SeqNo: 1693235		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.0	0.10	0.5000	0.5272	96.1	55.8	133	0.138	20	
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	97.0	77.9	108	0.0178	20	
Nitrogen, Nitrate (As N)	3.6	0.10	2.500	1.109	101	85	113	0.220	20	
Phosphorus, Orthophosphate (As P)	5.1	0.50	5.000	0	103	62.5	120	0.477	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	MB-38587		SampType:	MBLK		TestCode:	EPA Method 504.1: EDB/DBCP				
Client ID:	PBW		Batch ID:	38587		RunNo:	51884				
Prep Date:	6/11/2018		Analysis Date:	6/11/2018		SeqNo:	1694833		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromo-3-chloropropane	ND	0.020									
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-38587			SampType:	LCS		TestCode:	EPA Method 504.1: EDB/DBCP			
Client ID:	LCSW			Batch ID:	38587		RunNo:	51884			
Prep Date:	6/11/2018			Analysis Date:	6/11/2018		SeqNo:	1694834		Units:	µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromo-3-chloropropane	0.088	0.020	0.1000	0	88.1	70	130				
1,2-Dibromoethane	0.089	0.010	0.1000	0	89.1	70	130				

Sample ID	1806511-001BMS			SampType:	MS		TestCode:	EPA Method 504.1: EDB/DBCP			
Client ID:	MW-2			Batch ID:	38587		RunNo:	51884			
Prep Date:	6/11/2018			Analysis Date:	6/11/2018		SeqNo:	1694862		Units:	µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromo-3-chloropropane	0.098	0.019	0.09383	0	104	30.3	143				
1,2-Dibromoethane	0.10	0.0094	0.09383	0	110	25.9	131				

Sample ID	1806511-001BMSD		SampType:	MSD		TestCode:	EPA Method 504.1: EDB/DBCP				
Client ID:	MW-2		Batch ID:	38587		RunNo:	51884				
Prep Date:	6/11/2018		Analysis Date:	6/11/2018		SeqNo:	1694863		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromo-3-chloropropane	0.094	0.019	0.09459	0	99.2	30.3	143	4.13	25.6		
1,2-Dibromoethane	0.098	0.0095	0.09459	0	104	25.9	131	5.52	23.2		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	100ng lcs2		SampType: LCS		TestCode: EPA Method 8260B: Volatiles, Table I					
Client ID:	LCSW		Batch ID: LF51950		RunNo: 51950					
Prep Date:			Analysis Date: 6/14/2018		SeqNo: 1699541		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.7	70	130			
Toluene	19	1.0	20.00	0	95.6	70	130			
Chlorobenzene	19	1.0	20.00	0	94.1	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.4	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.5	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.9	70	130			
Surr: Toluene-d8	9.7		10.00		97.1	70	130			

Sample ID	rb2	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles, Table I					
Client ID:	PBW	Batch ID: LF51950			RunNo: 51950					
Prep Date:		Analysis Date: 6/14/2018			SeqNo: 1699542		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	2.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	rb2	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles, Table I					
Client ID:	PBW	Batch ID:	LF51950	RunNo:	51950					
Prep Date:		Analysis Date:	6/14/2018	SeqNo:	1699542	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Hexanone	ND	10								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	2.5								
Styrene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
Tetrachloroethene (PCE)	ND	0.50								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
Vinyl chloride	ND	0.40								
Xylenes, Total	ND	2.0								
Acrylonitrile	ND	10								
Bromochloromethane	ND	2.0								
Iodomethane	ND	10								
trans-1,4-Dichloro-2-butene	ND	10								
Vinyl acetate	ND	10								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	9.2		10.00		91.7	70	130			
Surr: Toluene-d8	9.7		10.00		96.9	70	130			

Sample ID	1806511-001ams	SampType:	MS	TestCode:	EPA Method 8260B: Volatiles, Table I					
Client ID:	MW-2	Batch ID:	LF51950	RunNo:	51950					
Prep Date:		Analysis Date:	6/14/2018	SeqNo:	1699544	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0.07400	100	60.5	137			
Toluene	20	1.0	20.00	0.1400	98.1	70	130			
Chlorobenzene	19	1.0	20.00	0	96.0	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	97.5	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	9.2		10.00		91.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	1806511-001ams	SampType:	MS	TestCode:	EPA Method 8260B: Volatiles, Table I					
Client ID:	MW-2	Batch ID:	LF51950	RunNo:	51950					
Prep Date:		Analysis Date:	6/14/2018	SeqNo:	1699544	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Toluene-d8	9.5		10.00		95.0	70	130			

Sample ID	1806511-001amsd	SampType:	MSD	TestCode:	EPA Method 8260B: Volatiles, Table I					
Client ID:	MW-2	Batch ID:	LF51950	RunNo:	51950					
Prep Date:		Analysis Date:	6/14/2018	SeqNo:	1699545	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0.07400	96.8	60.5	137	3.62	20	
Toluene	19	1.0	20.00	0.1400	95.4	70	130	2.75	20	
Chlorobenzene	19	1.0	20.00	0	93.3	70	130	2.91	20	
1,1-Dichloroethene	20	1.0	20.00	0	99.3	70	130	1.80	20	
Trichloroethene (TCE)	18	1.0	20.00	0	91.7	70	130	0.393	20	
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130	0	0	
Surr: Dibromofluoromethane	9.0		10.00		90.0	70	130	0	0	
Surr: Toluene-d8	9.5		10.00		95.4	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 9060 TOC					
Client ID:	PBW	Batch ID:	R51970	RunNo:	51970					
Prep Date:		Analysis Date:	6/12/2018	SeqNo:	1699364	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	1.0								

Sample ID	LCS ST9060-17010	SampType:	LCS	TestCode:	EPA Method 9060 TOC					
Client ID:	LCSW	Batch ID:	R51970	RunNo:	51970					
Prep Date:		Analysis Date:	6/12/2018	SeqNo:	1699365	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Organic Carbon	4.9	1.0	4.850	0	101	90	110			

Sample ID	1806511-001DMS	SampType:	MS	TestCode:	EPA Method 9060 TOC					
Client ID:	MW-2	Batch ID:	R51970	RunNo:	51970					
Prep Date:		Analysis Date:	6/12/2018	SeqNo:	1699367	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Organic Carbon	8.4	1.0	4.650	3.882	98.2	75	125			

Sample ID	1806511-001DMSD	SampType:	MSD	TestCode:	EPA Method 9060 TOC					
Client ID:	MW-2	Batch ID:	R51970	RunNo:	51970					
Prep Date:		Analysis Date:	6/12/2018	SeqNo:	1699368	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Organic Carbon	8.3	1.0	4.650	3.882	95.1	75	125	1.74	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	MB-38793		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 38793		RunNo: 52111					
Prep Date:	6/20/2018		Analysis Date: 6/20/2018		SeqNo: 1705655		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	ND	2.5								

Sample ID	LCS-38793		SampType: LCS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	LCSW		Batch ID: 38793		RunNo: 52111					
Prep Date:	6/20/2018		Analysis Date: 6/20/2018		SeqNo: 1705656		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	12	2.5	20.00	0	62.1	53.3	138			

Sample ID	1806511-001CMS		SampType: MS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	MW-2		Batch ID: 38793		RunNo: 52111					
Prep Date:	6/20/2018		Analysis Date: 6/20/2018		SeqNo: 1705702		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	24	2.5	20.00	0	122	70.1	127			

Sample ID	1806511-001CMSD			SampType: MSD	TestCode: Total Phenolics by SW-846 9067					
Client ID:	MW-2		Batch ID: 38793		RunNo: 52111					
Prep Date:	6/20/2018		Analysis Date: 6/20/2018		SeqNo: 1705703		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	17	2.5	20.00	0	87.0	70.1	127	33.7	23.8	R

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	lcs-1 ~20uS eC		SampType: LCS			TestCode: SM2510B: Specific Conductance				
Client ID:	LCSW		Batch ID: R51960			RunNo: 51960				
Prep Date:			Analysis Date: 6/13/2018			SeqNo: 1698365		Units: µmhos/cm		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	23	5.0	19.98	0	115	80	120			

Sample ID	1806511-003e dup		SampType: DUP			TestCode: SM2510B: Specific Conductance				
Client ID:	MW-5R		Batch ID: R51960			RunNo: 51960				
Prep Date:			Analysis Date: 6/13/2018			SeqNo: 1698379		Units: µmhos/cm		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	780	5.0						1.03	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	MB	SampType: MBLK			TestCode: SM 4500 NH3: Ammonia					
Client ID:	PBW	Batch ID: R52198			RunNo: 52198					
Prep Date:		Analysis Date: 6/23/2018			SeqNo: 1710105		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID	LCS		SampType: LCS		TestCode: SM 4500 NH3: Ammonia					
Client ID:	LCSW		Batch ID: R52198		RunNo: 52198					
Prep Date:			Analysis Date: 6/23/2018		SeqNo: 1710106		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	101	80	120			

Sample ID	1806511-001EMS		SampType: MS		TestCode: SM 4500 NH3: Ammonia					
Client ID:	MW-2		Batch ID: R52198		RunNo: 52198					
Prep Date:			Analysis Date: 6/23/2018		SeqNo: 1710108		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	104	75	125			

Sample ID	1806511-001EMSD			SampType:	MSD		TestCode:	SM 4500 NH3: Ammonia			
Client ID:	MW-2			Batch ID:	R52198		RunNo:	52198			
Prep Date:				Analysis Date:	6/23/2018		SeqNo:	1710109		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrogen, Ammonia	10	1.0	10.00	0	104	75	125	0	20		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID		1806511-003e dup		SampType: DUP		TestCode: SM4500-H+B / 9040C: pH				
Client ID:		MW-5R		Batch ID: R51960		RunNo: 51960				
Prep Date:				Analysis Date: 6/13/2018		SeqNo: 1698392		Units: pH units		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.88									H

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	mb-1 alk		SampType:	MBLK		TestCode:	SM2320B: Alkalinity				
Client ID:	PBW		Batch ID:	R51960		RunNo:	51960				
Prep Date:			Analysis Date:	6/13/2018		SeqNo:	1698340		Units:	mg/L CaCO3	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	ND	20.00									

Sample ID	lcs-1 alk		SampType: LCS			TestCode: SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID: R51960			RunNo: 51960				
Prep Date:	Analysis Date: 6/13/2018			SeqNo: 1698341		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.60	20.00	80.00	0	99.5	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	MB-38626	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids
Client ID:	PBW	Batch ID:	38626	RunNo:	51963
Prep Date:	6/12/2018	Analysis Date:	6/14/2018	SeqNo:	1698716 Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	ND	20.0			

Sample ID	LCS-38626	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids
Client ID:	LCSW	Batch ID:	38626	RunNo:	51963
Prep Date:	6/12/2018	Analysis Date:	6/14/2018	SeqNo:	1698717 Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	1010	20.0	1000	0	101 80 120

Sample ID	1806511-005EMS	SampType:	MS	TestCode:	SM2540C MOD: Total Dissolved Solids
Client ID:	MW-7R	Batch ID:	38626	RunNo:	51963
Prep Date:	6/12/2018	Analysis Date:	6/14/2018	SeqNo:	1698738 Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	1330	20.0	1000	332.0	100 80 120

Sample ID	1806511-005EMSD	SampType:	MSD	TestCode:	SM2540C MOD: Total Dissolved Solids
Client ID:	MW-7R	Batch ID:	38626	RunNo:	51963
Prep Date:	6/12/2018	Analysis Date:	6/14/2018	SeqNo:	1698739 Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	1330	20.0	1000	332.0	100 80 120 0.0750 5

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806511

13-Jul-18

Client: Gordon Environmental/PSC

Project: SCLF

Sample ID	MB-38866	SampType:	MBLK	TestCode:	SM 4500 Norg C: TKN					
Client ID:	PBW	Batch ID:	38866	RunNo:	52280					
Prep Date:	6/25/2018	Analysis Date:	6/27/2018	SeqNo:	1713184	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID	LCS-38866	SampType:	LCS	TestCode:	SM 4500 Norg C: TKN					
Client ID:	LCSW	Batch ID:	38866	RunNo:	52280					
Prep Date:	6/25/2018	Analysis Date:	6/27/2018	SeqNo:	1713185	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	10	1.0	10.00	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: GEI

Work Order Number: 1806511

RcptNo: 1

Received By: Anne Thorne

6/8/2018 8:32:00 AM



Completed By: Anne Thorne

6/8/2018 12:38:37 PM



Reviewed By: ENM

6/8/18

Labeled by: mw 6/18

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐

4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐

5. Sample(s) in proper container(s)? Yes ☒ No ☐

6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐

7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐

8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐

9. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐

10. Were any sample containers received broken? Yes ☐ No ☒

11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐

13. Is it clear what analyses were requested? Yes ☒ No ☐

14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

of preserved bottles checked for pH: 16

(<2 or >12 unless noted)

Adjusted? no

Checked by: mw

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Not Present			
2	1.2	Good	Not Present			

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 7
NMED Correspondence

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 7.1

Notification of Potential Exceedances
(07/17/18)



333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

July 17, 2018

Mr. George Schuman
Permit Section Manager
NMED Solid Waste Bureau
Harold Runnels Bldg – Room N2150
P.O. Box 5469 - 1190 St. Francis Drive
Santa Fe, NM 87502-5469

Re: Sandoval County Landfill – Groundwater Monitoring Results:
Notification of Potential Exceedances [01004117/0002]

Dear Mr. Schuman:

On behalf of our client, Sandoval County, Gordon Environmental/PSC is providing NMED Solid Waste Bureau (SWB) this correspondence summarizing the preliminary laboratory analytical results for groundwater samples collected at the Sandoval County Landfill (SCLF) on 06/07/18 from wells MW-2, MW-3, MW-5R, MW-6R, and MW-7R.

TABLE 1
Parameters Exhibiting Established AML Exceedances

Well I.D.	Parameter	Analytical Result (mg/L)	Established AML (mg/L)	Regulatory Presumptive AML (mg/L)	Established UTLV (mg/L)
MW-3	Chromium	0.042	0.027	0.025	0.078
	Total Iron	5.4	0.91	0.75	6.135
	Arsenic	0.0075	0.0069	0.005	0.01
MW-7R	Fluoride	0.86	0.86	0.8	0.9776
	Nitrate	6.2	5.0	5.0	N/A

Notes:

N/A: UTLV not established for this parameter

Bold Italics indicates that Established UTLV has been met or exceeded

Established AMLs and UTLVs for well MW-7R are for well MW-7

The preliminary results (received by Gordon Environmental/PSC on July 13, 2018) summarized in **Table 1** indicate a potential exceedance of well/parameter-specific established assessment monitoring levels (AMLs) for total chromium, total iron, and total arsenic in MW-3; total fluoride and nitrate in well MW-7R. It has been previously demonstrated that the presence of several total metals at this site is likely attributable to natural formation sediment suspended in the sample.

Consistent with the reporting requirements, Gordon Environmental/PSC will submit detailed results of the monitoring and analytical data for the 2018 sampling event to SWB on or before 09/04/18. In accordance with the requirements of 20.9.9.11.C(1) NMAC, a copy of this correspondence is also being provided to SCLF to be placed in the site's Facility Operating Record.

We appreciate the Bureau's review of the enclosed information. Please contact us with your questions or comments.

Very truly yours,
Gordon Environmental/PSC



Braden S. Belliveau, EIT
Project Engineer



Michael J. Crepeau, P.E.
Senior Project Manager

cc: Mr. Mark Hatzenbuhler, Director of Public Works, Sandoval County
Mr. Bert Sanchez, Solid Waste Manager, Sandoval County (Facility Operating Record)

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 7.2

NMED Approval of Groundwater Monitoring Wells MW-6 and MW-7 Replacement Workplan
(11/29/17)



**NEW MEXICO
ENVIRONMENT DEPARTMENT**



Solid Waste Bureau

SUSANA MARTINEZ
Governor

1190 Saint Francis Drive, Room N-2150

P.O. Box 5469

JOHN A. SANCHEZ
Lt. Governor

Santa Fe, New Mexico 87502-5469

Telephone: (505) 827-0197 Facsimile: (505) 827-2902

www.env.nm.gov/swb/

BUTCH TONGATE
Cabinet Secretary

J. C. BORREGO
Deputy Secretary

November 29, 2017

Mr. Mike Crepeau, P.E., Project Manager
Gordon Environmental/PSC
213 S. Camino del Pueblo
Bernalillo, New Mexico 87004

Re: Sandoval County Landfill, Work Plan for Replacement of Ground Water Monitoring Wells MW-6R and MW-7R

Dear Mr. Crepeau:

The Solid Waste Bureau (Bureau) has reviewed the Monitoring Well MW-5 Decommissioning and Replacement Work Plan (Plan) at the Sandoval County Landfill (Landfill) submitted by Gordon Environmental on November 15, 2017. The Plan proposes to discontinue ground water sampling at downgradient wells MW-6 and MW-7 due to consistent decline in ground water levels in the well and to drill a replacement monitoring wells MW-6R and MW-7R.

The Plan documented the steady decline of ground water elevations beneath the Landfill. In order to facilitate ground water sampling throughout the post-closure care period, the Plan seeks extend the screened groundwater interval from prescriptive 20 feet to 40 feet via the replacement well MW-6R and MW-7R.

The Bureau gives specific approval for the installation of 40 feet of screened interval and location of monitoring wells MW-6R and MW-7R. Additionally, the Bureau gives specific approval to discontinue collecting annual ground water samples from MW-6 and MW-7 upon construction of MW-6R and MW-7R; and that MW-6 and MW-7 be converted to use as a piezometer and be incorporated into the potentiometric surface map.

Once the decommissioning of MW-6 and MW-7 and drilling of MW-6R and MW-7R have been completed please amend the Landfill's Ground Water Monitoring System Plan with the above changes.

Should you have any questions, please feel free to contact James Dyer at (505) 383-2078, or by e-mail at james.dyer@state.nm.us.

Sincerely,



Auralie Ashley-Marx
Chief

for AAM

AAM/jrd

cc: Mr. Bert Sanchez, Sandoval County Landfill, 2708 Iris Road NE, Rio Rancho, NM
87144
George Schuman, Permit Section Manager, SWB
Paul Martinez, Enforcement Area I, SWB
Sandoval County Landfill Facility File
J. Dyer Reading File

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 7.3

NMED Approval of Groundwater Monitoring Wells MW-6R and MW-7R Installation Report
(07/04/18)



**NEW MEXICO
ENVIRONMENT DEPARTMENT**



Solid Waste Bureau

1190 Saint Francis Drive, Room N-2150

P.O. Box 5469

Santa Fe, New Mexico 87502-5469

Telephone: (505) 827-0197 Facsimile: (505) 827-2902

www.env.nm.gov/swb/

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lt. Governor

BUTCH TONGATE
Cabinet Secretary

J. C. BORREGO
Deputy Secretary

July 4, 2018

Received

JUL 09 2018

Mr. Mike Crepeau, P.E., Project Manager
Gordon Environmental/PSC
333 Rio Rancho Blvd NE, Suite 400
Rio Rancho, NM 87124

Gordon Environmental / PSC

Re: Sandoval County Landfill, Ground Water Monitoring Wells MW-6R and MW-7R
Installation Report

Dear Mr. Crepeau:

The Solid Waste Bureau (Bureau) has reviewed the Ground Water Monitoring Wells MW-6R and MW-7R Installation Report (Report) for the Sandoval County Landfill (Landfill), received on June 25, 2018. The Report summarizes field activities related to the installation of replacement monitoring wells MW-6R and MW-7R.

In a letter dated November 29, 2017, the Bureau gave specific approval for the installation of monitoring wells MW-6R and MW-7R, including a 40-foot screened interval and location. The installation of monitoring wells MW-6R and MW-7R and the associated Report comply with 20.9.9.9.E, F, and J NMAC.

Should you have any questions, please feel free to contact me at (505) 383-2078, or by e-mail at james.dyer@state.nm.us.

Sincerely,

James R. Dyer
Hydrologist

cc: Mr. Bert Sanchez, Sandoval County Landfill, 2708 Iris Road NE, Rio Rancho, NM 87144
Auralie Ashley-Marx, Chief, Solid Waste Bureau
George Schuman, Permit Section Manager, SWB
Paul Martinez, Enforcement Area I, SWB
Sandoval County Landfill Facility File

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2018 SAMPLING EVENT**

ATTACHMENT 8

Qualified Groundwater Scientist Certification

QUALIFIED GROUNDWATER SCIENTIST CERTIFICATION

This is to certify that, to the best of my knowledge and belief, the attached Groundwater Monitoring Report for the June 7, 2018 sampling event at the Sandoval County Landfill is accurate and complete. Based on the information provided in the attached Report, the following exceedances of the established assessment monitoring levels (AMLs) are noted:

1. **Total Chromium in Well MW-3.** The concentration of total chromium in well MW-3 exceeds the established AML. Comparison of historical total and dissolved chromium concentrations in well MW-3 indicate that chromium exists primarily in particulate form, likely as a suspended sediment. The total chromium detection is, therefore, attributable to a source other than the landfill.
2. **Total Iron in Well MW-3.** The concentration of total iron in well MW-3 exceeds the established AML. Comparison of historical total and dissolved iron concentrations in well MW-3 indicate that iron exists primarily in particulate form, likely as a suspended sediment. The total iron detection is, therefore, attributable to a source other than the landfill.
3. **Arsenic in Well MW-3.** The concentration of arsenic in well MW-3 (i.e., 0.0075 mg/L) exceeds the established AML of 0.0075 mg/L, but remains below the established UTLV of 0.01 mg/L.
4. **Fluoride in Well MW-7R.** The concentration of fluoride in downgradient replacement well MW-7R meets the established AML. The June 2018 analytical result remains within historical dataset range for well MW-7, and is likely attributable to natural fluctuations in groundwater quality.
5. **Nitrate in Well MW-7R.** Nitrate was reported as detected at a concentration higher than the established AML of 5.0 mg/L, however a UTLV has yet to be established for well MW-7. The June 2018 analytical result is likely a result of natural fluctuation in groundwater quality, and future analytical data from well MW-7R will be closely monitored.


Signature of Qualified Groundwater Scientist

Date: 09/12/18

Michael J. Crepeau, P.E.
Senior Project Director
mcrepeau@team-psc.com
Gordon Environmental/PSC
333 Rio Rancho Blvd. N.E., Suite 400
Rio Rancho, NM 87124
(505) 867-6990