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Stephen Lee, Director
Louisiana Department of Natural Resources
Office of Conservation - Injection & Mining Division
617 North Third Street, LaSalle Building
Baton Rouge, Louisiana 70802-5431
via email

DATE
October 12, 2023

SUBJECT
5th Analytical Data Submittal
Westlake US 2, LLC
Sulphur Mines Dome
Calcasieu Parish, Louisiana

REFERENCE
0701093

Dear Mr. Lee:

On behalf of Westlake US 2, LLC (Westlake), Environmental Resources Management Southwest, Inc. (ERM) is pleased to provide the Louisiana Department of Natural Resources (LDNR) Injection & Mining Division with the final laboratory analytical data for groundwater, surface water, and oil samples collected at the Sulphur Mines Dome in Calcasieu Parish. The samples were collected by ERM during August and September 2023 sampling events.

Enclosed are the following:

- Table 1 – Groundwater Data
- Table 2 – Surface Water Data
- Table 3 – Central Lake Water Column Profile
- Table 4 – Gas Data
- Table 5 – Oil Data
- Figure 1-3 – Sample Location Maps
- Figure 4 – Piper Diagram
- Figure 5 – Methane Isotopes
- Attachment 1 – Laboratory Reports

Only final laboratory reports received since the previous data submittal are provided in Attachment 1. Supplemental submittals will be made as additional final laboratory analytical data are received.

1. WATER SAMPLING RESULTS

In August and September 2023, additional samples of groundwater, surface water, brine, and oil were collected at the site. Results were also received for dissolved gas samples collected in May and June. The sampling locations are shown in Figures 1-3.

The water samples were analyzed by ALS Global laboratory in Houston, Texas, a Louisiana Environmental Laboratory Accreditation Program (LELAP) accredited laboratory. Dissolved gases were submitted to and analyzed by Isotech, a Stratum Reservoir Company in Champaign, Illinois. Oil samples were submitted to SPL, a hydrocarbon analytical laboratory in Houston, Texas. All samples were submitted under proper Chain-of-Custody in laboratory supplied containers with appropriate preservative and handling requirements.

1.1 GROUNDWATER SAMPLING RESULTS

On August 22, 2023, groundwater samples were collected from the industrial water wells operated by Westlake, as well as the Cottages Well (019-17636Z) located west of Cavern 7 (see Figure 1). At each well, water was allowed to flow for several minutes prior to sampling, and field parameters, i.e., pH, specific conductivity (SC), oxidation-reduction potential (ORP), and temperature, were recorded with a hand-held meter at the time of sampling. The groundwater analytical data to date are summarized in Table 1.

Reported constituent concentrations have consistently been below their respective RECAP screening standards (GWSS) or EPA Secondary Maximum Contaminant Limits (SMCL), with the exception of iron and manganese. Zinc was reported above the GWSS in 019-1603 during the September event, and all other constituents were consistent with historical samples. Alluvial aquifers throughout South Louisiana are known to exhibit elevated concentrations of naturally occurring iron, manganese, and other metals. Industrial processes utilizing steel piping can also influence the metal concentrations reported in the water. With the exception of a few minor TPH fraction detections, the volatile organic compounds and TPH fractions have been reported as not detected in the water wells since January 2023.

Two produced water samples were collected from production well SN 189416 on August 28, 2023, via wireline sampler. Samples were collected at an approximate depth of 1,300 feet below ground surface (bgs) and 2,700 ft bgs. The produced water exhibits a slightly different water chemistry signature than the brine with higher relative concentration of barium, bromide, hydrogen sulfide, potassium, and strontium than what has been reported in the brine. These produced water data, along with the previously sampled brine data, are included in Table 1. Stable hydrogen and oxygen isotope ratios of the water (δD and $\delta^{18}O$) were also evaluated in the produced water, and the results are summarized in Table 1.

The water quality data Piper diagram is provided as Figure 4. The Piper diagram illustrates the differences between the Chicot aquifer water and the produced water and brine, and the overall consistency of the groundwater quality within the Chicot aquifer. At this time, there is no indication that the groundwater at these locations has been influenced by or mixed with brine, or water from the oil producing zones.

The stable isotopic ratios of the produced water are plotted on Figure 5. The formation water at SN 189416 exhibits a signature indicative of high temperature water-rock interaction, which is different from the global meteoric water signature. Water recharging the aquifer from rainfall is expected to plot on the global meteoric water line.

1.2 SURFACE WATER SAMPLING RESULTS

Surface water samples were collected during September 18-20, 2023, at the bubble site locations. The surface water data are summarized in Table 2. Due to the extreme drought in southwestern Louisiana, several of the bubble sites previously submerged were dry (#1, #4, #9, #19, and #24), and no water sample was collected. Bubble sites #10 and PPG No. 7A have typically been dry and were also dry during this event.

The concentrations of major cations and anion, along with TDS, for the September event were generally higher than the May event. The water level was much lower in the Central Lake than previous sampling events which likely is the cause of elevated concentrations. These concentrations will continue to be monitored for seasonal fluctuations.

The surface water data are plotted on the Piper diagram (Figure 4) for visual comparison. Prior to the September sampling event, the water quality of the Central Lake had remained relatively consistent since sampling began in January 2023. During September, the data remain clustered but have shifted due to the increased concentrations observed during the extremely dry summer and low water level. The shift does not follow a brine mixing line as would be expected if brine were entering the Central Lake.

1.2.1 CENTRAL LAKE WATER COLUMN PROFILE

Field readings from the Central Lake water column are continuing on a weekly basis. The profile data collected from the monitoring station are provided in Table 3. Generally, the water quality is consistent throughout the water column, with a slight change in water quality at the bottom of the water column where reducing conditions (ORP is negative) occur most likely attributed to decaying vegetation accumulating on the bottom. The conductivity has increased since June 2023. The water level in the Central Lake has receded over the extremely dry summer months due to evaporation, which likely has had an impact on the water quality. The surface water will continue to be monitored to evaluate seasonal changes over time.

2. GAS SAMPLING RESULTS

Dissolved gas samples were collected from the Cottages well and bubble site #26 in July 2023. Dissolved gas was not collected from the other water wells during that event. Dissolved gas samples were collected from five water wells in August 2023 (019-580, 019-582, 019-955, 019-1055, and Cottages), because 019-1603 was not in

operation. The data from the August event have not yet been received. Five water wells were sampled in September 2023 (019-580, 019-582, 019-1055, 019-1603, and Cottages), because well 019-995 was not in operation. The dissolved gas sampling locations are provided in Figure 2, and the dissolved gas data received to date, including the September data, are summarized in Table 4.

In September 2023, an attempt was made to collect a gas or dissolved gas sample from each known bubble site. Gas samples were collected from the dry bubble sites and a few of the submerged sites with sufficient gas flow. Dissolved gas samples were collected from submerged sites with low gas flow. Gas samples were not collected from bubble sites #9 and #19 as these sites were dry and inaccessible by boat. A DP-IR, hand-held gas detector, was used in an attempt to locate the bubble sites but was unsuccessful in locating these two sites. Other dry sites were located and sampled. These samples were submitted for rush analysis to Isotech. The gas and dissolved gas data are summarized in Table 4.

Also, during September gas samples were collected from Caverns 2 and 4, which are included in Table 4, and an additional gas sample was collected from SN 189416 with results still pending.

Due to the potential influence of atmospheric gas, the gas compositions reported can vary. Efforts are made to isolate the gas; however, naturally present atmospheric air in the soil and water limit the ability to isolate the gas at the dry bubble sites and the submerged sites with low gas flow. However, the isotopic composition of methane can be utilized to evaluate similarities in the gas samples. The methane isotopic data have been plotted on Figure 6 for comparison with other gas samples collected. In general, the gas from the bubble sites exhibits isotopic characteristics of thermogenic gas originating from a deep source. The gas collected from the caverns and oil wells also plot as thermogenic gas. One bubble site, #26, has a different isotopic signature than the rest of the bubble sites, which is more similar to shallow biogenic gas. Bubble Site #26 was resampled in September and those results are pending.

With a few exceptions, obtaining deuterium isotopic ratio data from the dissolved methane in the water wells has been difficult due to the small quantity of methane present in the water. The available methane isotopic data for the water wells indicates that the methane is biogenic, and different than what is observed in the bubble sites and oil wells.

3. OIL SAMPLE RESULTS

On August 17, 2023 oil samples were collected from Yellow Rock production wells SN 41842 and SN 253998. Yellow Rock split the samples to run their own analysis. On August 29, two oil samples were collected from the casing of SN 189416, a currently shut-in well (results pending), from the top and bottom of the oil column within the tubing, at 170 feet bgs and 1,250 feet bgs, respectively. The oil samples were

submitted to SPL for bulk/whole oil properties. The oil and gas sample locations are shown in Figure 3. The results from this sampling, along with data from previous sampling conducted by Intertek, are provided in Table 5. The data from the SN 189416 sampling have not yet been received. Based on the data comparison, the oil from within the caverns appears to be similar to the previous cavern oil samples and different from the crude oil sample collected from adjacent oil wells.

4. SHEEN SAMPLING

Sheen samples were collected from locations in the Central Lake near bubble site #12 and #14. These samples were submitted to Alpha analytical for fingerprinting analysis. The data are reviewed and provided by Newfields in a separate submittal.

5. SAMPLING CONSTITUENT CHANGE

Based on the data collected since January, there have been no detections above the laboratory reporting limit in groundwater, surface water, brine, or produced water for cadmium, selenium, or silver. Therefore, cadmium, selenium, and silver are not considered constituents of concern in the waters around the salt dome and will be removed from the sampling analyte lists beginning in the 4th Quarter 2023.

6. SCHEDULE

Water wells will continue to be sampled on a monthly basis. The next water well sampling event is planned for later in October 2023. The bubble sites will continue to be sampled as discovered. The next quarterly round of bubble site sampling is planned for December 2023.

We will continue to report additional sampling results to LDNR as they are received. Should you have any questions or need addition information, please contact us at scott.himes@erm.com and david.upthegrove@erm.com.

Sincerely,

Environmental Resources Management Southwest, Inc.

Scott A. Himes, P.G.
Senior Hydrogeologist

David C. Upthegrove, P.G.
Partner

SAH/DCU/jdm

FIGURES

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Legend

- Water Well Sample Location
- Produced Water Sample Location
- Brine Sample Location
- Westlake Property

Notes:
2021 Aerial imagery via USGS Earth Explorer (NAIP).

Figure 1
Groundwater Sampling Locations
Sulphur Dome
Westlake US 2, LLC
Calcasieu Parish, Louisiana

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Source: Esri - ArcGIS Online; GCS North American 1983

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Legend

- Surface Water Sample Location (non-bubble site)
- Bubble Site Water/Gas Sample Location
- Sheen Sample Location
- Westlake Property

Notes:
2021 Aerial imagery via USGS Earth Explorer (NAIP).

Figure 2
Surface Water Sampling Locations
Sulphur Dome
Westlake US 2, LLC
Calcasieu Parish, Louisiana

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Source: Esri - ArcGIS Online; GCS North American 1983

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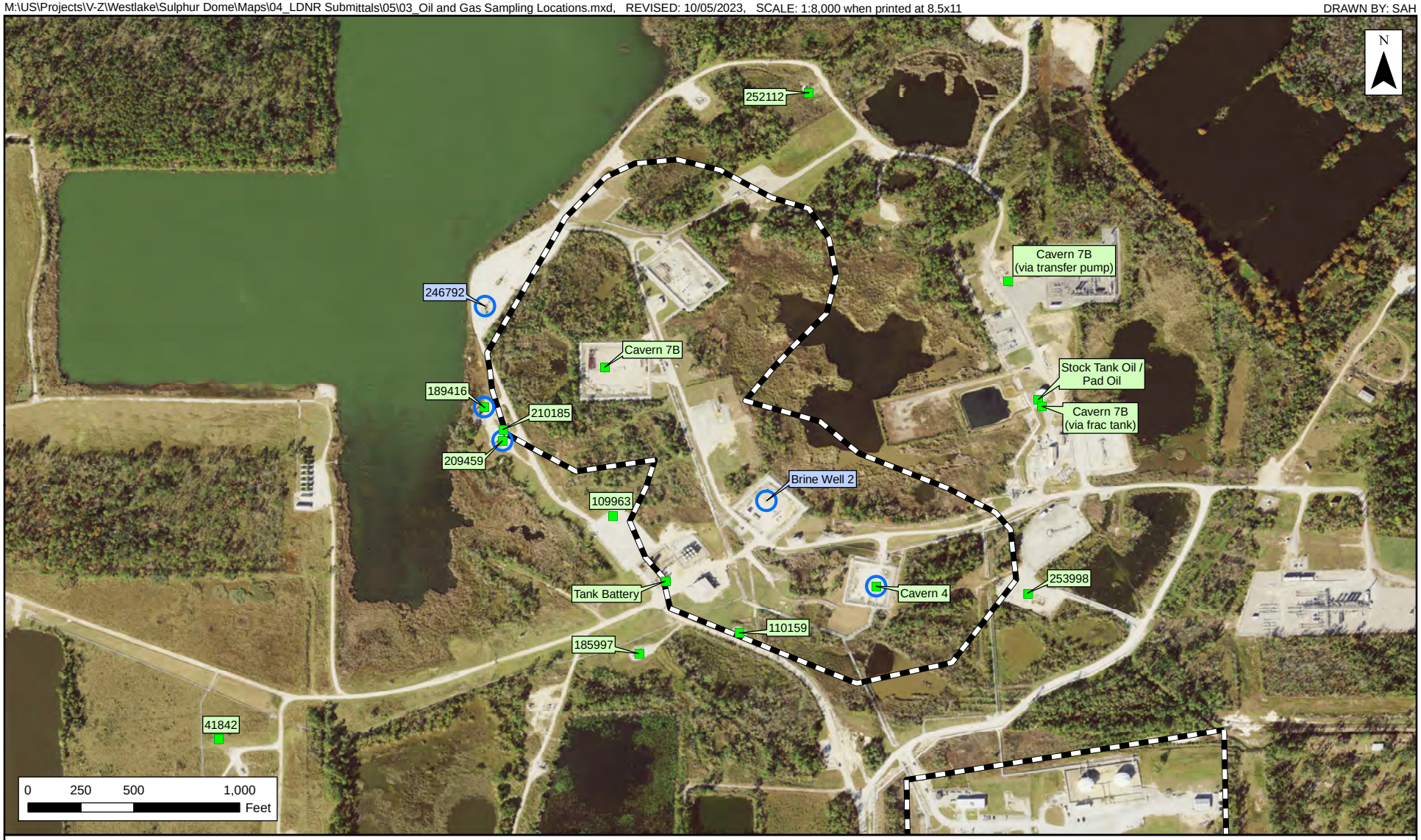

Legend

- Oil Sample Location
- Gas Sample Location
- Westlake Property

Figure 3
Oil and Gas Sampling Locations
Sulphur Dome
Westlake US 2, LLC
Calcasieu Parish, Louisiana

Notes:
2021 Aerial imagery via USGS Earth Explorer (NAIP).

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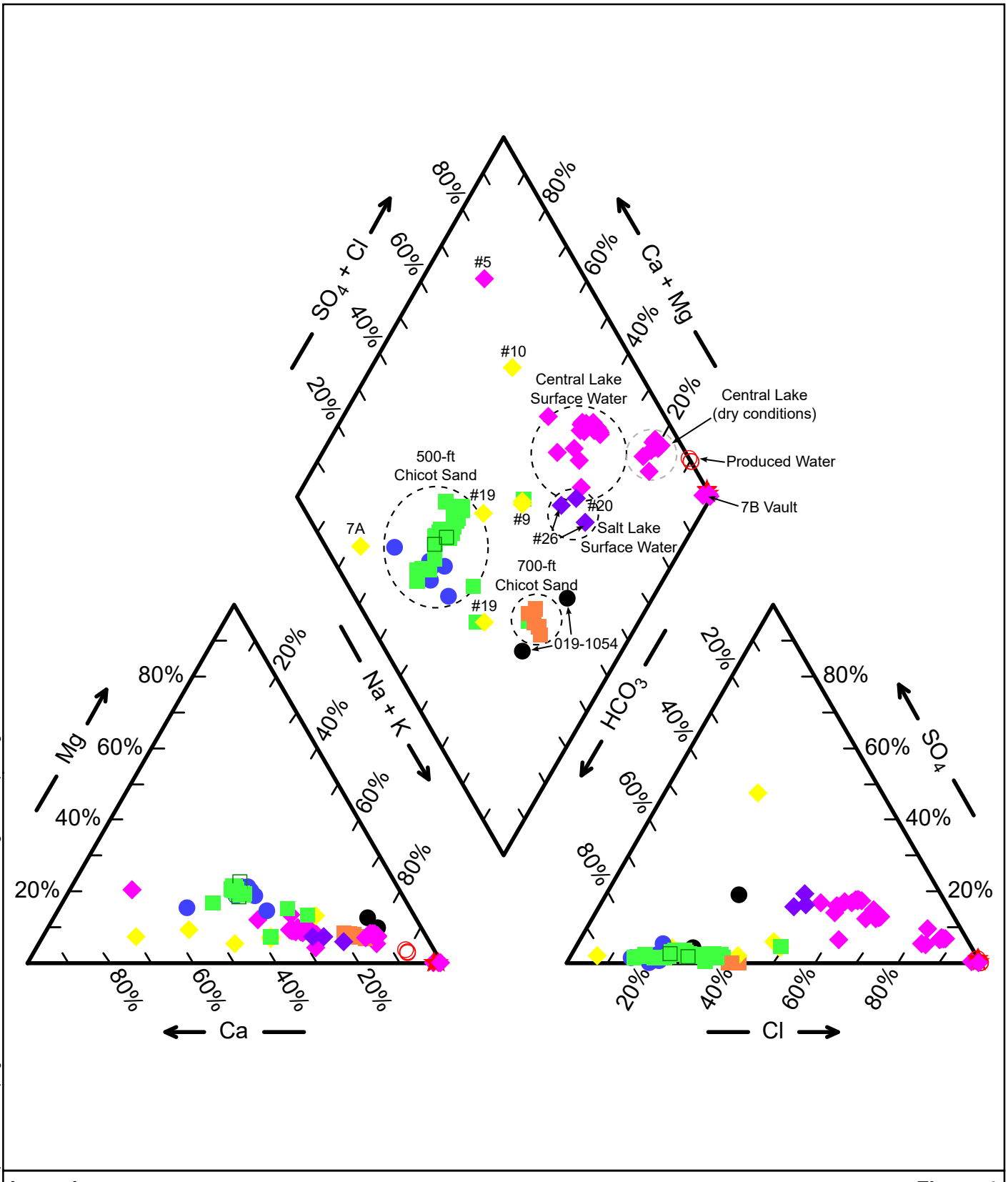

Legend

- Central Lake Surface Water
- Salt Lake Surface Water
- Other Surface Water
- Industrial Water Well (Current)
- Industrial Water Well (Historic)
- Cottages Well
- Other Water Well
- 019-1054 (Historic)
- Produced Water
- Brine

Figure 4
Piper Diagram
Sulphur Dome
Westlake US 2, LLC
Calcacieu Parish, Louisiana

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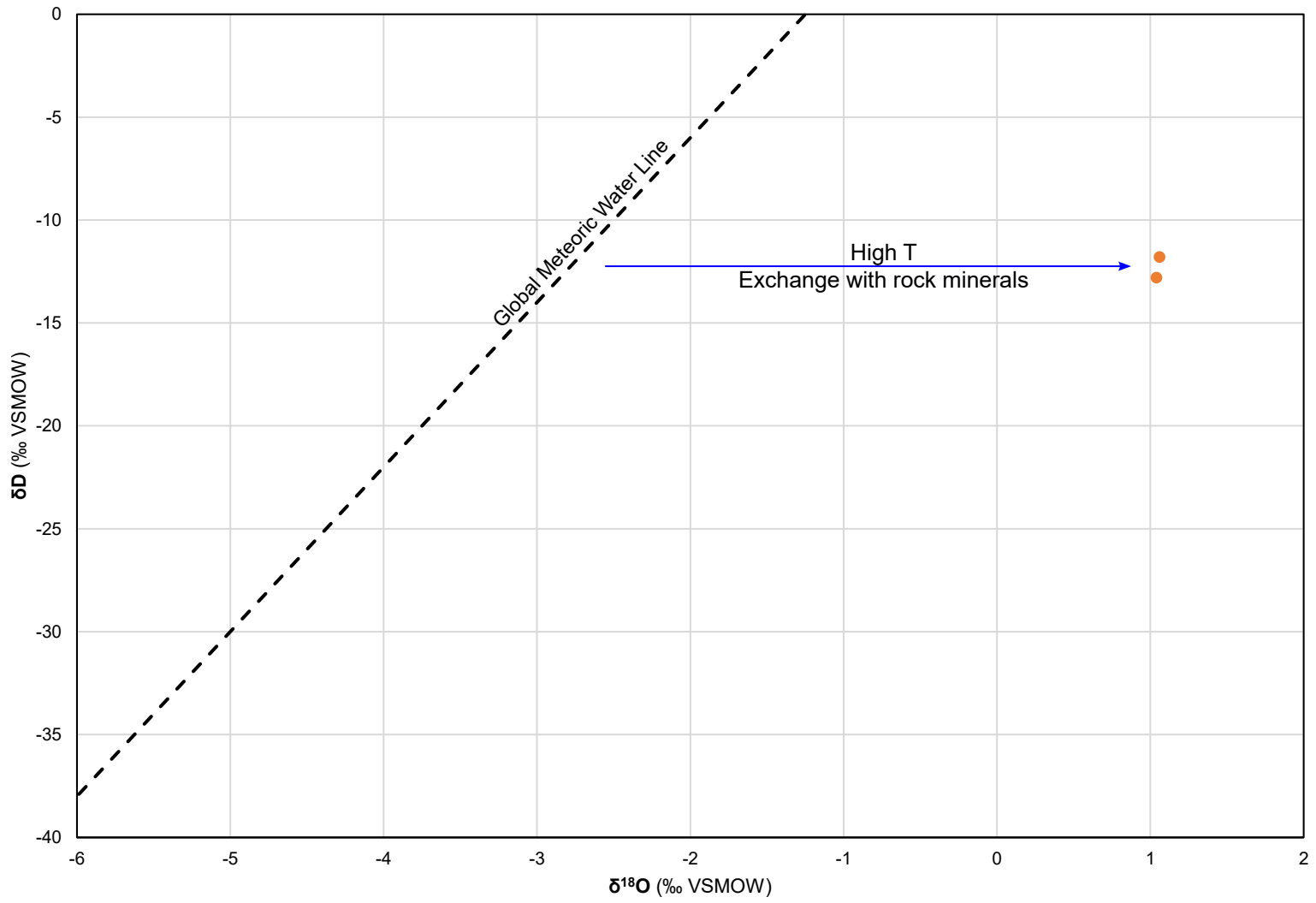
P:\Projects\0677804 Eagle US 2 LLC Sulphur Dome Sampling SH\LDNR Submittals\5th Data Submittal\Figure\SVG\Piper Diagram, REVISED: 10/05/2023



Legend

- Produced Water

Notes:
Domenico, P.A. & Schwartz, F.W., 1998, Physical and Chemical Hydrogeology, 2nd ed., John Wiley & Sons, Inc.

Figure 5
Water Stable Isotopes
Sulphur Dome
Westlake US 2, LLC
Calcasieu Parish, Lousiana

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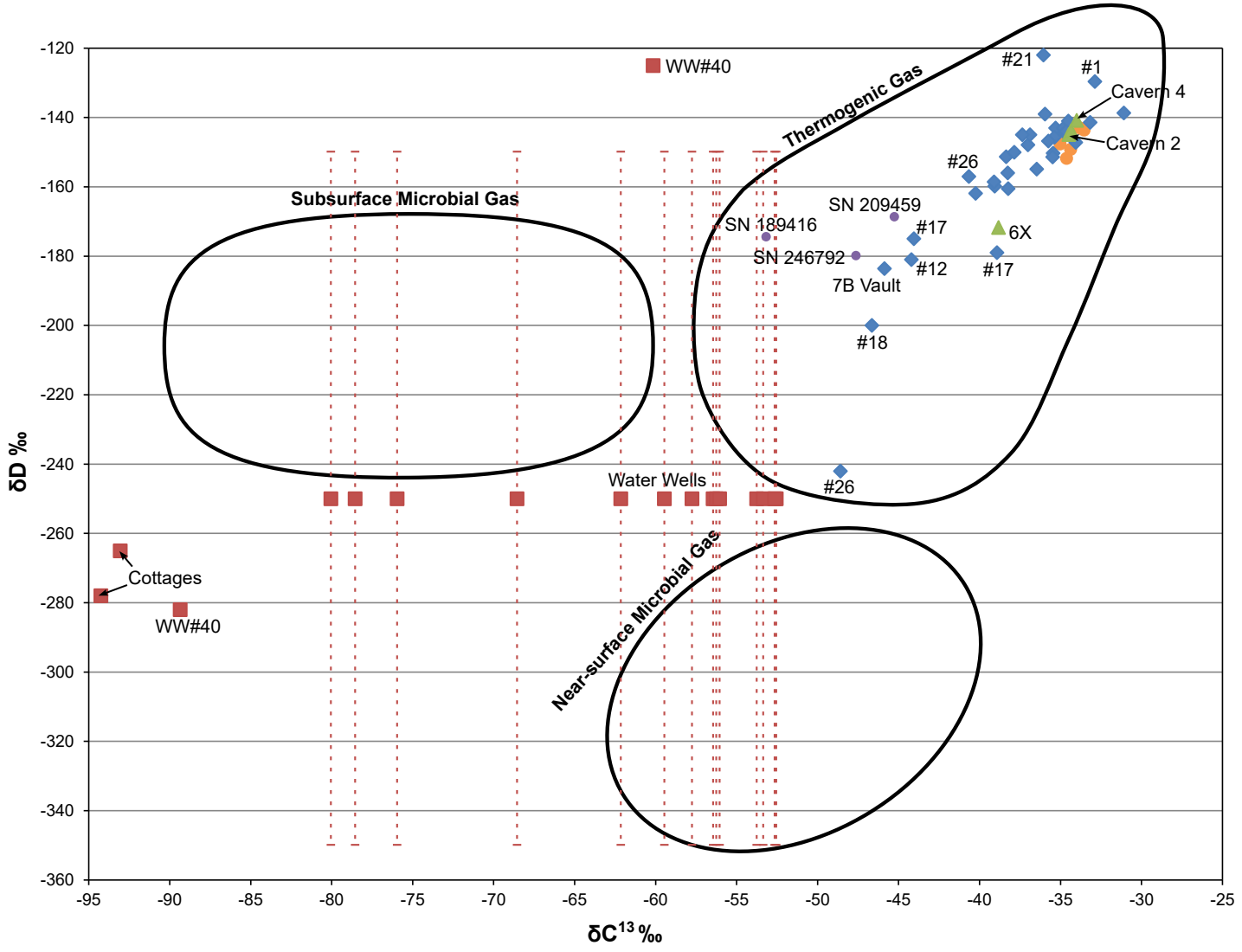

Legend

- Cavern Gas (Lonquist)
- Bubble Site
- Groundwater
- Brine
- Production Gas

Notes:

Coleman, D.D., Liu, C., Hackley, K.C., and Pelphrey, S.R., 1995, Identification of Landfill Methane, Environmental Geosciences, Vol. 2, No. 2, pp. 95-103.

Figure 6
Methane Isotopes
Sulphur Dome
Westlake US 2, LLC
Calcasieu Parish, Lousiana

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TABLES

Table 1
Groundwater Data Summary
Sulphur Dome
Calcasieu Parish, Louisiana

		Sample ID	**019-580**								**019-582**							
		Sample Location	**WW #11**								**WW #13**							
		Sample Interval (ft)	469'								609'							
		Sample Date	1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	7/17/23	8/22/23	9/20/23	1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	7/17/23	8/22/23	9/20/23
		Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	**Units**		**Groundwater**															
Total Metals		**RECAP GWSS**																
Arsenic	mg/L	0.01	0.000477 J	<0.0004	0.000615 J	<0.0004	0.000452 J	0.000556 J	<0.0004	<0.0004	0.000812 J	<0.0004	0.000451 J	0.000418 J	0.000635 J	0.000436 J	0.000488 J	<0.0004
Barium	mg/L	2	**0.23**	**0.235**	**0.205**	**0.216**	**0.197**	**0.200**	**0.221**	**0.233**	**0.239**	**0.221**	**0.243**	**0.232**	**0.210**	**0.217**	**0.224**	**0.197**
Cadmium	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	mg/L	NS	**26.8**	**25.4**	**15.8**	**24.1**	**22.7**	**18.9**	**25.1**	**27.9**	**25.5**	**23.9**	**25.8**	**24.6**	**22.9**	**21.1**	**24.2**	**22.6**
Chromium	mg/L	0.1	<0.0004	<0.0004	0.000559 J	<0.0004	0.000462 J	<0.0004	0.00172 J	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.000697 J	0.000469 J
Iron[(a)]	mg/L	0.3	**5.12**	**4.25**	**2.72**	**1.81**	**3.61**	**6.07**	**4.97**	**3.57**	**4.03**	**4.02**	**6.09**	**6.13**	**3.28**	**3.12**	**3.49**	**4.49**
Lead	mg/L	0.015	0.00144 J	<0.0006	<0.0006	<0.0006	<0.0006	**0.00388**	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Magnesium	mg/L	NS	**8.03**	**8.10**	**4.32**	**7.19**	**7.43**	**5.88**	**7.71**	**8.54**	**7.81**	**7.66**	**7.58**	**7.36**	**7.36**	**6.45**	**7.47**	**7.05**
Manganese[(a)]	mg/L	0.05	**0.412**	**0.413**	**0.215**	**0.317**	**0.355**	**0.329**	**0.411**	**0.471**	**0.417**	**0.388**	**0.388**	**0.408**	**0.361**	**0.349**	**0.372**	**0.353**
Mercury	mg/L	0.002	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	0.0000520 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	0.0000640 J	<0.00003	<0.00003
Nickel	mg/L	0.073	NA	NA	**0.00368**	<0.0006	<0.0006	<0.0006	0.000793 J	<0.0006	NA	NA	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Potassium	mg/L	NS	**2.93**	**2.68**	**2.42**	**2.62**	**2.51**	**1.99**	**2.64**	**3.06**	**2.94**	**2.50**	**2.70**	**2.55**	**2.49**	**2.28**	**2.74**	**3.30**
Selenium	mg/L	0.05	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Silver	mg/L	0.18	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium	mg/L	NS	**31.9**	**27.7**	**71.5**	**27.4**	**24.6**	**19.7**	**30.2**	**30.1**	**28.0**	**26.4**	**30.2**	**27.8**	**24.7**	**22.2**	**29.8**	**46.5**
Strontium	mg/L	NS	**0.246**	**0.228**	**0.183**	**0.212**	**0.214**	**0.175**	**0.215**	**0.247**	**0.240**	**0.208**	**0.231**	**0.218**	**0.221**	**0.195**	**0.215**	**0.201**
Vanadium	mg/L	0.026	NA	NA	0.00434 J	<0.0006	0.00322 J	<0.0006	<0.0006	<0.0006	NA	NA	0.00352 J	<0.0006	0.00358 J	<0.0006	<0.0006	<0.0006
Zinc	mg/L	1.1	**0.0147**	**0.0495**	**0.350**	**0.011**	**0.0130**	**0.00934**	**0.00613**	**0.0215**	**0.0107**	**0.0166**	**0.0474**	**0.019**	**0.00897**	**0.0102**	**0.656**	**0.00742**
Anions/Water Quality Parameters																		
Bicarbonate Alkalinity	mg/L	NS	**200**	**115**	**116**	**114**	**107**	**118**	**120**	**123**	**180**	**115**	**119**	**120**	**109**	**119**	**116**	**132**
Bromide	mg/L	NS	0.0992 J	<0.03	<0.03	**0.169**	<0.03	<0.03	0.0634 J	<0.03	0.0860 J	<0.03	<0.03	**0.168**	<0.03	<0.03	<0.03	<0.03
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloride[(a)]	mg/L	250	**35.7**	**26.4**	**40.7**	**38.7**	**23.7**	**23.7**	**37.1**	**38.1**	**23.4**	**26.3**	**40.4**	**38.1**	**23.2**	**23.6**	**27.7**	**31.0**
Sulfate[(a)]	mg/L	250	**2.91**	**3.67**	**2.21**	**3.3**	**4.28**	**4.07**	**2.95**	**2.58**	**4.11**	**3.68**	**2.69**	**2.9**	**4.30**	**4.41**	**3.44**	**2.73**
Total Dissolved Solids (TDS)[(a)]	mg/L	500	**236**	**186**	**210**	**266**	**204**	**222**	**204**	**232**	**212**	**200**	**236**	**248**	**190**	**234**	**226**	**256**
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	**2.14**	NA
pH[(a)]	SI	6.5 - 8.5	NA	7.04 H	NA	7.30 H	7.22 H	7.85 H	7.63 H	7.25 H	NA	7.01 H	NA	7.37 H	7.36 H	7.75 H	7.23 H	7.42 H
pH (field)	SI	6.5 - 8.5	**6.41**	NA	**5.79**	**6.68**	NA	**6.40**	**6.90**	NA	**6.45**	**6.53**	**5.89**	**6.42**	NA	**6.38**	**6.80**	NA
Sulfides																		
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	NS	<1	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Volatile Organic Compounds																		
Benzene	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	0.7	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	mg/L	1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	10	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
TPH Fractions																		
Aliphatics >C6-C8	mg/L	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	0.15	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	7.3	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.0206**
Aromatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	0.15	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	0.15	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	**0.0115**	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	0.15	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Stable Isotopes																		
δD	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
$\delta^{18}O$	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
J - Estimated Value reported below the detection limit.
H - pH is received at the lab outside of hold time.
< - Not Detected at the reporting limit shown.
Bolded values deteted in the sample.
NA - Not Analyzed
NS - No Standard
[(a)] - EPA Secondary MCL (No RECAP standard)
Shaded values exceed standard

Table 1
Groundwater Data Summary
Sulphur Dome
Calcasieu Parish, Louisiana

		Sample ID	019-995						019-1055							
		Sample Location	WW #12						WW #19							
		Sample Interval (ft)	485'						520'							
		Sample Date	1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	8/22/23	1/26/23	3/30/23	4/27/23	5/18/23	6/16/23	7/17/23	8/22/23	9/20/23
		Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	**Units**		**Groundwater**													
Total Metals		**RECAP GWSS**														
Arsenic	mg/L	0.01	0.000762 J	<0.0004	0.000739 J	0.000497 J	<0.0004	0.000638 J	0.000419 J	<0.0004	0.000461 J	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Barium	mg/L	2	**0.214**	**0.234**	**0.242**	**0.207**	**0.205**	**0.211**	**0.265**	**0.263**	**0.242**	**0.256**	**0.207**	**0.262**	**0.229**	**0.275**
Cadmium	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	mg/L	NS	**26.4**	**25.3**	**27.7**	**24.8**	**23.0**	**24.3**	**28.7**	**27.5**	**24.7**	**25.9**	**22.6**	**24.7**	**24.2**	**30.1**
Chromium	mg/L	0.1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.000600 J	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.000535 J	<0.0004
Iron[(a)]	mg/L	0.3	**0.821**	**4.76**	**3.42**	**2.11**	**4.88**	**3.53**	**3.81**	**3.96**	**3.48**	**3.42**	**4.24**	**3.72**	**3.29**	**3.83**
Lead	mg/L	0.015	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Magnesium	mg/L	NS	**8.02**	**7.87**	**8.14**	**7.47**	**7.51**	**7.66**	**8.66**	**8.42**	**7.32**	**7.78**	**7.32**	**7.45**	**7.46**	**9.04**
Manganese[(a)]	mg/L	0.05	**0.388**	**0.403**	**0.416**	**0.403**	**0.375**	**0.377**	**0.420**	**0.400**	**0.353**	**0.379**	**0.359**	**0.369**	**0.344**	**0.432**
Mercury	mg/L	0.002	<0.00003	0.0000310 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	0.0000300 J	<0.00003	<0.00003	<0.00003	0.0000570 J	<0.00003	<0.00003
Nickel	mg/L	0.073	NA	NA	**0.00531**	<0.0006	0.000820 J	<0.0006	NA	NA	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Potassium	mg/L	NS	**3.00**	**2.60**	**2.79**	**2.61**	**2.53**	**2.65**	**3.10**	**2.69**	**2.54**	**2.74**	**2.48**	**2.59**	**2.54**	**3.29**
Selenium	mg/L	0.05	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	0.00114 J	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Silver	mg/L	0.18	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.000242 J	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium	mg/L	NS	**29.9**	**30.3**	**32.2**	**30.5**	**25.0**	**27.2**	**34.4**	**32.0**	**28.5**	**29.6**	**24.8**	**29.0**	**28.3**	**35.1**
Strontium	mg/L	NS	**0.241**	**0.221**	**0.244**	**0.223**	**0.220**	**0.207**	**0.262**	**0.238**	**0.225**	**0.24**	**0.215**	**0.229**	**0.215**	**0.266**
Vanadium	mg/L	0.026	NA	NA	0.00299 J	<0.0006	0.00370 J	<0.0006	NA	NA	0.00320 J	<0.0006	0.00311 J	<0.0006	<0.000698 J	<0.0006
Zinc	mg/L	1.1	**0.00426**	<0.002	0.00276 J	<0.002	<0.002	0.00218 J	**0.00993**	**0.0107**	**0.0163**	**0.00906**	**0.00514**	**0.0231**	**0.0260**	**0.0241**
Anions/Water Quality Parameters																
Bicarbonate Alkalinity	mg/L	NS	**258**	**122**	**124**	**128**	**194**	**118**	**250**	**123**	**119**	**118**	**108**	**135**	**119**	**121**
Bromide	mg/L	NS	0.0931 J	0.0782 J	<0.03	**0.164**	<0.03	<0.03	0.0982 J	<0.03	<0.03	**0.167**	<0.03	<0.03	<0.03	<0.03
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloride[(a)]	mg/L	250	**28.7**	**36.3**	**37.5**	**34.1**	**23.4**	**22.2**	**38.3**	**36.8**	**40.6**	**37.6**	**23.6**	**37.4**	**36.4**	**37.8**
Sulfate[(a)]	mg/L	250	**3.63**	**2.80**	**2.12**	**2.53**	**3.57**	**4.11**	**3.51**	**3.39**	**3.55**	**3.85**	**4.21**	**3.77**	**3.64**	**3.45**
Total Dissolved Solids (TDS)[(a)]	mg/L	500	**226**	**240**	**202**	**222**	**194**	**228**	**244**	**230**	**220**	**274**	**176**	**272**	**238**	**244**
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	**3.84**	NA	NA	NA	NA	NA	NA	**1.11**	NA
pH[(a)]	SI	6.5 - 8.5	NA	6.94 H	NA	7.55 H	7.30 H	7.32H	NA	7.16 H	NA	7.14 H	7.38 H	7.70 H	7.21 H	7.23 H
pH (field)	SI	6.5 - 8.5	**6.35**	**6.53**	**5.64**	**6.18**	NA	**6.87**	**6.82**	**6.53**	**5.84**	**6.46**	NA	**6.25**	**7.03**	NA
Sulfides																
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	NS	<1	<1.7	<1.7	<1.7	<1.7	<1.7	<1	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Volatile Organic Compounds																
Benzene	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	0.7	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	mg/L	1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	10	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
TPH Fractions																
Aliphatics >C6-C8	mg/L	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	0.15	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	7.3	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Aromatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	0.15	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	0.15	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	0.15	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Stable Isotopes																
δD	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
$\delta^{18}O$	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
J - Estimated Value reported below the detection limit.
H - pH is received at the lab outside of hold time.
< - Not Detected at the reporting limit shown.
Bolded values deteted in the sample.
NA - Not Analyzed
NS - No Standard
[(a)] - EPA Secondary MCL (No RECAP standard)
Shaded values exceed standard

Table 1
Groundwater Data Summary
Sulphur Dome
Calcasieu Parish, Louisiana

		Sample ID	019-1603				019-17636Z						
		Sample Location	WW #40				Cottages Well						
		Sample Interval (ft)	520'				740'						
		Sample Date	3/30/23	5/18/23	6/16/23	9/19/23	3/9/23	4/27/23	5/18/23	6/16/23	7/17/23	8/22/23	9/20/23
		Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	**Units**		**Groundwater**										
Total Metals		**RECAP GWSS**											
Arsenic	mg/L	0.01	0.000974 J	**0.0044**	0.000466 J	<0.0004	<0.0004	0.000464 J	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Barium	mg/L	2	**0.258**	**0.178**	**0.136**	**0.173**	**0.187**	**0.187**	**0.171**	**0.172**	**0.187**	**0.160**	**0.181**
Cadmium	mg/L	0.005	<0.0002	<0.0002	<0.0002002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	mg/L	NS	**26.9**	**56**	**22.4**	**19.7**	**13.7**	**14.5**	**14.5**	**14.4**	**13.4**	**12.2**	**14.4**
Chromium	mg/L	0.1	<0.0004	0.000825 J	0.000415 J	0.000721 J	<0.0004	<0.0004	0.00103 J	0.000522 J	**0.00744**	0.000562 J	<0.0004
Iron[a]	mg/L	0.3	**12.4**	**0.69**	**4.39**	**3.45**	**5.57**	**2.48**	**4.76**	**6.04**	**2.34**	**1.46**	**2.35**
Lead	mg/L	0.015	<0.0006	0.000702 J	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Magnesium	mg/L	NS	**8.33**	**6.58**	**7.37**	**6.34**	**3.69**	**3.97**	**4.05**	**3.96**	**3.72**	**3.38**	**4.05**
Manganese[a]	mg/L	0.05	**0.506**	**0.348**	**0.491**	**0.297**	**0.193**	**0.192**	**0.224**	**0.211**	**0.190**	**0.156**	**0.183**
Mercury	mg/L	0.002	<0.00003	0.0000720 J	0.0000400 J	<0.00003	<0.00003	<0.00003	0.000117 J	<0.00003	0.0000510 J	<0.00003	<0.00003
Nickel	mg/L	0.073	NA	**0.00202**	0.000750 J	0.000615 J	NA	**0.00330**	**0.00408**	**0.00304**	**0.00239**	<0.0006	<0.0006
Potassium	mg/L	NS	**2.81**	**2.61**	**2.43**	**3.62**	**2.03**	**2.24**	**2.31**	**2.20**	**2.12**	**2.03**	**2.38**
Selenium	mg/L	0.05	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Silver	mg/L	0.18	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium	mg/L	NS	**32.1**	**92.9**	**24.0**	**52.1**	**57.7**	**65.2**	**71.2**	**66.2**	**71.2**	**72.1**	**77.9**
Strontium	mg/L	NS	**0.235**	**0.397**	**0.210**	**0.177**	**0.160**	**0.167**	**0.171**	**0.179**	**0.157**	**0.141**	**0.166**
Vanadium	mg/L	0.026	NA	**0.0136**	0.00320 J	<0.0006	NA	0.00270 J	**0.0006**	0.00295 J	<0.0006	0.000689 J	<0.0006
Zinc	mg/L	1.1	**0.0845**	**0.0231**	**0.0200**	**1.47**	**0.255**	**0.320**	**0.202**	**0.203**	**0.798**	**0.0237**	**0.0981**
Anions/Water Quality Parameters													
Bicarbonate Alkalinity	mg/L	NS	**125**	**183**	**113**	**144**	**139**	**134**	**139**	**132**	**153**	**153**	**141**
Bromide	mg/L	NS	**0.101**	<0.03	**0.143**	<0.03	**0.102**	**0.105**	**0.19**	**0.179**	**0.156**	**0.118**	**0.106**
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloride[a]	mg/L	250	**36.6**	**115**	**23.0**	**27.0**	**52.8**	**55.6**	**52.8**	**52.6**	**59.6**	**57.5**	**54.5**
Sulfate[a]	mg/L	250	0.426 J	**14.5**	**3.00**	**2.87**	<0.2	0.286 J	**0.574**	**0.608**	0.277 J	0.462 J	0.300 J
Total Dissolved Solids (TDS)[a]	mg/L	500	**206**	**446**	**192**	**224**	**274**	**250**	**284**	**244**	**308**	**270**	**270**
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.38**	NA
pH[a]	SI	6.5 - 8.5	7.23 H	8.02 H	7.45 H	7.38 H	NA	NA	7.63 H	7.30 H	7.91 H	7.32 H	7.44 H
pH (field)	SI	6.5 - 8.5	**6.68**	**6.65**	NA	**6.81**	**7.67**	**5.73**	**7.06**	NA	**6.28**	**7.05**	NA
Sulfides													
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	NS	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Volatile Organic Compounds													
Benzene	mg/L	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	0.7	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	mg/L	1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	10	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	10	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
TPH Fractions													
Aliphatics >C6-C8	mg/L	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	0.15	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	7.3	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Aromatics >C8-C10	mg/L	0.15	<0.01	<0.01	<0.01	<0.01	**0.0132**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >C10-C12	mg/L	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	0.15	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	0.15	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	0.15	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Stable Isotopes													
δD	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
$\delta^{18}O$	‰	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
J - Estimated Value reported below the detection limit.
H - pH is received at the lab outside of hold time.
< - Not Detected at the reporting limit shown.
Bolded values deteted in the sample.
NA - Not Analyzed
NS - No Standard
[a] - EPA Secondary MCL (No RECAP standard)
Shaded values exceed standard

Table 1
Groundwater Data Summary
Sulphur Dome
Calcasieu Parish, Louisiana

		Sample ID	6X Brine	007-B Brine		Tank Battery	189416	
		Sample Location	SN 57788	SN 67270	7B-Brine	Produced Water	SN 189416	
		Sample Interval (ft)	Brine	3,000'	3,000'		1,300'	2,700'
		Sample Date	1/25/23	2/16/23	7/27/23	5/25/23	8/28/23	8/28/23
		Sampler	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	**Units**		**Brine**			**Produced Water**		
Total Metals		**RECAP GWSS**						
Arsenic	mg/L	0.01	0.0300 J	<0.04	<0.04	<0.008	<0.008	<0.008
Barium	mg/L	2	**0.220**	<0.19	<0.19	**60.1**	**67.4**	**80.6**
Cadmium	mg/L	0.005	<0.01	<0.02	<0.02	<0.004	<0.004	<0.004
Calcium	mg/L	NS	**722**	**1,320**	**1,360**	**2,940**	**2,920**	**3,050**
Chromium	mg/L	0.1	**0.243**	**0.722**	0.114 J	0.0717 J	0.0593 J	0.0606 J
Iron[(a)]	mg/L	0.3	**25.7**	9.65 J	2.78 J	1.94 J	**31.1**	**32.4**
Lead	mg/L	0.015	<0.03	<0.06	<0.06	<0.012	**0.0839**	0.0342 J
Magnesium	mg/L	NS	8.16 J	8.64 J	9.30 J	**971**	**832**	**843**
Manganese[(a)]	mg/L	0.05	**0.953**	0.487 J	0.361 J	**1.43**	**6.78**	**6.60**
Mercury	mg/L	0.002	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Nickel	mg/L	0.073	NA	NA	**0.211**	<0.012	**0.124**	**0.125**
Potassium	mg/L	NS	**14.4**	13.8 J	14.0 J	**185**	**182**	**190**
Selenium	mg/L	0.05	<0.0550	<0.11	<0.11	<0.022	<0.022	<0.022
Silver	mg/L	0.18	<0.01	<0.02	<0.02	<0.004	<0.004	<0.004
Sodium	mg/L	NS	**100,000**	**82,600**	**91,900**	**44,000**	**45,400**	**47,900**
Strontium	mg/L	NS	**2.66**	**11.0**	**10.7**	**134**	**149**	**162**
Vanadium	mg/L	0.026	NA	NA	<0.06	<0.012	<0.012	<0.012
Zinc	mg/L	1.1	**0.481**	**1.70**	**1.55**	0.0695 J	**7.10**	**1.54**
Anions/Water Quality Parameters								
Bicarbonate Alkalinity	mg/L	NS	**159**	**140**	**124**	**204**	**95.9**	**94.0**
Bromide	mg/L	NS	<3	<7.5	<15	**79.5**	**96.4**	**95.7**
Carbonate Alkalinity	mg/L	NS	<5	<5	<5	<5	<5	<5
Chloride[(a)]	mg/L	250	**213,000**	**201,000**	**179,000**	**79,900**	**70,500**	**72,600**
Sulfate[(a)]	mg/L	250	**1,380**	**3,060**	**3,270**	**1,340**	<10	<10
Total Dissolved Solids (TDS)[(a)]	mg/L	500	**239,000**	**300,000**	**255,000**	**161,000**	**159,000**	**149,000**
Total Organic Carbon (TOC)	mg/L	NS	NA	NA	NA	NA	NA	NA
pH[(a)]	SI	6.5 - 8.5	NA	NA	6.75 H	6.97 H	8.10 H	8.06 H
pH (field)	SI	6.5 - 8.5	NA	NA	NA	NA	NA	NA
Sulfides								
Hydrogen Sulfide	mg/L	NS	<0.5	<0.5	<0.5	**1.7**	**23.1**	**23.3**
Sulfide	mg/L	NS	<1	<1	<1.7	<1.7	<1.7	<1.7
Volatile Organic Compounds								
Benzene	mg/L	0.005	**0.170**	**0.092**	**0.360**	<0.0002	<0.005	<0.005
Ethylbenzene	mg/L	0.7	0.0075 J	<0.0003	**0.0059**	<0.0003	<0.0075	<0.0075
Toluene	mg/L	1	**0.110**	**0.025**	**0.130**	<0.0002	<0.005	<0.005
m,p-Xylene	mg/L	10	0.013 J	<0.0005	**0.0079**	<0.0005	<0.012	<0.012
o-Xylene	mg/L	10	0.0091 J	<0.0003	**0.0079**	<0.0003	<0.0075	<0.0075
Xylenes, Total	mg/L	10	**0.022**	<0.0003	**0.016**	<0.0003	<0.0075	<0.0075
TPH Fractions								
Aliphatics >C6-C8	mg/L	3.2	**0.0997**	**0.0803**	**0.147**	**0.144**	**1.08**	<1
Aliphatics >C8-C10	mg/L	0.15	<0.01	**0.107**	<0.01	**0.0131**	**2.58**	<1
Aliphatics >C10-C12	mg/L	0.15	<0.001	NA	<0.00192	**0.969**	**5.78**	**3.05**
Aliphatics >C12-C16	mg/L	0.15	<0.002	NA	**0.0288**	**3.77**	**37.4**	**20.2**
Aliphatics >C16-C35	mg/L	7.3	<0.008	NA	**0.774**	**4.44**	**118**	**65.3**
Aromatics >C8-C10	mg/L	0.15	**0.0284**	**0.422**	**0.0373**	**0.0557**	**1.23**	<1
Aromatics >C10-C12	mg/L	0.15	<0.001	NA	**0.00293**	**0.211**	**1.62**	**0.714**
Aromatics >C12-C16	mg/L	0.15	<0.004	NA	**0.0109**	**1.29**	**12.8**	**5.52**
Aromatics >C16-C21	mg/L	0.15	<0.003	NA	**0.0281**	**1.09**	**19.5**	**9.75**
Aromatics >C21-C35	mg/L	0.15	<0.009	NA	**0.161**	**1.05**	**38.2**	**20.3**
Stable Isotopes								
δD	‰	NS	NA	NA	NA	NA	**-11.8**	**-12.8**
$\delta^{18}O$	‰	NS	NA	NA	NA	NA	**1.06**	**1.04**

Notes
J - Estimated Value reported below the detection limit
H - pH is received at the lab outside of hold time.
< - Not Detected at the reporting limit shown.
Bolded values deteted in the sample.
NA - Not Analyzed
NS - No Standard
[(a)] - EPA Secondary MCL (No RECAP standard)
Shaded values exceed standard

Table 2

Surface Water Data Summary

Sulphur Dome

Calcasieu Parish, Louisiana

LDNR Sample No.		#1		#3			#4		#5			#6		
Sample ID		Brine Well 22 BS	BS 1	CP BS 1	BS-3	BS-3	CP BS 2	BS 4	CP BS 3	BS-5	BS-5	BS 6	BS 6	BS-6
Sample Date		1/25/23	5/18/23	1/30/23	5/22/23	9/18/23	1/30/23	5/22/23	1/30/23	5/17/23	9/19/23	2/28/23	5/18/23	9/19/23
Sample Interval (ft)		Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Sampler		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	**Units**	**Bubble Site (Surface Water)**												
Total Metals														
Arsenic	mg/L	0.00149 J	**0.00594**	0.000862 J	0.00113 J	**0.00442**	0.000868 J	0.00110 J	0.000769 J	0.00139 J	0.00168 J	0.000784 J	0.00108 J	**0.00200**
Barium	mg/L	**0.300**	**0.317**	**0.160**	**0.156**	**0.453**	**0.367**	**0.276**	**0.155**	**0.216**	**0.413**	**0.116**	**0.152**	**0.446**
Cadmium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	mg/L	**71.2**	**83.5**	**75.3**	**65.9**	**88.2**	**64.2**	**69.6**	**77.7**	**73.3**	**74.5**	**66.3**	**66.3**	**82.8**
Chromium	mg/L	0.000847 J	0.00159 J	<0.0004	0.00201 J	0.000602 J	<0.0004	<0.0004	<0.0004	0.000998 J	<0.0004	<0.0004	0.000731 J	<0.0004
Iron	mg/L	**1.14**	**3.04**	0.132 J	0.118 J	**0.254**	0.0258 J	0.0647 J	0.125 J	0.160 J	0.0875 J	0.0485 J	0.0249 J	0.0871 J
Lead	mg/L	**0.00208**	**0.00466**	<0.0006	<0.0006	0.000710 J	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Magnesium	mg/L	**19.8**	**16.1**	**15.0**	**12.0**	**25.4**	**12.6**	**13.6**	**15.0**	**14.7**	**28.0**	**11.7**	**12.4**	**31.1**
Manganese	mg/L	**0.797**	**1.75**	**0.266**	**0.389**	**0.859**	**0.458**	**0.747**	**0.232**	**2.28**	**0.523**	**0.813**	**0.645**	**1.18**
Mercury	mg/L	<0.00003	0.0000990 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	0.0000670 J	<0.00003
Nickel	mg/L	NA	**0.00641**	NA	0.00114 J	**0.00212**	NA	**0.00385**	NA	0.00168 J	0.000849 J	NA	0.00124 J	0.00128 J
Potassium	mg/L	**2.57**	**2.83**	**2.90**	**2.17**	**4.09**	**2.58**	**2.34**	**2.86**	**2.53**	**4.25**	**2.31**	**2.18**	**4.63**
Selenium	mg/L	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Silver	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium	mg/L	**156**	**123**	**174**	**155**	**534**	**166**	**176**	**19.1**	**203**	**571**	**142**	**161**	**598**
Strontium	mg/L	**0.619**	**0.598**	**0.556**	**0.479**	**0.894**	**0.482**	**0.532**	**0.578**	**0.552**	**0.883**	**0.441**	**0.496**	**0.930**
Vanadium		NA	**0.00639**	NA	0.00324 J	**0.0115**	NA	0.00181 J	NA	0.00207 J	0.00499 J	NA	0.00171 J	**0.00667**
Zinc	mg/L	**0.00857**	**0.0179**	**0.00452**	**0.0448**	**0.0243**	0.00213 J	0.00289 J	**0.00748**	0.00250 J	0.00357 J	<0.002	0.00307 J	0.00336 J
Anions/Water Quality Parameters														
Bicarbonate Alkalinity	mg/L	**269**	**178**	**241**	**149**	**206**	**238**	**164**	**245**	**150**	**107**	**148**	**143**	**116**
Bromide	mg/L	<0.03	<0.03	<0.03	<0.03	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Carbonate Alkalinity	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	**13.8**	<5	<5	<5
Chloride	mg/L	**317**	**213**	**308**	**322**	**928**	**296**	**340**	**343**	**332**	**982**	**253**	**302**	**957**
Sulfate	mg/L	**45.2**	**70.3**	**113**	**89.6**	**74.9**	**111**	**83.5**	**135**	**82.9**	**105**	**96.8**	**90.7**	**101**
Total Dissolved Solids (TDS)	mg/L	**676**	**760**	**80.0**	**880**	**1,990**	**512**	**864**	**892**	**792**	**1,990**	**710**	**784**	**2,030**
pH	SI	NA	7.20 H	NA	7.75 H	6.97 H	NA	7.66 H	NA	7.79 H	8.61 H	NA	7.96 H	7.84 H
Sulfides														
Hydrogen Sulfide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	<1	<1.7	<1	<1.7	<1.7	<1	<1.7	<1	<1.7	<1.7	<1	<1.7	<1.7
Volatile Organic Compounds														
Benzene	mg/L	**0.00120**	<0.0002	<0.0002	<0.0002	0.00046 J	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	<0.0003	0.58 J	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	mg/L	0.00079 J	<0.0002	<0.0002	<0.0002	**0.0011**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
TPH Fractions														
Aliphatics >C6-C8	mg/L	<0.01	<0.01	<0.01	<0.01	**0.134**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	mg/L	<0.001	**0.0202**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	**0.0746**	**0.234**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	**0.249**	**0.876**	<0.008	<0.008	**0.0546**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Aromatics >C8-C10	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.0102**	<0.01	<0.01
Aromatics >C10-C12	mg/L	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	**0.0417**	**0.0179**	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	**0.121**	**0.0535**	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	<0.009	**0.0511**	<0.009	<0.009	**0.0290**	<0.009	<0.009	<0.009	<0.009	**0.0145**	<0.009	<0.009	**0.0379**

Notes

J - Estimated Value reported below the detection limit.

H - pH is received at the lab outside of hold time (15 min from sampling).

< - Not Detected at the reporting limit shown.

Bolded values deteted in the sample.

Table 2

Surface Water Data Summary

Sulphur Dome

Calcasieu Parish, Louisiana

LDNR Sample No.		#7			#8			#9		#10	#12			#17		
Sample ID		BS 7	BS-7	BS-7	BS 8	BS-8	BS-8	Brine Pond 4 BS		1101529-BS	BS 12	BS-12	BS-12	BS 17	BS-17	BS-17
Sample Date		2/28/23	5/17/23	9/19/23	2/28/23	5/18/23	9/19/23	2/10/23	5/18/23	2/10/23	2/28/23	5/18/23	9/19/23	2/28/23	5/17/23	9/20/23
Sample Interval (ft)		Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Sampler		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	**Units**	**Bubble Site (Surface Water)**														
Total Metals																
Arsenic	mg/L	0.000886 J	0.00118 J	**0.00206**	0.000975 J	0.00150 J	0.00189 J	0.00176 J	**0.00419**	0.000896 J	0.000861 J	0.00121 J	**0.00217**	0.000797 J	0.00130 J	0.00192 J
Barium	mg/L	**0.119**	**0.194**	**0.451**	**0.127**	**0.224**	**0.475**	**0.118**	**0.168**	**0.0594**	**0.119**	**0.168**	**0.440**	**0.118**	**0.188**	**0.475**
Cadmium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	mg/L	**65.8**	**66.3**	**74.5**	**68.1**	**74**	**80.1**	**38.6**	**50.2**	**55.8**	**66.9**	**70.2**	**80.7**	**65.8**	**71.3**	**77.5**
Chromium	mg/L	<0.0004	0.000695 J	<0.0004	<0.0004	0.000627 J	0.000472 J	<0.0004	0.000513 J	<0.0004	<0.0004	0.000565 J	0.000960 J	<0.0004	0.00127 J	<0.0004
Iron	mg/L	0.0546 J	0.0565 J	0.0248 J	0.166 J	**0.27**	0.0310 J	**0.609**	**0.694**	0.0432 J	0.0570 J	0.0237 J	0.0404 J	0.0795 J	0.0852 J	0.0764 J
Lead	mg/L	<0.0006	<0.0006	<0.0006	<0.0006	0.000694 J	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Magnesium	mg/L	**11.5**	**13.2**	**29.7**	**12**	**14.7**	**30.7**	**4.2**	**5.93**	**5.64**	**11.9**	**14.2**	**32.6**	**11.5**	**14.1**	**29.0**
Manganese	mg/L	**1.03**	**2.36**	**0.435**	**0.972**	**2.15**	**0.602**	**0.204**	**0.614**	**0.0295**	**0.885**	**0.732**	**0.768**	**1.00**	**1.29**	**0.785**
Mercury	mg/L	<0.00003	0.000133 J	<0.00003	<0.00003	0.000109 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	**0.000206**	<0.00003	<0.00003	**0.000338**	<0.00003
Nickel	mg/L	NA	0.00130 J	0.000966 J	NA	0.00179 J	0.00106 J	NA	0.00192 J	NA	NA	0.00126 J	0.00137 J	NA	0.00159 J	0.00123 J
Potassium	mg/L	**2.36**	**2.19**	**4.31**	**2.39**	**2.54**	**4.51**	**1.17**	**2.39**	**2.44**	**2.3**	**2.33**	**4.79**	**2.36**	**2.42**	**4.07**
Selenium	mg/L	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Silver	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium	mg/L	**140**	**171**	**591**	**144**	**196**	**631**	**64.6**	**83.4**	**37.6**	**146**	**194**	**603**	**137**	**197**	**564**
Strontium	mg/L	**0.426**	**0.509**	**0.895**	**0.457**	**0.56**	**0.951**	**0.243**	**0.35**	**0.237**	**0.451**	**0.533**	**0.947**	**0.435**	**0.54**	**0.900**
Vanadium		NA	0.00226 J	**0.00588**	NA	0.00434 J	**0.00532**	NA	**0.0105**	NA	NA	0.00202 J	**0.00636**	NA	0.00221 J	**0.00586**
Zinc	mg/L	<0.002	**0.0171**	0.00219 J	**0.0658**	**0.0171**	**0.0296**	**0.00496**	**0.0221**	**0.00654**	**0.0445**	0.00299 J	**0.0118**	**0.0119**	<0.002	**0.00505**
Anions/Water Quality Parameters																
Bicarbonate Alkalinity	mg/L	**162**	**147**	**116**	**144**	**148**	**99.4**	**163**	**188**	**107**	**142**	**146**	**107**	**144**	**149**	**130**
Bromide	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Carbonate Alkalinity	mg/L	<5	<5	<5	<5	<5	**14.0**	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloride	mg/L	**253**	**333**	**975**	**251**	**333**	**1,010**	**95.8**	**117**	**47**	**257**	**327**	**972**	**248**	**328**	**984**
Sulfate	mg/L	**95.1**	**85.7**	**101**	**96.2**	**84.9**	**105**	**16.5**	**13.3**	**133**	**96.5**	**84.9**	**103**	**95.9**	**84.7**	**101**
Total Dissolved Solids (TDS)	mg/L	**712**	**832**	**1,890**	**748**	**836**	**1,770**	**290**	**416**	**412**	**712**	**802**	**2,210**	**732**	**928**	**2,160**
pH	SI	NA	7.95 H	8.01 H	NA	8.00 H	8.69 H	NA	8.09 H	NA	NA	8.07 H	8.15 H	NA	7.84 H	7.74 H
Sulfides																
Hydrogen Sulfide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**23.9**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	<1	<1.7	<1.7	<1	<1.7	<1.7	<1	<1.7	<1	<1	<1.7	<1.7	<1	<1.7	<1.7
Volatile Organic Compounds																
Benzene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
TPH Fractions																
Aliphatics >C6-C8	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	mg/L	<0.01	<0.01	**0.0118**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.0123**	<0.01	<0.01	<0.01
Aliphatics >C10-C12	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	<0.008	<0.008	<0.008	<0.008	<0.008	**0.0334**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Aromatics >C8-C10	mg/L	**0.0103**	<0.01	<0.01	**0.0101**	<0.01	<0.01	<0.01	<0.01	<0.01	**0.0102**	<0.01	<0.01	**0.0101**	<0.01	<0.01
Aromatics >C10-C12	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	<0.009	<0.009	**0.0243**	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009

Notes

J - Estimated Value reported below the de

H - pH is received at the lab outside of ho

< - Not Detected at the reporting limit sho

Bolded values deteted in the sample.

Table 2

Surface Water Data Summary

Sulphur Dome

Calcasieu Parish, Louisiana

LDNR Sample No.		#18			#19		#21			#22			#23		
Sample ID		BS 18	BS-18	BS-18	BS 19	BS-19	No. 21	BS-21	BS-21	No. 22	BS-22	BS-22	No. 23	BS-23	BS-23
Sample Date		2/28/23	5/17/23	9/19/23	2/28/23	5/18/23	3/30/23	5/17/23	9/19/23	3/30/23	5/17/23	9/19/23	3/30/23	5/18/23	9/19/23
Sample Interval (ft)		Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Sampler		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	**Units**	**Bubble Site (Surface Water)**													
Total Metals															
Arsenic	mg/L	0.000916 J	0.00124 J	0.00195 J	**0.00355**	<0.0004	0.000855 J	0.00115 J	0.00184 J	0.000998 J	0.00120 J	0.00186 J	0.000930 J	0.00126 J	**0.00250**
Barium	mg/L	**0.125**	**0.183**	**0.450**	**0.127**	**0.149**	**0.116**	**0.163**	**0.400**	**0.135**	**0.175**	**0.496**	**0.132**	**0.18**	**0.460**
Cadmium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	mg/L	**68.6**	**70.1**	**86.2**	**62**	**19.8**	**78.4**	**65.5**	**77.7**	**89.2**	**71.9**	**78.8**	**84.1**	**73.1**	**85.9**
Chromium	mg/L	<0.0004	0.000762 J	<0.0004	<0.0004	0.000530 J	<0.0004	0.000779 J	<0.0004	<0.0004	0.000811 J	<0.0004	<0.0004	0.000789 J	<0.0004
Iron	mg/L	0.0686 J	0.0526 J	0.0298 J	0.102 J	**2.43**	0.0273 J	0.0315 J	0.0291 J	0.0375 J	0.0302 J	**0.330**	0.0270 J	0.0654 J	0.0343 J
Lead	mg/L	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Magnesium	mg/L	**12**	**14**	**32.9**	**4.36**	**6.72**	**13.9**	**13.1**	**29.2**	**15.9**	**14.4**	**29.2**	**14.8**	**13.7**	**32.5**
Manganese	mg/L	**1.03**	**1.43**	**0.484**	**0.24**	**0.314**	**0.445**	**0.99**	**0.540**	**0.43**	**1.04**	**1.03**	**0.379**	**1.08**	**0.696**
Mercury	mg/L	<0.00003	0.0000970 J	<0.00003	<0.00003	**0.000407**	<0.00003	0.000151 J	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	0.000124 J	<0.00003
Nickel	mg/L	NA	0.00144 J	0.00102 J	NA	<0.0006	NA	0.00143 J	0.000935 J	NA	0.00142 J	0.00103 J	NA	0.00147 J	0.00119 J
Potassium	mg/L	**2.42**	**2.35**	**4.66**	**0.962**	**3.03**	**2.15**	**2.21**	**4.16**	**2.45**	**2.37**	**4.30**	**2.33**	**2.51**	**5.03**
Selenium	mg/L	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Silver	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium	mg/L	**143**	**189**	**594**	**71.2**	**58.3**	**186**	**169**	**570**	**211**	**195**	**534**	**205**	**175**	**586**
Strontium	mg/L	**0.452**	**0.536**	**0.975**	**0.338**	**0.17**	**0.495**	**0.501**	**0.898**	**0.559**	**0.545**	**0.919**	**0.542**	**0.546**	**0.937**
Vanadium		NA	0.00207 J	**0.00646**	NA	<0.0006	NA	0.00184 J	0.00473 J	NA	0.00197 J	**0.00528**	NA	0.00167 J	**0.00711**
Zinc	mg/L	<0.002	**0.00659**	<0.002	**0.00535**	**0.132**	<0.002	**0.0657**	0.00372 J	**0.00431**	**0.0368**	**0.00635**	0.00291 J	**0.0588**	0.00284 J
Anions/Water Quality Parameters															
Bicarbonate Alkalinity	mg/L	**148**	**146**	**106**	**240**	**159**	**162**	**147**	**106**	**162**	**148**	**124**	**162**	**148**	**120**
Bromide	mg/L	<0.03	<0.03	<0.03	<0.03	**0.144**	<0.03	<0.03	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Carbonate Alkalinity	mg/L	<5	<5	**17.6**	<5	<5	<5	<5	**13.2**	<5	<5	<5	<5	<5	<5
Chloride	mg/L	**248**	**331**	**971**	**98.4**	**30.1**	**342**	**334**	**921**	**343**	**330**	**999**	**346**	**312**	**960**
Sulfate	mg/L	**95.9**	**83.8**	**102**	**6.72**	**7.5**	**93.9**	**83.6**	**100**	**94.1**	**83.7**	**105**	**94**	**89.1**	**99.3**
Total Dissolved Solids (TDS)	mg/L	**706**	**748**	**1,950**	**408**	**286**	**872**	**776**	**2,000**	**812**	**812**	**2,300**	**844**	**1,540**	**1,810**
pH	SI	NA	7.94 H	8.73 H	NA	8.03 H	7.74 H	7.88 H	8.62 H	7.70 H	7.98 H	8.02 H	7.58 H	7.79 H	7.94 H
Sulfides															
Hydrogen Sulfide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	<1	<1.7	<1.7	<1	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Volatile Organic Compounds															
Benzene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
TPH Fractions															
Aliphatics >C6-C8	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Aromatics >C8-C10	mg/L	**0.0101**	<0.01	<0.01	**0.0105**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >C10-C12	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	**0.0374**	<0.009	<0.009	**0.0366**

Notes

J - Estimated Value reported below the de

H - pH is received at the lab outside of ho

< - Not Detected at the reporting limit sho

Bolded values deteted in the sample.

Table 2

Surface Water Data Summary

Sulphur Dome

Calcasieu Parish, Louisiana

LDNR Sample No.		#24	#25	#26		WPB PPB No.7A	WPB PPB No.7B			#2		#20
Sample ID		BS 24	BS-25	BS-26	BS-26	Brine Well 7A BS	Brine Well 7B BS		BW-7B-BS	Culvert	Central Pond	No. 20
Sample Date		5/22/23	9/20/23	7/17/23	9/18/23	1/25/23	2/16/23	5/18/23	9/18/23	1/25/23	1/25/23	3/9/23
Sample Interval (ft)		Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Sampler		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	Units	Bubble Site (Surface Water)								Surface Water		
Total Metals												
Arsenic	mg/L	0.00124 J	**0.00215**	**0.00246**	0.00130 J	0.000767 J	0.0202 J	<0.0004	0.000799 J	0.00141 J	0.00192 J	0.00109 J
Barium	mg/L	**0.226**	**0.393**	**1.07**	**0.540**	**0.232**	**1.23**	**0.118**	**3.71**	**0.0832**	**0.146**	**0.43**
Cadmium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.01	<0.0002	0.000336 J	<0.0002	<0.0004	<0.0002
Calcium	mg/L	**71.8**	**83.7**	**11.5**	**9.70**	**24.5**	**141**	**23.8**	**65.6**	**58.2**	**149**	**8.98**
Chromium	mg/L	<0.0004	0.00101 J	0.00322 J	<0.0004	0.000474 J	0.114 J	0.00175 J	0.000523 J	0.00101 J	0.00458 J	<0.0004
Iron	mg/L	**0.327**	0.172 J	**1.06**	0.0902 J	0.0406 J	3.34 J	**0.98**	**1.43**	**0.207**	**2.07**	0.148 J
Lead	mg/L	<0.0006	<0.0006	**0.00946**	<0.0006	<0.0006	<0.03	**0.00245**	**0.00300**	<0.0006	<0.00120	<0.0006
Magnesium	mg/L	**12.5**	**33.5**	**1.90**	**1.70**	**1.54**	2.85 J	**1.73**	**1.78**	**5.44**	**37.8**	**1.6**
Manganese	mg/L	**0.574**	**0.557**	**0.516**	**0.0277**	**0.0215**	**0.509**	**0.161**	**0.211**	**0.00934**	**0.847**	**0.0163**
Mercury	mg/L	<0.00003	<0.00003	0.0000500 J	<0.00003	<0.00003	<0.00003	**0.000358**	<0.00003	<0.00003	<0.00003	<0.00003
Nickel	mg/L	0.000869 J	0.00115 J	**0.00271**	<0.0006	NA	NA	**0.00417**	**0.00268**	NA	NA	NA
Potassium	mg/L	**2.6**	**4.87**	**1.19**	**1.44**	**1.02**	1.78 J	**1.3**	**2.13**	**2.86**	**3.22**	**1.2**
Selenium	mg/L	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.055	<0.0011	0.00156 J	<0.0011	<0.0022	<0.0011
Silver	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.01	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002
Sodium	mg/L	**161**	**609**	**30.8**	**38.7**	**8.45**	**26,400**	**1,390**	**27,400**	**158**	**1080**	**27.5**
Strontium	mg/L	**0.519**	**1.01**	**0.174**	**0.161**	**0.167**	**0.678**	**0.16**	**0.683**	**0.341**	**0.941**	**0.134**
Vanadium		0.00246 J	**0.00687**	0.00483 J	0.00160 J	NA	NA	0.00113 J	<0.0006	NA	NA	NA
Zinc	mg/L	0.00278 J	0.00256 J	**0.0638**	<0.002	**0.0466**	**1.97**	**0.451**	**0.291**	**0.0153**	**0.0258**	<0.002
Anions/Water Quality Parameters												
Bicarbonate Alkalinity	mg/L	**176**	**104**	**48.8**	**44.4**	**159**	**128**	**78.4**	**241**	**210**	**495**	**37.4**
Bromide	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<1.5	<0.06	<1.5	<0.03	<0.06	<0.03
Carbonate Alkalinity	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloride	mg/L	**314**	**620**	**35.9**	**37.8**	**6.45**	**55,900**	**2,400**	**48,000**	**215**	**2090**	**32**
Sulfate	mg/L	**79.9**	**96.2**	**16.1**	**16.6**	**2.97**	**243**	**14.2**	**155**	**92.1**	**183**	**17.2**
Total Dissolved Solids (TDS)	mg/L	**840**	**2,280**	**180**	**120**	**320**	**97,400**	**4,840**	**67,200**	**498**	**3600**	**148**
pH	SI	7.58 H	8.37 H	7.38 H	7.05 H	NA	NA	7.65 H	7.93 H	NA	NA	NA
Sulfides												
Hydrogen Sulfide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulfide	mg/L	<1.7	<1.7	<1.7	<1.7	<1	<1	<1.7	<1.7	<1	<1	<1.7
Volatile Organic Compounds												
Benzene	mg/L	0.74 J	<0.0002	<0.0002	<0.0002	0.00034 J	0.75 J	<0.0002	0.00080 J	<0.0002	<0.0002	<0.0002
Ethylbenzene	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	**0.00180**	**2.3**	<0.0003	0.00086 J	<0.0003	<0.0003	<0.0003
Toluene	mg/L	**1.1**	<0.0002	0.00051 J	<0.0002	0.00055 J	0.73 J	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
m,p-Xylene	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0020 J	**3**	<0.0005	0.0013 J	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	**2**	<0.0003	**0.001**	<0.0003	<0.0003	<0.0003
Xylenes, Total	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	**0.00200**	**5**	<0.0003	**0.0024**	<0.0003	<0.0003	<0.0003
TPH Fractions												
Aliphatics >C6-C8	mg/L	**0.0758**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics >C12-C16	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatics >C16-C35	mg/L	<0.008	<0.008	<0.008	**0.0405**	<0.008	**0.239**	<0.008	**0.137**	<0.008	<0.008	<0.008
Aromatics >C8-C10	mg/L	<0.01	<0.01	<0.01	<0.01	**0.0285**	**0.0192**	<0.01	<0.01	<0.01	<0.01	**0.012**
Aromatics >C10-C12	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	**0.00551**	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatics >C12-C16	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	**0.0225**	<0.004	<0.004	<0.004	<0.004	<0.004
Aromatics >C16-C21	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	**0.0188**	<0.003	<0.003	<0.003	<0.003	<0.003
Aromatics >C21-C35	mg/L	<0.009	<0.009	<0.009	<0.009	<0.009	**0.079**	<0.009	<0.009	<0.009	<0.009	<0.009

Notes

J - Estimated Value reported below the de

H - pH is received at the lab outside of ho

< - Not Detected at the reporting limit sho

Bolded values deteted in the sample.

Table 3
Central Lake Water Column Profile
Sulphur Dome
Calcasieu Parish, Louisiana

1/30/2023	LDNR #4 (water depth 2.55 ft)				
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
0.5	6.14	1317	31	17.5	NR
2.55	6.3	1321	-4	17.1	NR

5/22/2023	LDNR #5 (water depth 5.0 ft)				
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
0	6.95	1509	59	30.1	1058
1	6.95	1513	69	30.1	1058
2	6.96	1515	77	30	1057
3	6.94	1513	83	29.7	1059
4	6.96	1513	84	29.6	1057
5	6.77	1522	-64	28.7	1065

6/15/2023	13:55	Water Column Station (water depth 5.2 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.55	1665	113	34.3	1238
3	7.02	1671	137	34.7	1241
5	7.52	1692	39	33.7	1254

6/16/2023	12:58	Water Column Station (water depth 5.2 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.67	1792	205	33.5	1256
3	7.70	1786	174	33.3	1254
5	7.30	1902	-240	33.4	1352

6/23/2023	8:13	Water Column Station (water depth 5.2 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.53	NR	165	27.7	NR
3	7.56	NR	155	291	1291
5	7.54	1814	-186	29.8	1282

6/30/2023	13:40	Water Column Station (water depth 5.15 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.60	1883	64	36.1	1322
3	7.50	1878	84	34.8	1325
5	7.50	1876	94	35.0	1320

7/7/2023	8:45	Water Column Station (water depth 5.0 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.60	1910	103	29.3	1355
3	7.61	1951	107	29.6	1389
5	7.59	1916	113	29.7	1364

7/14/2023	13:00	Water Column Station (water depth 5.0 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.85	NR	161	35.2	NR
3	7.65	2032	148	34.2	1449
5	7.59	1962	140	331	1529

Table 3
Central Lake Water Column Profile
Sulphur Dome
Calcasieu Parish, Louisiana

7/21/2023	9:10	Water Column Station (water depth 4.8 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.72	2123	168	31.6	1515
3	7.67	2117	162	31.7	1514
5	7.70	2104	155	31.4	1509

7/28/2023	7:15	Water Column Station (water depth 5.8 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.66	2238	168	29.3	1609
3	7.61	2106	165	29.9	1513
5	7.48	2185	151	29.5	1568

8/4/2023	9:25	Water Column Station (water depth 5.6 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.62	2328	161	32.4	1678
3	7.56	2317	149	32.5	1669
5	7.47	2317	79	32.6	1670

8/11/2023	7:30	Water Column Station (water depth 5.45 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.64	2648	101	29.7	1935
3	7.75	2588	18	30.6	1888
5	7.58	2593	-147	31.1	1885

8/18/2023	7:30	Water Column Station (water depth 5.25 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.71	2871	141	28.9	2116
3	7.58	2813	103	30.1	2067
5	7.54	2747	-48	30.3	2023

8/25/2023	9:00	Water Column Station (water depth 4.1 ft.)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	7.71	3071	149	29.6	2253
3	7.69	3034	121	30.3	2215
5	7.58	3038	-8	30.2	2219

9/1/2023	10:00	Water Column Station (water depth NR)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	8.06	3233	34	31.1	2371
3	8.10	3203	25	29.4	2357
5	7.62	3216	-13	29.6	2366

9/8/2023	7:45	Water Column Station (water depth NR)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	8.06	3373	109	28.9	2486
3	8.16	3337	87	30.1	2458
5	7.87	3341	-32	30.4	2457

Table 3
Central Lake Water Column Profile
Sulphur Dome
Calcasieu Parish, Louisiana

9/15/2023	7:20	Water Column Station (water depth NR)			
Depth (ft)	pH	SC (uS/cm)	ORP (mV)	Temp (°C)	TDS (ppm)
1	8.04	3554	149	25	2650
3	7.96	3416	144	26.2	2545
5	7.55	3426	-81	26.2	2549

Notes:
Readings were recorded with an Ultrameter II, hand-held meter
NR - Not Recorded

Table 4

Gas Data Summary

Sulphur Dome

Calcasieu Parish, Louisiana

Sample Location		LDNR #1			LDNR #3			LDNR #4			LDNR #5			LDNR #6		
Sample ID		Brine Well 22 BS			CP BS 1			CP BS 2			CP BS 3			BS 06		
Sample Date		1/25/23	5/18/23	9/20/23*	1/30/23	5/22/23*	9/18/23*	1/30/23	5/22/23*	9/20/23*	1/30/23	5/17/23	9/20/23*	2/28/23	5/18/23	9/20/23
Sampler		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Component	**Units**	Surface Water (Bubble Site)														
Carbon Monoxide	mol%	ND	0.18	ND	ND	ND	ND	ND	ND	ND	ND	0.099	ND	ND	0.22	0.093
Helium	mol%	NA	NA	**0.0053**	NA	ND	ND	NA	ND	ND	NA	NA	ND	NA	NA	NA
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Argon	mol%	**1.35**	**1.31**	**0.0612**	**1.04**	**0.0448**	**0.917**	**0.905**	**0.0360**	**0.550**	**1.54**	**1.12**	**0.540**	**1.68**	**1.63**	**1.06**
Oxygen	mol%	**0.47**	**17.47**	**0.96**	**8.91**	**0.086**	**20.38**	**15.5**	**0.16**	**8.93**	**21.68**	**15.89**	**11.11**	**21.86**	**21.22**	**23.75**
Nitrogen	mol%	**61.78**	**64.5**	**4.41**	**45.65**	**2.11**	**77.1**	**65.33**	**1.87**	**41.87**	**69.85**	**73.83**	**40.07**	**72.96**	**72.30**	**73.08**
Carbon Dioxide	mol%	**7.47**	**6.37**	**2.57**	**3.58**	**2.14**	**0.089**	**1.29**	**1.56**	**1.55**	**2.47**	**2.79**	**0.52**	**3.22**	**4.39**	**0.15**
Methane	mol%	**28.45**	**10.00**	**89.73**	**40.41**	**94.46**	**1.49**	**16.69**	**94.48**	**46.17**	**4.39**	**6.20**	**46.82**	**0.278**	**0.234**	**1.84**
Ethane	mol%	**0.287**	**0.110**	**1.50**	**0.261**	**0.673**	**0.0108**	**0.209**	**1.30**	**0.64**	**0.0472**	**0.0488**	**0.579**	**0.0042**	**0.0014**	**0.0112**
Ethylene	mol%	ND	ND	**0.0006**	**0.0097**	**0.0286**	**0.003**	**0.0067**	**0.0540**	**0.0223**	**0.0022**	**0.0042**	**0.0874**	ND	ND	**0.0007**
Propane	mol%	**0.0926**	**0.0412**	**0.414**	**0.0702**	**0.198**	**0.0036**	**0.0445**	**0.294**	**0.144**	**0.0128**	**0.0120**	**0.1590**	ND	**0.0014**	**0.0041**
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	**0.0216**	**0.0070**	**0.0977**	**0.0259**	**0.0751**	**0.0013**	**0.0115**	**0.0819**	**0.0408**	**0.0033**	**0.0030**	**0.0406**	ND	ND	**0.0014**
N-butane	mol%	**0.0216**	**0.0070**	**0.106**	**0.0189**	**0.0647**	**0.0016**	**0.0091**	**0.0757**	**0.0372**	**0.0028**	**0.0021**	**0.0387**	ND	ND	**0.001**
Iso-pentane	mol%	**0.0083**	**0.0017**	**0.0410**	**0.0083**	**0.0356**	**0.0009**	**0.0032**	**0.0318**	**0.0158**	**0.0006**	**0.0006**	**0.0133**	ND	ND	**0.0003**
N-pentane	mol%	**0.0055**	**0.0012**	**0.0308**	**0.0051**	**0.0262**	**0.0008**	**0.0019**	**0.0220**	**0.0111**	ND	ND	**0.0092**	ND	ND	ND
Hexanes +	mol%	**0.0449**	**0.0064**	**0.0685**	**0.0083**	**0.0548**	**0.0020**	**0.0029**	**0.0341**	**0.0173**	**0.0039**	**0.0009**	**0.0148**	**0.0012**	**0.0028**	**0.0018**
Methane Stable Isotopes																
$\delta^{13}C$	‰	**-33.03**	**-24.86**	**-39.25**	**-34.2**	**-34.66**	**-31.24**	**-38.37**	**-38.5**	**-37.03**	**-35.45**	**-39.21**	**-37.16**	NA	NA	**-34.8**
δD	‰	**-129.6**	**-81.1**	**-158.6**	**-147.2**	**-141.0**	**-138.7**	**-160.5**	**-151.3**	**-145.0**	**-143**	**-159.8**	**-147.9**	NA	NA	**-144**

Notes:

Bolded values deteted in the sample.

ND - Not Detected

NA - Not Analyzed (insufficient volume)

* - Gas sample (not dissolved gas)

Table 4
Gas Data Summary
Sulphur Dome
Calcasieu Parish, Louisiana

	Sample Location	LDNR #7			LDNR #8			LDNR #9		LDNR #10			LDNR #12		
	Sample ID	BS 07			BS 08			Brine Pond 4		110159-BS			BS 12		
	Sample Date	2/28/23	5/17/23	9/20/23	2/28/23	5/18/23	9/20/23	2/10/23	5/18/23	2/10/23	5/22/23*	9/20/23*	2/28/23	5/18/23	9/20/23
	Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Component	**Units**	Surface Water (Bubble Site)													
Carbon Monoxide	mol%	ND	0.31	0.15	ND	0.33	0.16	0.034	0.26	ND	ND	ND	ND	0.23	0.13
Helium	mol%	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Argon	mol%	**1.66**	**1.64**	**1.2**	**1.31**	**1.71**	**1.19**	**1.14**	**1.50**	**0.837**	**0.970**	**0.910**	**1.62**	**1.68**	**1.12**
Oxygen	mol%	**22.94**	**17.64**	**24.65**	**16.43**	**12.99**	**27.26**	**22.32**	**30.16**	**14.68**	**21.72**	**16.81**	**19.99**	**20.99**	**24.67**
Nitrogen	mol%	**71.73**	**73.45**	**73.16**	**57.26**	**75.89**	**71.03**	**75.05**	**63.88**	**59.75**	**77.00**	**75.02**	**70.00**	**72.41**	**73.77**
Carbon Dioxide	mol%	**3.27**	**6.46**	**0.4**	**2.88**	**7.63**	**0.28**	**0.61**	**2.70**	**1.04**	**0.062**	**1.69**	**3.51**	**4.56**	**0.24**
Methane	mol%	**0.398**	**0.493**	**0.427**	**21.89**	**1.44**	**0.0769**	**0.845**	**1.49**	**23.55**	**0.247**	**5.56**	**4.72**	**0.122**	**0.065**
Ethane	mol%	**0.0050**	**0.0057**	**0.0100**	**0.146**	**0.0040**	**0.0020**	**0.0022**	**0.0032**	**0.12**	**0.0004**	**0.0030**	**0.138**	**0.0014**	**0.0015**
Ethylene	mol%	ND	ND	ND	**0.0044**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propane	mol%	**0.0006**	ND	**0.0013**	**0.0482**	**0.0008**	**0.0007**	**0.0004**	ND	**0.0084**	ND	**0.0004**	**0.0108**	**0.0007**	**0.0004**
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	ND	ND	**0.0158**	ND	ND	ND	ND	**0.0112**	ND	**0.0009**	**0.0025**	ND	ND
N-butane	mol%	ND	ND	ND	**0.0108**	ND	ND	ND	ND	ND	ND	**0.0002**	**0.0019**	ND	ND
Iso-pentane	mol%	ND	ND	ND	**0.0034**	ND	ND	ND	ND	**0.0019**	ND	**0.0002**	ND	ND	ND
N-pentane	mol%	ND	ND	ND	**0.0015**	ND	ND	ND	ND	ND	ND	**0.0001**	ND	ND	ND
Hexanes +	mol%	**0.0013**	**0.0041**	**0.0024**	**0.0030**	**0.0040**	**0.0031**	**0.0007**	**0.0040**	**0.0012**	**0.0001**	**0.0006**	**0.0038**	**0.0058**	**0.0023**
Methane Stable Isotopes															
$\delta^{13}C$	‰	**-36.7**	**-48.9**	**-39.5**	**-34.96**	**-60.3**	NA	**-33.1**	**-38.9**	**-35.63**	**-25.78**	**-22.20**	**-44.36**	NA	NA
δD	‰	NA	NA	NA	**-143.1**	NA	NA	**-81**	NA	**-151.4**	**-107**	**-103.2**	**-181**	NA	NA

Notes:
Bolded values deteted in the sample.
ND - Not Detected
NA - Not Analyzed (insufficient volume)
* - Gas sample (not dissolved gas)

Table 4
Gas Data Summary
Sulphur Dome
Calcasieu Parish, Louisiana

	Sample Location	LDNR #17			LDNR #18			LDNR #19		LDNR #21			LDNR #22		
	Sample ID	BS 17			BS 18			BS 19		No. 21			No. 22		
	Sample Date	2/28/23	5/17/23	9/20/23	2/28/23	5/17/23	9/20/23	2/28/23	5/18/23	3/30/23	5/17/23	9/20/23	3/30/23	5/17/23	9/20/23
	Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Component	**Units**	Surface Water (Bubble Site)													
Carbon Monoxide	mol%	ND	0.17	**0.3**	ND	0.066	0.27	ND	0.26	0.11	0.25	0.12	0.098	0.11	0.3
Helium	mol%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Argon	mol%	**1.69**	**1.57**	**1.13**	**1.21**	**1.09**	**1.28**	**0.976**	**1.50**	**1.29**	**1.61**	**1.09**	**1.43**	**1.25**	**1.33**
Oxygen	mol%	**16.22**	**17.08**	**31.25**	**14.38**	**16.45**	**34.44**	**29.18**	**28.03**	**20.65**	**18.44**	**26.85**	**20.90**	**16.79**	**32.90**
Nitrogen	mol%	**74.92**	**66.25**	**50.78**	**52.67**	**79.94**	**61.19**	**43.27**	**63.87**	**75.31**	**73.33**	**69.78**	**71.96**	**79.02**	**62.91**
Carbon Dioxide	mol%	**5.42**	**7.42**	**0.7**	**3.08**	**1.67**	**0.3**	**2.83**	**2.92**	**1.77**	**5.64**	**0.16**	**2.40**	**2.54**	**0.47**
Methane	mol%	**1.73**	**7.42**	**15.57**	**28.32**	**0.784**	**2.49**	**23.62**	**3.40**	**0.860**	**0.721**	**1.970**	**3.16**	**0.288**	**2.06**
Ethane	mol%	**0.0148**	**0.0714**	**0.225**	**0.240**	**0.0028**	**0.0208**	**0.106**	**0.0130**	**0.0080**	**0.0015**	**0.0194**	**0.410**	**0.0010**	**0.0253**
Ethylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0005**	ND	ND
Propane	mol%	**0.0021**	**0.0090**	**0.0279**	**0.0616**	**0.0007**	**0.0052**	**0.093**	**0.0007**	**0.0011**	**0.0008**	**0.0032**	**0.0064**	**0.0003**	**0.0045**
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	**0.0025**	**0.0071**	**0.176**	**0.0002**	**0.0015**	**0.0034**	ND	**0.0004**	ND	**0.001**	**0.0015**	ND	**0.0012**
N-butane	mol%	ND	**0.0016**	**0.0049**	**0.132**	ND	**0.0012**	ND	ND	ND	ND	**0.0005**	**0.0010**	ND	**0.0010**
Iso-pentane	mol%	ND	ND	**0.0015**	**0.0044**	ND	ND	**0.0004**	ND	ND	ND	ND	ND	ND	ND
N-pentane	mol%	ND	ND	**0.0009**	**0.0024**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexanes +	mol%	**0.0028**	**0.0025**	**0.0052**	**0.0044**	**0.0006**	**0.0045**	**0.0021**	**0.0036**	**0.0018**	**0.0031**	**0.0017**	**0.0020**	**0.0010**	**0.0073**
Methane Stable Isotopes															
$\delta^{13}C$	‰	**-44.2**	**-39.07**	**-40.39**	**-36.62**	**-46.8**	**-37.5**	**-32.77**	**-36.1**	**-36.2**	**-48.0**	**-38.0**	**-38.40**	**-44.40**	**-37.00**
δD	‰	**-175**	**-179**	**-161.9**	**-154.9**	**-200**	**-145**	**-109.4**	**-139**	**-122**	NA	**150**	**-156**	NA	NA

Notes:
Bolded values deteted in the sample.
ND - Not Detected
NA - Not Analyzed (insufficient volume)
* - Gas sample (not dissolved gas)

Table 4

Gas Data Summary

Sulphur Dome

Calcasieu Parish, Louisiana

Sample Location		LDNR #23			LDNR #24		LDNR #25	LDNR #26		WPB PGG No.7A			WPB PPB No.7B		
Sample ID		No. 23			BS-24		BS-25	BS-26		Brine Well 7A BS			Brine Well 7B-BS		
Sample Date		3/30/23	5/18/23	9/20/23	5/22/23*	9/20/23*	9/20/23	7/17/23	9/18/23	1/25/23	5/17/23*	9/20/23*	2/16/23	5/18/23	9/18/23
Sampler		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Component	**Units**	Surface Water (Bubble Site)													
Carbon Monoxide	mol%	0.040	0.25	0.24	ND	ND	**0.2**	ND	0.063	ND	ND	ND	ND	ND	ND
Helium	mol%	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Argon	mol%	**1.09**	**1.68**	**1.4**	**0.0271**	**0.210**	**1.3**	**1.46**	**1.29**	**0.744**	**0.823**	**0.754**	**0.955**	**1.58**	**0.969**
Oxygen	mol%	**21.18**	**14.37**	**30.67**	**0.13**	**4.05**	**28.32**	**18.56**	**17.19**	**16.39**	**18.25**	**15.34**	**19.64**	**25.16**	**19.27**
Nitrogen	mol%	**76.89**	**74.50**	**65.61**	**1.37**	**16.04**	**69.58**	**66.42**	**75.71**	**41.21**	**66.37**	**61.16**	**76.59**	**68.50**	**79.45**
Carbon Dioxide	mol%	**0.69**	**6.71**	**0.45**	**2.26**	**2.35**	**0.4**	**7.87**	**3.62**	**0.29**	**0.07**	**0.39**	**0.51**	**1.69**	**0.3**
Methane	mol%	**0.105**	**2.47**	**1.61**	**94.64**	**76.08**	**0.195**	**5.68**	**2.12**	**40.83**	**14.3**	**22.05**	**2.26**	**3.00**	**0.0036**
Ethane	mol%	**0.0013**	**0.0124**	**0.0131**	**0.884**	**0.729**	**0.0027**	**0.0076**	**0.0116**	**0.397**	**0.132**	**0.216**	**0.0333**	**0.0427**	**0.0001**
Ethylene	mol%	ND	ND	ND	**0.150**	**0.110**	ND	ND	ND	**0.0013**	**0.0001**	ND	**0.0011**	ND	ND
Propane	mol%	**0.0002**	**0.0044**	**0.0036**	**0.270**	**0.214**	ND	ND	**0.0009**	**0.099**	**0.0372**	**0.0607**	**0.0085**	**0.0192**	**0.0013**
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	**0.0015**	**0.0011**	**0.0828**	**0.0663**	ND	ND	**0.0006**	**0.0286**	**0.013**	**0.0207**	**0.0011**	**0.0043**	**0.0007**
N-butane	mol%	ND	**0.0007**	**0.0008**	**0.0784**	**0.0623**	ND	ND	ND	**0.0106**	**0.005**	**0.0080**	**0.0024**	**0.0043**	**0.0012**
Iso-pentane	mol%	ND	ND	ND	**0.0347**	**0.0282**	ND	ND	ND	**0.013**	**0.0011**	**0.0018**	**0.0005**	ND	**0.0003**
N-pentane	mol%	ND	ND	ND	**0.0259**	**0.0214**	ND	ND	ND	ND	**0.0003**	**0.0005**	**0.0004**	ND	**0.0002**
Hexanes +	mol%	**0.0007**	**0.0037**	**0.0038**	**0.0460**	**0.0378**	**0.0038**	**0.0025**	**0.0027**	**0.003**	**0.0022**	**0.0018**	**0.001**	**0.0028**	**0.0009**
Methane Stable Isotopes															
$\delta^{13}C$	‰	**-34.0**	**-33.0**	**-37.6**	**-35.9**	**-35.5**	NA	**-48.7**	**-40.8**	**-35.6**	**-34.94**	**-33.32**	**-46.02**	**-38.2**	NA
δD	‰	NA	**-99**	NA	**-146.8**	**-145.7**	NA	**-242**	**-157**	**-150.3**	**-144.2**	**-141.4**	**-183.6**	**-117**	NA

Notes:

Bolded values deteted in the sample.

ND - Not Detected

NA - Not Analyzed (insufficient volume)

* - Gas sample (not dissolved gas)

Table 4
Gas Data Summary
Sulphur Dome
Calcasieu Parish, Louisiana

	Sample Location	Sulphur Dome	LDNR #20	WW #11						WW #13					
	Sample ID	Central Pond	No. 20	019-580						019-582					
	Sample Date	1/25/23	3/9/23	1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	9/20/23	1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	9/20/23
	Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Component	**Units**	Surface Water		Water Well											
Carbon Monoxide	mol%	0.26	0.023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Helium	mol%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Argon	mol%	**1.98**	**1.01**	**1.64**	**1.17**	**1.66**	**1.76**	**1.48**	**1.66**	**1.76**	**1.27**	**1.61**	**1.27**	**1.56**	**1.72**
Oxygen	mol%	**0.41**	**22.40**	**5.59**	**14.38**	**9.66**	**11.60**	**17.51**	**6.23**	**5.03**	**13.10**	**8.07**	**4.94**	**16.60**	**3.50**
Nitrogen	mol%	**84.79**	**76.38**	**79.08**	**80.66**	**76.17**	**72.37**	**73.84**	**80.38**	**82.36**	**80.92**	**80.13**	**88.21**	**73.36**	**79.67**
Carbon Dioxide	mol%	**12.25**	**0.16**	**13.23**	**3.75**	**11.99**	**14.23**	**7.13**	**11.3**	**10.83**	**4.66**	**9.64**	**5.26**	**8.46**	**13.9**
Methane	mol%	**0.302**	**0.0245**	**0.456**	**0.0421**	**0.517**	**0.0348**	**0.0321**	**0.433**	**0.0186**	**0.0516**	**0.547**	**0.313**	**0.0154**	**1.21**
Ethane	mol%	**0.0015**	ND	ND	ND	**0.0007**	ND	**0.0005**	ND	ND	ND	**0.0022**	**0.0012**	ND	**0.0029**
Ethylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexanes +	mol%	**0.0037**	**0.005**	**0.0042**	**0.0008**	**0.0039**	**0.0030**	**0.0041**	**0.0031**	**0.0018**	**0.0007**	**0.0027**	**0.0012**	**0.0023**	**0.0034**
Methane Stable Isotopes															
$\delta^{13}C$	‰	NA	NA	**-56.4**	NA	**-59.6**	NA	NA	**-56.2**	NA	NA	**-62.3**	NA	NA	**-57.9**
δD	‰	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Bolded values deteted in the sample.
ND - Not Detected
NA - Not Analyzed (insufficient volume)
* - Gas sample (not dissolved gas)

Table 4
Gas Data Summary
Sulphur Dome
Calcasieu Parish, Louisiana

Sample Location		WW #12					WW #19						WW #40			
Sample ID		019-995					019-1055						019-1603			
Sample Date		1/26/23	3/30/23	4/27/23	5/22/23	6/16/23	1/26/23	3/30/23	4/27/23	5/18/23	6/16/23	9/20/23	3/30/23	5/18/23	6/16/23	9/19/23
Sampler		ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Component	**Units**	Water Well														
Carbon Monoxide	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Helium	mol%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Argon	mol%	**1.75**	**1.29**	**1.61**	**1.77**	**1.60**	**1.39**	**1.23**	**1.68**	**1.64**	**1.55**	**1.66**	**1.26**	**1.57**	**1.56**	**1.12**
Oxygen	mol%	**6.3**	**11.66**	**11.53**	**10.41**	**14.54**	**9.78**	**13.74**	**9.15**	**11.70**	**15.55**	**4.65**	**11.67**	**10.06**	**13.05**	**15.46**
Nitrogen	mol%	**80.84**	**81.99**	**77.35**	**76.58**	**75.78**	**82**	**80.18**	**78.32**	**76.17**	**75.03**	**77.74**	**82.50**	**73.32**	**82.13**	**78.53**
Carbon Dioxide	mol%	**10.81**	**4.83**	**9.19**	**10.71**	**8.00**	**6.53**	**4.67**	**10.43**	**10.09**	**7.82**	**15.52**	**3.77**	**4.67**	**3.25**	**4.25**
Methane	mol%	**0.294**	**0.231**	**0.313**	**0.532**	**0.0701**	**0.3**	**0.180**	**0.411**	**0.396**	**0.049**	**0.423**	**0.802**	**10.37**	**0.0095**	**0.641**
Ethane	mol%	ND	**0.0005**	ND	ND	**0.0016**	**0.0013**	**0.0007**	**0.0017**	**0.0021**	**0.0005**	**0.0021**	**0.0009**	**0.0075**	ND	**0.0014**
Ethylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propane	mol%	ND	ND	ND	ND	**0.0005**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-butane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iso-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-pentane	mol%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexanes +	mol%	**0.0019**	**0.0018**	**0.0034**	**0.0020**	**0.0032**	**0.002**	**0.0015**	**0.0034**	**0.0021**	**0.0021**	**0.0036**	**0.0013**	**0.0035**	**0.0010**	**0.0012**
Methane Stable Isotopes																
$\delta^{13}C$	‰	NA	**-56.6**	**-68.7**	**-78.7**	NA	**-53.9**	**-53.5**	**-52.7**	**-51.3**	NA	**-52.8**	**-89.5**	**-57.53**	NA	**-60.3**
δD	‰	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**-282**	**-110.9**	NA	**-125**

Notes:
Bolded values deteted in the sample.
ND - Not Detected
NA - Not Analyzed (insufficient volume)
* - Gas sample (not dissolved gas)

Table 4
Gas Data Summary
Sulphur Dome
Calcasieu Parish, Louisiana

	Sample Location	Cottages Well					SN 57788	SN 32069		SN 37320	SN 209459	SN 189416	SN 246792
	Sample ID	019-17636Z					6X Brine	Brine Well 2		Cavern 4	Fee 1012	Fee 969	Fee 1026
	Sample Date	4/27/23	5/18/23	6/16/23	7/17/23	9/20/23	1/25/23	5/22/23*	9/18/23*	9/20/23*	1/25/23*	5/25/23*	5/25/23*
	Sampler	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Component	**Units**	Water Well					Brine				Oil Wells		
Carbon Monoxide	mol%	ND	ND	ND	ND	0.071	ND	ND	ND	ND	ND	ND	ND
Helium	mol%	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	**0.0089**	ND
Hydrogen	mol%	ND	ND	ND	ND	ND	ND	**0.0466**	**0.0483**	**0.0560**	**1.40**	**0.02**	**3.37**
Argon	mol%	**1.43**	**1.58**	**1.33**	**1.50**	**1.35**	**1.91**	**0.0341**	**0.0547**	**0.150**	**0.0086**	**0.0630**	**0.0125**
Oxygen	mol%	**20.30**	**17.31**	**18.77**	**16.60**	**10.78**	**0.74**	**0.21**	**0.64**	**0.88**	**0.015**	**0.13**	**0.24**
Nitrogen	mol%	**70.51**	**70.87**	**68.11**	**70.87**	**77.25**	**79.17**	**10.9**	**12.99**	**65.43**	**0.38**	**9.27**	**0.83**
Carbon Dioxide	mol%	**7.28**	**7.44**	**9.81**	**9.69**	**9.41**	**5.31**	**3.88**	**2.78**	**0.28**	**1.34**	ND	ND
Methane	mol%	**0.476**	**2.80**	**1.98**	**1.34**	**1.14**	**11.72**	**84.12**	**82.76**	**32.05**	**88.34**	**89.63**	**89.59**
Ethane	mol%	ND	ND	ND	ND	**0.0017**	**0.462**	**0.339**	**0.300**	**0.173**	**3.11**	**0.592**	**4.39**
Ethylene	mol%	ND	ND	ND	ND	ND	**0.0193**	ND	ND	ND	ND	**0.001**	**0.0002**
Propane	mol%	ND	ND	ND	ND	**0.0009**	**0.389**	**0.0587**	**0.0558**	**0.198**	**2.78**	**0.202**	**1.17**
Propylene	mol%	ND	ND	ND	ND	ND	**0.0006**	ND	ND	ND	ND	ND	ND
Iso-butane	mol%	ND	ND	ND	ND	ND	**0.0312**	**0.0321**	**0.0260**	**0.0719**	**0.701**	**0.0326**	**0.117**
N-butane	mol%	ND	ND	ND	ND	ND	**0.0893**	**0.123**	**0.0955**	**0.254**	**0.905**	**0.0381**	**0.135**
Iso-pentane	mol%	ND	ND	ND	ND	ND	**0.0162**	**0.0643**	**0.0548**	**0.1150**	**2.7**	**0.0072**	**0.0273**
N-pentane	mol%	ND	ND	ND	ND	ND	**0.0193**	**0.0837**	**0.0752**	**0.1520**	**0.191**	**0.0053**	**0.0789**
Hexanes +	mol%	**0.0015**	**0.0014**	**0.0030**	**0.0019**	**0.0026**	**0.12**	**0.105**	**0.117**	**0.191**	**0.562**	**0.0069**	**0.0948**
Methane Stable Isotopes													
$\delta^{13}C$	‰	**-76.1**	**-94.4**	**-93.2**	**-78.3**	**-80.2**	**-38.98**	**-34.64**	**-34.49**	**-34.15**	**-45.41**	**-53.33**	**-47.78**
δD	‰	NA	**-278**	**-265**	NA	NA	**-171.7**	**-144.9**	**-143.8**	**-140.8**	**-168.6**	**-174.4**	**-179.8**

Notes:
Bolded values deteted in the sample.
ND - Not Detected
NA - Not Analyzed (insufficient volume)
* - Gas sample (not dissolved gas)

Table 5

Oil Data Summary

Sulphur Dome

Calcalsieu Parish, Louisiana

		Cavern 7 Oil								Cavern 4 Oil
	Sample ID	**Westlake 7B**	**Westlake 7B**	**Westlake 7B**	**Westlake 7B**	**Westlake 7B**	**7B Oil**	**Cavern 7B**	**7B Oil**	**Cavern 4**
	Sample Date	5/11/22	6/14/22	8/16/22	11/2/22	1/18/23	3/30/23	5/25/23	6/16/23	5/25/23
	Location	Shore Tank @ Boardwalk Composite	Shore Tank @ Boardwalk Composite	Cavern 7	Cavern 7	Cavern 7	Cavern 7 frac tank	Cavern 7	Cavern 7	Cavern 4
	Sampler	Intertek	Intertek	Intertek	Intertek	Intertek	ERM	ERM	ERM	ERM
Constituent	**Units**									
Average API Gravity	°	**30.3**	**32.8**	**34.1**	**32.8**	**34.0**	**33.6**	**33.52**	**33.98**	**31.21**
Sulfur	**Wt %**	**1.48**	**1.3788**	**1.36**	**1.38**	**1.4**	**1.37**	**1.401**	**1.350**	**1.548**
Vanadium	**mg/kg**	**20.6**	**4.035**	**2.85**	**22.8**	**22.8**	**100**	**23**	**25**	**42**
Nickel	**mg/kg**	**26.2**	**1.401**	**0.986**	**6.11**	**5.88**	**26**	**6**	**6**	**9**
Iron	**mg/kg**	<0.1	**2.304**	**0.014**	**0.002**	**0**	**12**	<1	**1**	**4**
Salt	**lb/1000 bbl**	<1.0	**0.57**	**5**	<1.0	**2.1**	**18**	**5.0**	**10.6**	**10.4**
Organic Chloride	**mg/kg**	**5.1**	**4.5**	**6.9**	**4.8**	**2.5**	<1.0	<1.0	<1.0	<1.0
Total Chloride	**mg/kg**	**5.5**	**5.19**	**10.5**	**5.5**	**9.7**	NA	NA	NA	NA
Inorganic Chloride	**mg/kg**	**0.4**	**0.69**	**3.7**	**0.7**	**7.2**	NA	NA	NA	NA
Specific Gravity	°	NA	NA	NA	NA	NA	**0.8571**	**0.8575**	**0.8551**	**0.8696**
Density	**g/ml**	NA	NA	NA	NA	NA	**0.8562**	**0.8566**	**0.8542**	**0.8688**

Notes:

< Not detected at the reporting limit shown.

Bolded values detected in sample

NA - Not Analyzed

Table 5
Oil Data Summary
Sulphur Dome
Calcalsieu Parish, Louisiana

		Produced Oil												
	Sample ID	**Yellowrock 969**	**209459**		**185997**		**210185**	**Tank Battery**	**252112**	**109963**	**235998**	**41842**	**189416**	
	Sample Date	11/2/22	5/2/23	6/16/23	5/2/23	6/16/23	5/25/23	5/25/23	6/16/23	6/16/23	8/17/23	8/17/23	8/29/23	8/29/23
	Location	SN 189416 Well Sample	SN 209459 Well Sample	SN 209459 Well Sample	SN 185997 Well Sample	SN 185997 Well Sample	SN 210185 Well Sample	Tank Battery	SN 252112 Well Sample	SN 109963 Well Sample	SN 235998 Well Sample	SN 41842 Well Sample	SN 189416 1,250'	SN 189416 170'
	Sampler	Intertek	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM	ERM
Constituent	**Units**													
Average API Gravity	°	**26.0**	**22.81**	**21.56**	**21.53**	**22.96**	**22.79**	**26.95**	**29.72**	**24.05**	**16.88**	**26.55**	**20.65**	**20.8**
Sulfur	**Wt %**	**0.302**	**0.435**	**0.433**	**0.407**	**0.411**	**0.476**	**0.327**	**0.295**	**0.431**	**0.747**	**0.403**	**0.450**	**0.447**
Vanadium	**mg/kg**	**1.23**	**2**	**2**	**2**	**2**	**2**	**1**	**1**	**2**	**2.3**	**2**	<0.1	<0.1
Nickel	**mg/kg**	**7.04**	**8**	**9**	**9**	**10**	**10**	**6**	**5**	**8**	**9.6**	**22.2**	**10.9**	**8.3**
Iron	**mg/kg**	**6.57**	**13**	**6**	**6**	**7**	**59**	**15**	**11**	**17**	**11.7**	**16.3**	**204**	**179**
Salt	**lb/1000 bbl**	**363.36**	**1,290**	**9.2**	**1,015**	**138.0**	**9.8**	**32.0**	**74.0**	**54.0**	**9,850.0**	**10.6**	**232.0**	**88.0**
Organic Chloride	**mg/kg**	**89.0**	<1	<1	<1	<1	<1.0	<1.0	<1	<1	<1	<1	**9.0**	**6.2**
Total Chloride	**mg/kg**	**146.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganic Chloride	**mg/kg**	**57.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Specific Gravity	°	NA	**0.917**	**0.9245**	**0.9246**	**0.9161**	**0.9171**	**0.893**	**0.8887**	**0.9096**	**0.9536**	**0.8953**	**0.9300**	**0.9291**
Density	**g/ml**	NA	**0.9161**	**0.9235**	**0.9237**	**0.9152**	**0.9162**	**0.8921**	**0.8878**	**0.9087**	**0.9527**	**0.8944**	**0.9291**	**0.9282**

Notes:
< Not detected at the reporting limit shown.
Bolded values detected in sample
NA - Not Analyzed

Table 5
Oil Data Summary
Sulphur Dome
Calcalsieu Parish, Louisiana

		Stock Tank	
	Sample ID	**Pad Oil**	**Pad Oil**
	Sample Date	1/18/23	6/16/23
	Location	Pad Oil Pump Oil	Pad Oil Pump Oil
	Sampler	Intertek	ERM
Constituent	**Units**		
Average API Gravity	**°**	**29.1**	**29.27**
Sulfur	**Wt %**	**1.17**	**1.265**
Vanadium	**mg/kg**	**19**	**18**
Nickel	**mg/kg**	**4.94**	**5**
Iron	**mg/kg**	**24.5**	**29**
Salt	**lb/1000 bbl**	**46.7**	**258.0**
Organic Chloride	**mg/kg**	**63.7**	**2.1**
Total Chloride	**mg/kg**	**202.9**	NA
Inorganic Chloride	**mg/kg**	**139.2**	NA
Specific Gravity	**°**	NA	**0.8801**
Density	**g/ml**	NA	**0.8793**

Notes:
< Not detected at the reporting limit shown.
Bolded values detected in sample
NA - Not Analyzed

ATTACHMENT 1 LABORATORY REPORTS

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-23080858-001A

Scott Himes
ERM
840 W. Sam Houston Parkway North
Houston, TX 77024-4613

Sep. 18, 2023

Station Name: 253998
Method: ASTM D-86
Analyzed: 08/31/2023 00:00:00 by CMN

Sampled By: DS
Sample Of: Liquid Spot
Sample Date: 08/17/2023 10:30
Sample Conditions:

ASTM D-86 Distillation

% Recovery	°F @ 762 mm Hg
Initial Boiling Point	144
5	145
10	423
20	NR
30	NR
40	NR
50	NR
60	NR
70	NR
80	NR
85	NR
90	NR
95	NR
Final Boiling Point	437
Volume % Recovery	11.0
Volume % Residue	89.0
Volume % Loss	0.0

Comments: Temperatures are uncorrected for barometric pressure.
Visual color is Crude.
IBP to 400°F Naphtha Cut Mass Fraction = 0.1230

Michael Staley

Data reviewed by: Michael Staley, ASTM Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-23080858-001A

Scott Himes
ERM
840 W. Sam Houston Parkway North
Houston, TX 77024-4613

Sep. 18, 2023

Station Name: 253998
Sample Conditions:

Sampled By: DS
Sample Of: Liquid Spot
Sample Date: 08/17/2023 10:30

Analytical Data

Test	Method	Result	Units	Detection Limit	Lab Tech.	Analysis Date
Salt in Crude Oil	ASTM D-3230	9850.0	lbs/1000 bbls		MG	08/24/2023
Sulfur Content by X-ray	ASTM D-4294	0.747	wt%		MG	08/24/2023
Organic Chloride	ASTM D-4929	<1.0	ppmw		FSN	09/01/2023
API Gravity @ 60.01 °F	ASTM D-5002	16.88	°		MG	08/24/2023
Specific Gravity @ 60.01/60.01 °F	ASTM D-5002	0.9536	_		MG	08/24/2023
Density @ 60.01 °F	ASTM D-5002	0.9527	g/ml		MG	08/24/2023

Comments:
AS-D-4929: Sample analyzed by ASTM D-4929 procedure B.
Mass Fraction = 0.1230

Michael Staley

Data reviewed by: Michael Staley, ASTM Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

CERTIFICATE OF ANALYSIS

ERM
840 W. Sam Houston Parkway
North Suite 600
Houston TX, 77024
Attn: Scott Himes

Report Date: 9/15/2023
Laboratory ID: A230914021
Sample Type: Crude Oil
Sample Date 8/17/2023
Sample ID: 253998 23080858-001A

Tests Requested	Result	Units	Test Method
Iron	**11.7**	ppm	ASTM D5708A
Nickel	**9.6**	ppm	
Vanadium	**2.3**	ppm	

Report Prepared by,

Jaclyn Bazaldua, Lab Technician

Reviewed and Approved by,

Dillon Bagley, Lab Supervisor

1300 Corporate Drive E
Arlington, TX 76006
817-633-9119
817-633-9111 (fax)
info.finishedproducts@spl-inc.com
www.spl-inc.com

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-23080858-002A

Scott Himes
ERM
840 W. Sam Houston Parkway North
Houston, TX 77024-4613

Sep. 18, 2023

Station Name: 41842
Method: ASTM D-86
Analyzed: 08/24/2023 00:00:00 by MG

Sampled By: DS
Sample Of: Liquid Spot
Sample Date: 08/17/2023 10:50
Sample Conditions:

ASTM D-86 Distillation

% Recovery	°F @ 762 mm Hg
Initial Boiling Point	176
5	264
10	338
20	NR
30	NR
40	NR
50	NR
60	NR
70	NR
80	NR
85	NR
90	NR
95	NR
Final Boiling Point	400
Volume % Recovery	14.0
Volume % Residue	86.0
Volume % Loss	0.0

Comments: Temperatures are uncorrected for barometric pressure.
Visual color is Crude.
IBP to 400°F Naphtha Cut Mass Fraction = 0.1131

Michael Staley

Data reviewed by: Michael Staley, ASTM Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-23080858-002A

Scott Himes
ERM
840 W. Sam Houston Parkway North
Houston, TX 77024-4613

Sep. 18, 2023

Station Name: 41842
Sample Conditions:

Sampled By: DS
Sample Of: Liquid Spot
Sample Date: 08/17/2023 10:50

Analytical Data

Test	Method	Result	Units	Detection Limit	Lab Tech.	Analysis Date
Salt in Crude Oil	ASTM D-3230	10.6	lbs/1000 bbls		MG	08/24/2023
Sulfur Content by X-ray	ASTM D-4294	0.403	wt%		MG	08/24/2023
Organic Chloride	ASTM D-4929	<1.0	ppmw		FSN	09/01/2023
API Gravity @ 60.01 °F	ASTM D-5002	26.55	°		DKK	09/06/2023
Specific Gravity @ 60.01/60.01 °F	ASTM D-5002	0.8953	_		DKK	09/06/2023
Density @ 60.01 °F	ASTM D-5002	0.8944	g/ml		DKK	09/06/2023

Comments:
AS-D-4929: Sample analyzed by ASTM D-4929 procedure B.
Mass Fraction = 0.1131

Michael Staley

Data reviewed by: Michael Staley, ASTM Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

CERTIFICATE OF ANALYSIS

ERM
840 W. Sam Houston Parkway
North Suite 600
Houston TX, 77024
Attn: Scott Himes

Report Date: 9/15/2023
Laboratory ID: A230914022
Sample Type: Crude Oil
Sample Date 8/17/2023
Sample ID: 41842 23080858-002A

Tests Requested	Result	Units	Test Method
Iron	**16.3**	ppm	ASTM D5708A
Nickel	**22.2**	ppm	
Vanadium	**2.0**	ppm	

Report Prepared by,

Jaclyn Bazaldua, Lab Technician

Reviewed and Approved by,

Dillon Bagley, Lab Supervisor

1300 Corporate Drive E
Arlington, TX 76006
817-633-9119
817-633-9111 (fax)
info.finishedproducts@spl-inc.com
www.spl-inc.com

SPL, Inc.

Analysis Request Chain of Custody Record

SPL

SPL Work Order No.:	Acct. Mate Code:	Dept. Code	Page
			1

Report To: (Company Name):	ERM			Project/Station Name:	Project/Station Number:	Project/Station Location:	Requested TAT*
Address:	840 W. Sam Houston Parkway North Suite 600			Special Instructions:			10 business days
City/State/Zip:	Houston	TX	77024-4613				
Contact:	Scott Himes	Scott.Himes@erm.com		Indicate Billing Type: (Place "X", where appropriate)	Net 30 day Acct.	Check #	* Surcharges May Apply (See quote for details)
Phone:	832-209-8811	Fax:			Credit Card	<<<Contact SPL, Inc for CC payment arrangements.	
Invoice To: (Company Name):	ERM						
Address:	840 W. Sam Houston Parkway North Suite 600			† Terms: Cylinders will be rented for $10/cyl. All cylinders checked out are to be returned within 21 days, whether they contain sample or not. Cylinders not returned after 30 days will be considered lost and will be billed at current replacement cost.			
City/State/Zip:	Houston	TX	77024-4613				
Contact:	Scott Himes	Scott.Himes@erm.com					
Phone:	832-209-8811	Fax:					
Client PO# or Ref. No.:	0701093						
Contract/Proposal #: (i.e. SPLQ####)	SPLQ10978						

Sample ID (used to log/track sample)	Sample Date	Sample Time	Sample Type (Gas/Liq. /Solid)	Duplicate	Composite	Spot	Cylinder Tracking Info† Cylinder #	Date Out	Date In	Requested Analysis (Place an "X" next to Sample ID below) AS-D-6002	AS-D-4294	ASTM D-5705	AS-D-3230	ASTM D-93 (BP 400°F	AS-D-4929							Comments
253998	08/17/23	10:30	Liq			X				X	X	X	X	X	X							
41842	08/17/23	10:50	Liq			X				X	X	X	X	X	X							

Sampled By-Print Name: David Sanguinetti			Received By-Company:			
Signature:						
Relinquished By-Print Name: David Sanguinetti	Date: 8/17/23	Time: 15:15	Received By-Print Name:		Date:	Time:
Signature:			Signature:			
Relinquished By-Print Name:	Date:	Time:	Received By-Print Name:		Date:	Time:
Signature:			Signature:			
Relinquished By-Print Name:	Date:	Time:	Received By-Print Name:		Date:	Time:

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 07, 2023

Scott Himes
Environmental Resources Mgmt.
CityCentre Four
840 W. Sam Houston Pkwy., Suite 600
Houston, TX 77024

Work Order: **HS23081451**

Laboratory Results for: **Sulphur Dome**

Dear Scott Himes,

ALS Environmental received 5 sample(s) on Aug 23, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Bernadette A. Fini
Project Manager

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Work Order: HS23081451

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23081451-01	019-995	Water		22-Aug-2023 08:30	23-Aug-2023 13:00	☐
HS23081451-02	019-582	Water		22-Aug-2023 09:30	23-Aug-2023 13:00	☐
HS23081451-03	Cottages	Water		22-Aug-2023 10:30	23-Aug-2023 13:00	☐
HS23081451-04	019-580	Water		22-Aug-2023 11:00	23-Aug-2023 13:00	☐
HS23081451-05	019-1055	Water		22-Aug-2023 11:30	23-Aug-2023 13:00	☐

Client: Environmental Resources Mgmt. **CASE NARRATIVE**
Project: Sulphur Dome
Work Order: HS23081451

Work Order Comments

• Login notes:
TOC vials received for all samples, no TOC indicated on COC. Per client email run TOC analysis.

Work Order Comments

• Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.

The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.

GC Semivolatiles by Method MA EPH

Batch ID: 199928

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GC Volatiles by Method MA VPH

Batch ID: R445002,R445009

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R444813,R444923

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW6020A

Batch ID: 199844

Sample ID: 019-995 (HS23081451-01MS)

• The MS and/or MSD recovery was outside of the control; however, the result in the parent sample is greater than 4x the spike amount. Manganese, Sodium.

Metals by Method SW7470A

Batch ID: 199824

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM4500H+ B

Batch ID: R444965

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method M2540C

Batch ID: R445075

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R445658

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Environmental Resources Mgmt. **CASE NARRATIVE**
Project: Sulphur Dome
Work Order: HS23081451

WetChemistry by Method SW9056

WetChemistry by Method SW9060

Batch ID: R445450

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM2320B

Batch ID: R444964

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E376.1

Batch ID: R444938

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM4500 S2-F

Batch ID: R444796

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 019-995
Collection Date: 22-Aug-2023 08:30

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-01
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: AKP
Benzene		U	0.20	1.0	ug/L	1	26-Aug-2023 07:13
Ethylbenzene		U	0.30	1.0	ug/L	1	26-Aug-2023 07:13
m,p-Xylene		U	0.50	2.0	ug/L	1	26-Aug-2023 07:13
o-Xylene		U	0.30	1.0	ug/L	1	26-Aug-2023 07:13
Toluene		U	0.20	1.0	ug/L	1	26-Aug-2023 07:13
Xylenes, Total		U	0.30	1.0	ug/L	1	26-Aug-2023 07:13
Surr: 1,2-Dichloroethane-d4	*106*			*70-126*	*%REC*	*1*	*26-Aug-2023 07:13*
Surr: 4-Bromofluorobenzene	*97.1*			*77-113*	*%REC*	*1*	*26-Aug-2023 07:13*
Surr: Dibromofluoromethane	*112*			*77-123*	*%REC*	*1*	*26-Aug-2023 07:13*
Surr: Toluene-d8	*90.5*			*82-127*	*%REC*	*1*	*26-Aug-2023 07:13*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: FT
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	29-Aug-2023 01:45
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 01:45
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 01:45
Surr: 2,5-Dibromotoluene (Aliphatic)	*79.1*			*70-130*	*%REC*	*1*	*29-Aug-2023 01:45*
Surr: 2,5-Dibromotoluene (Aromatic)	*90.8*			*70-130*	*%REC*	*1*	*29-Aug-2023 01:45*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 05-Sep-2023		Analyst: PPM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 17:24
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	06-Sep-2023 17:24
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	06-Sep-2023 17:24
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 17:24
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	06-Sep-2023 17:24
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	06-Sep-2023 17:24
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	06-Sep-2023 17:24
Surr: 1-Chlorooctadecane	*54.4*			*40-140*	*%REC*	*1*	*06-Sep-2023 17:24*
Surr: 2-Bromonaphthalene	*86.8*			*40-140*	*%REC*	*1*	*06-Sep-2023 17:24*
Surr: 2-Fluorobiphenyl	*73.8*			*40-140*	*%REC*	*1*	*06-Sep-2023 17:24*
Surr: o-Terphenyl	*61.3*			*40-140*	*%REC*	*1*	*06-Sep-2023 17:24*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 019-995
Collection Date: 22-Aug-2023 08:30

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-01
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 01-Sep-2023		Analyst: JC
Arsenic	**0.000638**	J	**0.000400**	**0.00200**	**mg/L**	1	02-Sep-2023 00:03
Barium	**0.211**		**0.00190**	**0.00400**	**mg/L**	1	02-Sep-2023 00:03
Cadmium	U		0.000200	0.00200	mg/L	1	02-Sep-2023 00:03
Calcium	**24.3**		**0.0340**	**0.500**	**mg/L**	1	02-Sep-2023 00:03
Chromium	**0.000600**	J	**0.000400**	**0.00400**	**mg/L**	1	02-Sep-2023 00:03
Iron	**3.53**		**0.0120**	**0.200**	**mg/L**	1	02-Sep-2023 00:03
Lead	U		0.000600	0.00200	mg/L	1	02-Sep-2023 00:03
Magnesium	**7.66**		**0.0100**	**0.200**	**mg/L**	1	02-Sep-2023 00:03
Manganese	**0.377**		**0.00700**	**0.0500**	**mg/L**	10	05-Sep-2023 12:51
Nickel	U		0.000600	0.00200	mg/L	1	02-Sep-2023 00:03
Potassium	**2.65**		**0.0180**	**0.200**	**mg/L**	1	02-Sep-2023 00:03
Selenium	U		0.00110	0.00200	mg/L	1	02-Sep-2023 00:03
Silver	**0.000242**	J	**0.000200**	**0.00200**	**mg/L**	1	02-Sep-2023 00:03
Sodium	**27.2**		**0.140**	**2.00**	**mg/L**	10	05-Sep-2023 12:51
Strontium	**0.207**		**0.000200**	**0.00500**	**mg/L**	1	02-Sep-2023 00:03
Vanadium	U		0.000600	0.00500	mg/L	1	02-Sep-2023 00:03
Zinc	**0.00218**	J	**0.00200**	**0.00400**	**mg/L**	1	02-Sep-2023 00:03
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 01-Sep-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	01-Sep-2023 14:21
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Aug-2023 07:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**228**		**5.00**	**10.0**	**mg/L**	1	28-Aug-2023 12:30
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**118**		**5.00**	**5.00**	**mg/L**	1	28-Aug-2023 13:57
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	28-Aug-2023 13:57
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	25-Aug-2023 07:30
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.32**	H	**0.100**	**0.100**	**pH Units**	1	28-Aug-2023 13:57
Temp Deg C @pH	**19.8**	H	**0**	**0**	**°C**	1	28-Aug-2023 13:57
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	06-Sep-2023 14:30
Chloride	**22.2**		**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 14:30
Sulfate	**4.11**		**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 14:30
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**					Analyst: DW
Organic Carbon, Total	**3.84**		**0.500**	**1.00**	**mg/L**	1	01-Sep-2023 14:05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 019-582
Collection Date: 22-Aug-2023 09:30

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-02
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: AKP
Benzene		U	0.20	1.0	ug/L	1	25-Aug-2023 02:31
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Aug-2023 02:31
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Aug-2023 02:31
o-Xylene		U	0.30	1.0	ug/L	1	25-Aug-2023 02:31
Toluene		U	0.20	1.0	ug/L	1	25-Aug-2023 02:31
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Aug-2023 02:31
Surr: 1,2-Dichloroethane-d4	*103*			*70-126*	*%REC*	*1*	*25-Aug-2023 02:31*
Surr: 4-Bromofluorobenzene	*98.5*			*77-113*	*%REC*	*1*	*25-Aug-2023 02:31*
Surr: Dibromofluoromethane	*111*			*77-123*	*%REC*	*1*	*25-Aug-2023 02:31*
Surr: Toluene-d8	*92.9*			*82-127*	*%REC*	*1*	*25-Aug-2023 02:31*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: FT
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	29-Aug-2023 02:24
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 02:24
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 02:24
Surr: 2,5-Dibromotoluene (Aliphatic)	*83.7*			*70-130*	*%REC*	*1*	*29-Aug-2023 02:24*
Surr: 2,5-Dibromotoluene (Aromatic)	*95.2*			*70-130*	*%REC*	*1*	*29-Aug-2023 02:24*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 05-Sep-2023		Analyst: PPM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 17:52
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	06-Sep-2023 17:52
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	06-Sep-2023 17:52
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 17:52
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	06-Sep-2023 17:52
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	06-Sep-2023 17:52
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	06-Sep-2023 17:52
Surr: 1-Chlorooctadecane	*57.1*			*40-140*	*%REC*	*1*	*06-Sep-2023 17:52*
Surr: 2-Bromonaphthalene	*79.0*			*40-140*	*%REC*	*1*	*06-Sep-2023 17:52*
Surr: 2-Fluorobiphenyl	*45.6*			*40-140*	*%REC*	*1*	*06-Sep-2023 17:52*
Surr: o-Terphenyl	*68.4*			*40-140*	*%REC*	*1*	*06-Sep-2023 17:52*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 019-582
Collection Date: 22-Aug-2023 09:30

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-02
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 01-Sep-2023		Analyst: JC
Arsenic	**0.000488**	J	**0.000400**	**0.00200**	**mg/L**	1	02-Sep-2023 00:16
Barium	**0.224**		**0.00190**	**0.00400**	**mg/L**	1	02-Sep-2023 00:16
Cadmium	U		0.000200	0.00200	mg/L	1	02-Sep-2023 00:16
Calcium	**24.2**		**0.0340**	**0.500**	**mg/L**	1	02-Sep-2023 00:16
Chromium	**0.000697**	J	**0.000400**	**0.00400**	**mg/L**	1	02-Sep-2023 00:16
Iron	**3.49**		**0.0120**	**0.200**	**mg/L**	1	02-Sep-2023 00:16
Lead	U		0.000600	0.00200	mg/L	1	02-Sep-2023 00:16
Magnesium	**7.47**		**0.0100**	**0.200**	**mg/L**	1	02-Sep-2023 00:16
Manganese	**0.372**		**0.000700**	**0.00500**	**mg/L**	1	02-Sep-2023 00:16
Nickel	U		0.000600	0.00200	mg/L	1	02-Sep-2023 00:16
Potassium	**2.74**		**0.0180**	**0.200**	**mg/L**	1	02-Sep-2023 00:16
Selenium	U		0.00110	0.00200	mg/L	1	02-Sep-2023 00:16
Silver	U		0.000200	0.00200	mg/L	1	02-Sep-2023 00:16
Sodium	**29.8**		**0.0140**	**0.200**	**mg/L**	1	02-Sep-2023 00:16
Strontium	**0.215**		**0.000200**	**0.00500**	**mg/L**	1	02-Sep-2023 00:16
Vanadium	U		0.000600	0.00500	mg/L	1	02-Sep-2023 00:16
Zinc	**0.656**		**0.00200**	**0.00400**	**mg/L**	1	02-Sep-2023 00:16
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 01-Sep-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	01-Sep-2023 14:23
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Aug-2023 07:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**226**		**5.00**	**10.0**	**mg/L**	1	28-Aug-2023 12:30
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**116**		**5.00**	**5.00**	**mg/L**	1	28-Aug-2023 14:02
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	28-Aug-2023 14:02
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	25-Aug-2023 07:30
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.23**	H	**0.100**	**0.100**	**pH Units**	1	28-Aug-2023 14:02
Temp Deg C @pH	**19.5**	H	**0**	**0**	**°C**	1	28-Aug-2023 14:02
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	06-Sep-2023 14:47
Chloride	**27.7**		**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 14:47
Sulfate	**3.44**		**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 14:47
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**					Analyst: DW
Organic Carbon, Total	**2.14**		**0.500**	**1.00**	**mg/L**	1	01-Sep-2023 14:44

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: Cottages
Collection Date: 22-Aug-2023 10:30

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-03
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: AKP
Benzene		U	0.20	1.0	ug/L	1	25-Aug-2023 02:54
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Aug-2023 02:54
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Aug-2023 02:54
o-Xylene		U	0.30	1.0	ug/L	1	25-Aug-2023 02:54
Toluene		U	0.20	1.0	ug/L	1	25-Aug-2023 02:54
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Aug-2023 02:54
Surr: 1,2-Dichloroethane-d4	*102*			*70-126*	*%REC*	*1*	*25-Aug-2023 02:54*
Surr: 4-Bromofluorobenzene	*98.0*			*77-113*	*%REC*	*1*	*25-Aug-2023 02:54*
Surr: Dibromofluoromethane	*110*			*77-123*	*%REC*	*1*	*25-Aug-2023 02:54*
Surr: Toluene-d8	*92.5*			*82-127*	*%REC*	*1*	*25-Aug-2023 02:54*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: FT
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	29-Aug-2023 03:02
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 03:02
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 03:02
Surr: 2,5-Dibromotoluene (Aliphatic)	*83.1*			*70-130*	*%REC*	*1*	*29-Aug-2023 03:02*
Surr: 2,5-Dibromotoluene (Aromatic)	*94.7*			*70-130*	*%REC*	*1*	*29-Aug-2023 03:02*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 05-Sep-2023		Analyst: PPM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 18:21
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	06-Sep-2023 18:21
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	06-Sep-2023 18:21
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 18:21
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	06-Sep-2023 18:21
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	06-Sep-2023 18:21
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	06-Sep-2023 18:21
Surr: 1-Chlorooctadecane	*65.2*			*40-140*	*%REC*	*1*	*06-Sep-2023 18:21*
Surr: 2-Bromonaphthalene	*94.4*			*40-140*	*%REC*	*1*	*06-Sep-2023 18:21*
Surr: 2-Fluorobiphenyl	*95.4*			*40-140*	*%REC*	*1*	*06-Sep-2023 18:21*
Surr: o-Terphenyl	*65.2*			*40-140*	*%REC*	*1*	*06-Sep-2023 18:21*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: Cottages
Collection Date: 22-Aug-2023 10:30

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-03
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 01-Sep-2023		Analyst: JC
Arsenic	U		0.000400	0.00200	mg/L	1	02-Sep-2023 00:18
Barium	**0.160**		**0.00190**	**0.00400**	**mg/L**	1	02-Sep-2023 00:18
Cadmium	U		0.000200	0.00200	mg/L	1	02-Sep-2023 00:18
Calcium	**12.2**		**0.0340**	**0.500**	**mg/L**	1	02-Sep-2023 00:18
Chromium	**0.000562**	J	**0.000400**	**0.00400**	**mg/L**	1	02-Sep-2023 00:18
Iron	**1.46**		**0.0120**	**0.200**	**mg/L**	1	02-Sep-2023 00:18
Lead	U		0.000600	0.00200	mg/L	1	02-Sep-2023 00:18
Magnesium	**3.38**		**0.0100**	**0.200**	**mg/L**	1	02-Sep-2023 00:18
Manganese	**0.156**		**0.000700**	**0.00500**	**mg/L**	1	02-Sep-2023 00:18
Nickel	U		0.000600	0.00200	mg/L	1	02-Sep-2023 00:18
Potassium	**2.03**		**0.0180**	**0.200**	**mg/L**	1	02-Sep-2023 00:18
Selenium	U		0.00110	0.00200	mg/L	1	02-Sep-2023 00:18
Silver	U		0.000200	0.00200	mg/L	1	02-Sep-2023 00:18
Sodium	**72.1**		**0.0140**	**0.200**	**mg/L**	1	02-Sep-2023 00:18
Strontium	**0.141**		**0.000200**	**0.00500**	**mg/L**	1	02-Sep-2023 00:18
Vanadium	**0.000689**	J	**0.000600**	**0.00500**	**mg/L**	1	02-Sep-2023 00:18
Zinc	**0.0237**		**0.00200**	**0.00400**	**mg/L**	1	02-Sep-2023 00:18
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 01-Sep-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	01-Sep-2023 14:25
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Aug-2023 07:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**270**		**5.00**	**10.0**	**mg/L**	1	28-Aug-2023 12:30
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**153**		**5.00**	**5.00**	**mg/L**	1	28-Aug-2023 14:07
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	28-Aug-2023 14:07
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	25-Aug-2023 07:30
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.32**	H	**0.100**	**0.100**	**pH Units**	1	28-Aug-2023 14:07
Temp Deg C @pH	**20.0**	H	**0**	**0**	**°C**	1	28-Aug-2023 14:07
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	**0.118**		**0.0300**	**0.100**	**mg/L**	1	06-Sep-2023 14:53
Chloride	**57.5**		**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 14:53
Sulfate	**0.462**	J	**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 14:53
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**					Analyst: DW
Organic Carbon, Total	**1.38**		**0.500**	**1.00**	**mg/L**	1	01-Sep-2023 15:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 019-580
Collection Date: 22-Aug-2023 11:00

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-04
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: AKP
Benzene		U	0.20	1.0	ug/L	1	25-Aug-2023 03:16
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Aug-2023 03:16
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Aug-2023 03:16
o-Xylene		U	0.30	1.0	ug/L	1	25-Aug-2023 03:16
Toluene		U	0.20	1.0	ug/L	1	25-Aug-2023 03:16
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Aug-2023 03:16
Surr: 1,2-Dichloroethane-d4	*106*			*70-126*	*%REC*	*1*	*25-Aug-2023 03:16*
Surr: 4-Bromofluorobenzene	*96.4*			*77-113*	*%REC*	*1*	*25-Aug-2023 03:16*
Surr: Dibromofluoromethane	*114*			*77-123*	*%REC*	*1*	*25-Aug-2023 03:16*
Surr: Toluene-d8	*90.4*			*82-127*	*%REC*	*1*	*25-Aug-2023 03:16*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: FT
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	29-Aug-2023 03:40
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 03:40
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 03:40
Surr: 2,5-Dibromotoluene (Aliphatic)	*81.9*			*70-130*	*%REC*	*1*	*29-Aug-2023 03:40*
Surr: 2,5-Dibromotoluene (Aromatic)	*93.6*			*70-130*	*%REC*	*1*	*29-Aug-2023 03:40*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 05-Sep-2023		Analyst: PPM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 18:50
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	06-Sep-2023 18:50
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	06-Sep-2023 18:50
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 18:50
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	06-Sep-2023 18:50
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	06-Sep-2023 18:50
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	06-Sep-2023 18:50
Surr: 1-Chlorooctadecane	*58.4*			*40-140*	*%REC*	*1*	*06-Sep-2023 18:50*
Surr: 2-Bromonaphthalene	*95.1*			*40-140*	*%REC*	*1*	*06-Sep-2023 18:50*
Surr: 2-Fluorobiphenyl	*84.7*			*40-140*	*%REC*	*1*	*06-Sep-2023 18:50*
Surr: o-Terphenyl	*60.7*			*40-140*	*%REC*	*1*	*06-Sep-2023 18:50*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 019-580
Collection Date: 22-Aug-2023 11:00

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-04
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 01-Sep-2023		Analyst: JC
Arsenic	U		0.000400	0.00200	mg/L	1	02-Sep-2023 00:20
Barium	**0.221**		**0.00190**	**0.00400**	**mg/L**	1	02-Sep-2023 00:20
Cadmium	U		0.000200	0.00200	mg/L	1	02-Sep-2023 00:20
Calcium	**25.1**		**0.0340**	**0.500**	**mg/L**	1	02-Sep-2023 00:20
Chromium	**0.00172**	J	**0.000400**	**0.00400**	**mg/L**	1	02-Sep-2023 00:20
Iron	**4.97**		**0.0120**	**0.200**	**mg/L**	1	02-Sep-2023 00:20
Lead	U		0.000600	0.00200	mg/L	1	02-Sep-2023 00:20
Magnesium	**7.71**		**0.0100**	**0.200**	**mg/L**	1	02-Sep-2023 00:20
Manganese	**0.411**		**0.000700**	**0.00500**	**mg/L**	1	02-Sep-2023 00:20
Nickel	**0.000793**	J	**0.000600**	**0.00200**	**mg/L**	1	02-Sep-2023 00:20
Potassium	**2.64**		**0.0180**	**0.200**	**mg/L**	1	02-Sep-2023 00:20
Selenium	U		0.00110	0.00200	mg/L	1	02-Sep-2023 00:20
Silver	U		0.000200	0.00200	mg/L	1	02-Sep-2023 00:20
Sodium	**30.2**		**0.0140**	**0.200**	**mg/L**	1	02-Sep-2023 00:20
Strontium	**0.215**		**0.000200**	**0.00500**	**mg/L**	1	02-Sep-2023 00:20
Vanadium	U		0.000600	0.00500	mg/L	1	02-Sep-2023 00:20
Zinc	**0.00613**		**0.00200**	**0.00400**	**mg/L**	1	02-Sep-2023 00:20
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 01-Sep-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	01-Sep-2023 14:31
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Aug-2023 07:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**204**		**5.00**	**10.0**	**mg/L**	1	28-Aug-2023 12:30
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**120**		**5.00**	**5.00**	**mg/L**	1	28-Aug-2023 14:13
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	28-Aug-2023 14:13
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	25-Aug-2023 07:30
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.63**	H	**0.100**	**0.100**	**pH Units**	1	28-Aug-2023 14:13
Temp Deg C @pH	**20.4**	H	**0**	**0**	**°C**	1	28-Aug-2023 14:13
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	**0.0634**	J	**0.0300**	**0.100**	**mg/L**	1	06-Sep-2023 14:59
Chloride	**37.1**		**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 14:59
Sulfate	**2.95**		**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 14:59
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**					Analyst: DW
Organic Carbon, Total	U		0.500	1.00	mg/L	1	01-Sep-2023 15:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 019-1055
Collection Date: 22-Aug-2023 11:30

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-05
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: AKP
Benzene		U	0.20	1.0	ug/L	1	25-Aug-2023 03:39
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Aug-2023 03:39
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Aug-2023 03:39
o-Xylene		U	0.30	1.0	ug/L	1	25-Aug-2023 03:39
Toluene		U	0.20	1.0	ug/L	1	25-Aug-2023 03:39
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Aug-2023 03:39
Surr: 1,2-Dichloroethane-d4	*108*			*70-126*	*%REC*	*1*	*25-Aug-2023 03:39*
Surr: 4-Bromofluorobenzene	*98.3*			*77-113*	*%REC*	*1*	*25-Aug-2023 03:39*
Surr: Dibromofluoromethane	*115*			*77-123*	*%REC*	*1*	*25-Aug-2023 03:39*
Surr: Toluene-d8	*92.0*			*82-127*	*%REC*	*1*	*25-Aug-2023 03:39*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: FT
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	29-Aug-2023 04:18
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 04:18
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	29-Aug-2023 04:18
Surr: 2,5-Dibromotoluene (Aliphatic)	*83.7*			*70-130*	*%REC*	*1*	*29-Aug-2023 04:18*
Surr: 2,5-Dibromotoluene (Aromatic)	*95.9*			*70-130*	*%REC*	*1*	*29-Aug-2023 04:18*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 05-Sep-2023		Analyst: PPM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 19:19
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	06-Sep-2023 19:19
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	06-Sep-2023 19:19
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	06-Sep-2023 19:19
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	06-Sep-2023 19:19
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	06-Sep-2023 19:19
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	06-Sep-2023 19:19
Surr: 1-Chlorooctadecane	*58.6*			*40-140*	*%REC*	*1*	*06-Sep-2023 19:19*
Surr: 2-Bromonaphthalene	*86.1*			*40-140*	*%REC*	*1*	*06-Sep-2023 19:19*
Surr: 2-Fluorobiphenyl	*59.6*			*40-140*	*%REC*	*1*	*06-Sep-2023 19:19*
Surr: o-Terphenyl	*55.7*			*40-140*	*%REC*	*1*	*06-Sep-2023 19:19*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 019-1055
Collection Date: 22-Aug-2023 11:30

ANALYTICAL REPORT
WorkOrder:HS23081451
Lab ID:HS23081451-05
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 01-Sep-2023		Analyst: JC
Arsenic	U		0.000400	0.00200	mg/L	1	02-Sep-2023 00:22
Barium	**0.229**		**0.00190**	**0.00400**	**mg/L**	1	02-Sep-2023 00:22
Cadmium	U		0.000200	0.00200	mg/L	1	02-Sep-2023 00:22
Calcium	**24.2**		**0.0340**	**0.500**	**mg/L**	1	02-Sep-2023 00:22
Chromium	**0.000535**	J	**0.000400**	**0.00400**	**mg/L**	1	02-Sep-2023 00:22
Iron	**3.29**		**0.0120**	**0.200**	**mg/L**	1	02-Sep-2023 00:22
Lead	U		0.000600	0.00200	mg/L	1	02-Sep-2023 00:22
Magnesium	**7.46**		**0.0100**	**0.200**	**mg/L**	1	02-Sep-2023 00:22
Manganese	**0.344**		**0.000700**	**0.00500**	**mg/L**	1	02-Sep-2023 00:22
Nickel	U		0.000600	0.00200	mg/L	1	02-Sep-2023 00:22
Potassium	**2.54**		**0.0180**	**0.200**	**mg/L**	1	02-Sep-2023 00:22
Selenium	U		0.00110	0.00200	mg/L	1	02-Sep-2023 00:22
Silver	U		0.000200	0.00200	mg/L	1	02-Sep-2023 00:22
Sodium	**28.3**		**0.0140**	**0.200**	**mg/L**	1	02-Sep-2023 00:22
Strontium	**0.215**		**0.000200**	**0.00500**	**mg/L**	1	02-Sep-2023 00:22
Vanadium	**0.000698**	J	**0.000600**	**0.00500**	**mg/L**	1	02-Sep-2023 00:22
Zinc	**0.0260**		**0.00200**	**0.00400**	**mg/L**	1	02-Sep-2023 00:22
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 01-Sep-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	01-Sep-2023 14:33
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Aug-2023 07:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**238**		**5.00**	**10.0**	**mg/L**	1	28-Aug-2023 12:30
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**119**		**5.00**	**5.00**	**mg/L**	1	28-Aug-2023 14:29
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	28-Aug-2023 14:29
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	25-Aug-2023 07:30
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.21**	H	**0.100**	**0.100**	**pH Units**	1	28-Aug-2023 14:29
Temp Deg C @pH	**20.2**	H	**0**	**0**	**°C**	1	28-Aug-2023 14:29
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	06-Sep-2023 15:05
Chloride	**36.4**		**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 15:05
Sulfate	**3.64**		**0.200**	**0.500**	**mg/L**	1	06-Sep-2023 15:05
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**					Analyst: DW
Organic Carbon, Total	**1.11**		**0.500**	**1.00**	**mg/L**	1	01-Sep-2023 16:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

Batch ID: 199824 **Start Date:** 01 Sep 2023 11:00 **End Date:** 01 Sep 2023 11:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23081451-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081451-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081451-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081451-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081451-05		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 199844 **Start Date:** 01 Sep 2023 12:00 **End Date:** 01 Sep 2023 12:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23081451-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081451-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081451-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081451-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081451-05		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 199928 **Start Date:** 05 Sep 2023 15:13 **End Date:** 05 Sep 2023 15:13
Method: MA EPH EXTRACTION-FRACTIONATION **Prep Code:** MA EPH_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23081451-01	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23081451-02	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23081451-03	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23081451-04	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23081451-05	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 199824 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30		01 Sep 2023 11:00	01 Sep 2023 14:21	1
HS23081451-02	019-582	22 Aug 2023 09:30		01 Sep 2023 11:00	01 Sep 2023 14:23	1
HS23081451-03	Cottages	22 Aug 2023 10:30		01 Sep 2023 11:00	01 Sep 2023 14:25	1
HS23081451-04	019-580	22 Aug 2023 11:00		01 Sep 2023 11:00	01 Sep 2023 14:31	1
HS23081451-05	019-1055	22 Aug 2023 11:30		01 Sep 2023 11:00	01 Sep 2023 14:33	1
Batch ID: 199844 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30		01 Sep 2023 12:00	05 Sep 2023 12:51	10
HS23081451-01	019-995	22 Aug 2023 08:30		01 Sep 2023 12:00	02 Sep 2023 00:03	1
HS23081451-02	019-582	22 Aug 2023 09:30		01 Sep 2023 12:00	02 Sep 2023 00:16	1
HS23081451-03	Cottages	22 Aug 2023 10:30		01 Sep 2023 12:00	02 Sep 2023 00:18	1
HS23081451-04	019-580	22 Aug 2023 11:00		01 Sep 2023 12:00	02 Sep 2023 00:20	1
HS23081451-05	019-1055	22 Aug 2023 11:30		01 Sep 2023 12:00	02 Sep 2023 00:22	1
Batch ID: 199928 (0)	**Test Name :** MASSACHUSETTS EPH R2.1, DEC 2019				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30		05 Sep 2023 15:13	06 Sep 2023 17:24	1
HS23081451-01	019-995	22 Aug 2023 08:30		05 Sep 2023 15:13	06 Sep 2023 17:24	1
HS23081451-02	019-582	22 Aug 2023 09:30		05 Sep 2023 15:13	06 Sep 2023 17:52	1
HS23081451-02	019-582	22 Aug 2023 09:30		05 Sep 2023 15:13	06 Sep 2023 17:52	1
HS23081451-03	Cottages	22 Aug 2023 10:30		05 Sep 2023 15:13	06 Sep 2023 18:21	1
HS23081451-03	Cottages	22 Aug 2023 10:30		05 Sep 2023 15:13	06 Sep 2023 18:21	1
HS23081451-04	019-580	22 Aug 2023 11:00		05 Sep 2023 15:13	06 Sep 2023 18:50	1
HS23081451-04	019-580	22 Aug 2023 11:00		05 Sep 2023 15:13	06 Sep 2023 18:50	1
HS23081451-05	019-1055	22 Aug 2023 11:30		05 Sep 2023 15:13	06 Sep 2023 19:19	1
HS23081451-05	019-1055	22 Aug 2023 11:30		05 Sep 2023 15:13	06 Sep 2023 19:19	1
Batch ID: R444796 (0)	**Test Name :** SULFIDE BY SM4500 S2-F-2011				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			25 Aug 2023 07:30	1
HS23081451-02	019-582	22 Aug 2023 09:30			25 Aug 2023 07:30	1
HS23081451-03	Cottages	22 Aug 2023 10:30			25 Aug 2023 07:30	1
HS23081451-04	019-580	22 Aug 2023 11:00			25 Aug 2023 07:30	1
HS23081451-05	019-1055	22 Aug 2023 11:30			25 Aug 2023 07:30	1
Batch ID: R444813 (0)	**Test Name :** LOW LEVEL VOLATILES BY SW8260C				**Matrix:** Water	
HS23081451-02	019-582	22 Aug 2023 09:30			25 Aug 2023 02:31	1
HS23081451-03	Cottages	22 Aug 2023 10:30			25 Aug 2023 02:54	1
HS23081451-04	019-580	22 Aug 2023 11:00			25 Aug 2023 03:16	1
HS23081451-05	019-1055	22 Aug 2023 11:30			25 Aug 2023 03:39	1
Batch ID: R444923 (0)	**Test Name :** LOW LEVEL VOLATILES BY SW8260C				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			26 Aug 2023 07:13	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R444938 (0)	**Test Name :** HYDROGEN SULFIDE BY E376.1				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			25 Aug 2023 07:30	1
HS23081451-02	019-582	22 Aug 2023 09:30			25 Aug 2023 07:30	1
HS23081451-03	Cottages	22 Aug 2023 10:30			25 Aug 2023 07:30	1
HS23081451-04	019-580	22 Aug 2023 11:00			25 Aug 2023 07:30	1
HS23081451-05	019-1055	22 Aug 2023 11:30			25 Aug 2023 07:30	1
Batch ID: R444964 (0)	**Test Name :** ALKALINITY BY -2011				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			28 Aug 2023 13:57	1
HS23081451-02	019-582	22 Aug 2023 09:30			28 Aug 2023 14:02	1
HS23081451-03	Cottages	22 Aug 2023 10:30			28 Aug 2023 14:07	1
HS23081451-04	019-580	22 Aug 2023 11:00			28 Aug 2023 14:13	1
HS23081451-05	019-1055	22 Aug 2023 11:30			28 Aug 2023 14:29	1
Batch ID: R444965 (0)	**Test Name :** PH BY SM4500H+ B-2011				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			28 Aug 2023 13:57	1
HS23081451-02	019-582	22 Aug 2023 09:30			28 Aug 2023 14:02	1
HS23081451-03	Cottages	22 Aug 2023 10:30			28 Aug 2023 14:07	1
HS23081451-04	019-580	22 Aug 2023 11:00			28 Aug 2023 14:13	1
HS23081451-05	019-1055	22 Aug 2023 11:30			28 Aug 2023 14:29	1
Batch ID: R445002 (0)	**Test Name :** MASSACHUSETTS VPH, FEB 2018, REV 2.1				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			29 Aug 2023 01:45	1
HS23081451-02	019-582	22 Aug 2023 09:30			29 Aug 2023 02:24	1
HS23081451-03	Cottages	22 Aug 2023 10:30			29 Aug 2023 03:02	1
HS23081451-04	019-580	22 Aug 2023 11:00			29 Aug 2023 03:40	1
HS23081451-05	019-1055	22 Aug 2023 11:30			29 Aug 2023 04:18	1
Batch ID: R445009 (0)	**Test Name :** MASSACHUSETTS VPH, FEB 2018, REV 2.1				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			29 Aug 2023 01:45	1
HS23081451-02	019-582	22 Aug 2023 09:30			29 Aug 2023 02:24	1
HS23081451-03	Cottages	22 Aug 2023 10:30			29 Aug 2023 03:02	1
HS23081451-04	019-580	22 Aug 2023 11:00			29 Aug 2023 03:40	1
HS23081451-05	019-1055	22 Aug 2023 11:30			29 Aug 2023 04:18	1
Batch ID: R445075 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			28 Aug 2023 12:30	1
HS23081451-02	019-582	22 Aug 2023 09:30			28 Aug 2023 12:30	1
HS23081451-03	Cottages	22 Aug 2023 10:30			28 Aug 2023 12:30	1
HS23081451-04	019-580	22 Aug 2023 11:00			28 Aug 2023 12:30	1
HS23081451-05	019-1055	22 Aug 2023 11:30			28 Aug 2023 12:30	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R445450 (0)	**Test Name :** TOTAL ORGANIC CARBON BY SW9060A				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			01 Sep 2023 14:05	1
HS23081451-02	019-582	22 Aug 2023 09:30			01 Sep 2023 14:44	1
HS23081451-03	Cottages	22 Aug 2023 10:30			01 Sep 2023 15:02	1
HS23081451-04	019-580	22 Aug 2023 11:00			01 Sep 2023 15:58	1
HS23081451-05	019-1055	22 Aug 2023 11:30			01 Sep 2023 16:17	1
Batch ID: R445658 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS23081451-01	019-995	22 Aug 2023 08:30			06 Sep 2023 14:30	1
HS23081451-02	019-582	22 Aug 2023 09:30			06 Sep 2023 14:47	1
HS23081451-03	Cottages	22 Aug 2023 10:30			06 Sep 2023 14:53	1
HS23081451-04	019-580	22 Aug 2023 11:00			06 Sep 2023 14:59	1
HS23081451-05	019-1055	22 Aug 2023 11:30			06 Sep 2023 15:05	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: 199928 (0) **Instrument: FID23** **Method: MASSACHUSETTS EPH R2.1, DEC 2019**

MBLK Sample ID: **MBLK-199928** Units: **mg/L** Analysis Date: **06-Sep-2023 15:45**
Client ID: Run ID: **FID23_445676** SeqNo: **7529006** PrepDate: **05-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	U	0.00100								
Aliphatics >C12 - C16	U	0.00200								
Aliphatics >C16 - C35	U	0.00800								
Surr: 1-Chlorooctadecane	*0.02375*	*0*	*0.04*	*0*	*59.4*	*40 - 140*				

MBLK Sample ID: **MBLK-199928** Units: **mg/L** Analysis Date: **06-Sep-2023 15:45**
Client ID: Run ID: **FID-22_445675** SeqNo: **7528996** PrepDate: **05-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	U	0.00100								
Aromatics >C12 - C16	U	0.00400								
Aromatics >C16 - C21	U	0.00300								
Aromatics >C21 - C35	U	0.00900								
Surr: 2-Bromonaphthalene	*0.03688*	*0*	*0.04*	*0*	*92.2*	*40 - 140*				
Surr: 2-Fluorobiphenyl	*0.02905*	*0*	*0.04*	*0*	*72.6*	*40 - 140*				
Surr: o-Terphenyl	*0.02442*	*0*	*0.04*	*0*	*61.1*	*40 - 140*				

LCS Sample ID: **LCS-199928** Units: **mg/L** Analysis Date: **06-Sep-2023 16:13**
Client ID: Run ID: **FID23_445676** SeqNo: **7529007** PrepDate: **05-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	0.05875	0.00100	0.05	0	118	40 - 140				
Aliphatics >C12 - C16	0.1145	0.00200	0.1	0	115	40 - 140				
Aliphatics >C16 - C35	0.2952	0.00800	0.4	0	73.8	40 - 140				
Surr: 1-Chlorooctadecane	*0.02795*	*0*	*0.04*	*0*	*69.9*	*40 - 140*				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: 199928 (0) **Instrument: FID23** **Method: MASSACHUSETTS EPH R2.1, DEC 2019**

LCS Sample ID: **LCS-199928** Units: **mg/L** Analysis Date: **06-Sep-2023 16:13**
Client ID: Run ID: **FID-22_445675** SeqNo: **7528997** PrepDate: **05-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	0.0547	0.00100	0.05	0	109	40 - 140				
Aromatics >C12 - C16	0.2213	0.00400	0.2	0	111	40 - 140				
Aromatics >C16 - C21	0.1794	0.00300	0.15	0	120	40 - 140				
Aromatics >C21 - C35	0.5021	0.00900	0.45	0	112	40 - 140				
Surr: 2-Bromonaphthalene	*0.03644*	*0*	*0.04*	*0*	*91.1*	*40 - 140*				
Surr: 2-Fluorobiphenyl	*0.02125*	*0*	*0.04*	*0*	*53.1*	*40 - 140*				
Surr: o-Terphenyl	*0.03032*	*0*	*0.04*	*0*	*75.8*	*40 - 140*				

LCSD Sample ID: **LCSD-199928** Units: **mg/L** Analysis Date: **06-Sep-2023 16:42**
Client ID: Run ID: **FID23_445676** SeqNo: **7529008** PrepDate: **05-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	0.06091	0.00100	0.05	0	122	40 - 140	0.05875	3.61	50	
Aliphatics >C12 - C16	0.1234	0.00200	0.1	0	123	40 - 140	0.1145	7.45	50	
Aliphatics >C16 - C35	0.3181	0.00800	0.4	0	79.5	40 - 140	0.2952	7.48	50	
Surr: 1-Chlorooctadecane	*0.03038*	*0*	*0.04*	*0*	*76.0*	*40 - 140*	*0.02795*	*8.33*	*50*	

LCSD Sample ID: **LCSD-199928** Units: **mg/L** Analysis Date: **06-Sep-2023 16:42**
Client ID: Run ID: **FID-22_445675** SeqNo: **7528998** PrepDate: **05-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	0.04875	0.00100	0.05	0	97.5	40 - 140	0.0547	11.5	50	
Aromatics >C12 - C16	0.1962	0.00400	0.2	0	98.1	40 - 140	0.2213	12	50	
Aromatics >C16 - C21	0.1607	0.00300	0.15	0	107	40 - 140	0.1794	11	50	
Aromatics >C21 - C35	0.4587	0.00900	0.45	0	102	40 - 140	0.5021	9.04	50	
Surr: 2-Bromonaphthalene	*0.03328*	*0*	*0.04*	*0*	*83.2*	*40 - 140*	*0.03644*	*9.08*	*50*	
Surr: 2-Fluorobiphenyl	*0.02224*	*0*	*0.04*	*0*	*55.6*	*40 - 140*	*0.02125*	*4.55*	*50*	
Surr: o-Terphenyl	*0.02945*	*0*	*0.04*	*0*	*73.6*	*40 - 140*	*0.03032*	*2.91*	*50*	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R445002 (0) **Instrument: FID-14** **Method: MASSACHUSETTS VPH, FEB 2018, REV 2.1**

MBLK Sample ID: **MB-230828** Units: **mg/L** Analysis Date: **29-Aug-2023 00:29**
Client ID: Run ID: **FID-14_445002** SeqNo: **7513798** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	U	0.0100								
Aliphatics >C8 - C10	U	0.0100								
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.204*	*0.0100*	*0.25*	*0*	*81.6*	*70 - 130*				

LCS Sample ID: **LCS-230828** Units: **mg/L** Analysis Date: **28-Aug-2023 23:12**
Client ID: Run ID: **FID-14_445002** SeqNo: **7513796** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	0.02094	0.0100	0.025	0	83.8	70 - 130				
Aliphatics >C8 - C10	0.02047	0.0100	0.025	0	81.9	70 - 130				
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.224*	*0.0100*	*0.25*	*0*	*89.6*	*70 - 130*				

LCSD Sample ID: **LCSD-230828** Units: **mg/L** Analysis Date: **28-Aug-2023 23:51**
Client ID: Run ID: **FID-14_445002** SeqNo: **7513797** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	0.02308	0.0100	0.025	0	92.3	70 - 130	0.02094	9.71	25	
Aliphatics >C8 - C10	0.02208	0.0100	0.025	0	88.3	70 - 130	0.02047	7.57	25	
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.2295*	*0.0100*	*0.25*	*0*	*91.8*	*70 - 130*	*0.224*	*2.44*	*25*	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R445009 (0) **Instrument: FID-15** **Method: MASSACHUSETTS VPH, FEB 2018, REV 2.1**

MBLK Sample ID: **MB-230828** Units: **mg/L** Analysis Date: **29-Aug-2023 00:29**
Client ID: Run ID: **FID-15_445009** SeqNo: **7513922** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	U	0.0100								
Surr: 2,5-Dibromotoluene (Aromatic)	*0.23*	*0.0100*	*0.25*	*0*	*92.0*	*70 - 130*				

LCS Sample ID: **LCS-230828** Units: **mg/L** Analysis Date: **28-Aug-2023 23:12**
Client ID: Run ID: **FID-15_445009** SeqNo: **7513920** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	0.08696	0.0100	0.1	0	87.0	70 - 130				
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2478*	*0.0100*	*0.25*	*0*	*99.1*	*70 - 130*				

LCSD Sample ID: **LCSD-230828** Units: **mg/L** Analysis Date: **28-Aug-2023 23:51**
Client ID: Run ID: **FID-15_445009** SeqNo: **7513921** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	0.1027	0.0100	0.1	0	103	70 - 130	0.08696	16.6	25	
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2533*	*0.0100*	*0.25*	*0*	*101*	*70 - 130*	*0.2478*	*2.22*	*25*	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: 199824 (0) **Instrument: HG04** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-199824** Units: **mg/L** Analysis Date: **01-Sep-2023 14:18**
Client ID: Run ID: **HG04_445377** SeqNo: **7522997** PrepDate: **01-Sep-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U		0.000200								

LCS Sample ID: **LCS-199824** Units: **mg/L** Analysis Date: **01-Sep-2023 14:20**
Client ID: Run ID: **HG04_445377** SeqNo: **7522998** PrepDate: **01-Sep-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00485		0.000200	0.005	0	97.0	80 - 120				

MS Sample ID: **HS23081523-09MS** Units: **mg/L** Analysis Date: **01-Sep-2023 14:39**
Client ID: Run ID: **HG04_445377** SeqNo: **7523007** PrepDate: **01-Sep-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00486		0.000200	0.005	-0.000001	97.2	75 - 125				

MSD Sample ID: **HS23081523-09MSD** Units: **mg/L** Analysis Date: **01-Sep-2023 14:43**
Client ID: Run ID: **HG04_445377** SeqNo: **7523008** PrepDate: **01-Sep-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00476		0.000200	0.005	-0.000001	95.2	75 - 125	0.00486	2.08	20	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: 199844 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLK-199844** Units: **mg/L** Analysis Date: **01-Sep-2023 23:59**
Client ID: Run ID: **ICPMS06_445386** SeqNo: **7523711** PrepDate: **01-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.00200								
Barium	U	0.00400								
Cadmium	U	0.00200								
Calcium	U	0.500								
Chromium	U	0.00400								
Iron	U	0.200								
Lead	U	0.00200								
Magnesium	0.01201	0.200								J
Manganese	U	0.00500								
Nickel	U	0.00200								
Potassium	U	0.200								
Selenium	U	0.00200								
Silver	U	0.00200								
Sodium	U	0.200								
Strontium	U	0.00500								
Vanadium	U	0.00500								
Zinc	U	0.00400								

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: 199844 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

LCS Sample ID: **LCS-199844** Units: **mg/L** Analysis Date: **02-Sep-2023 00:01**
Client ID: Run ID: **ICPMS06_445386** SeqNo: **7523712** PrepDate: **01-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04851	0.00200	0.05	0	97.0	80 - 120				
Barium	0.04706	0.00400	0.05	0	94.1	80 - 120				
Cadmium	0.0479	0.00200	0.05	0	95.8	80 - 120				
Calcium	4.892	0.500	5	0	97.8	80 - 120				
Chromium	0.04768	0.00400	0.05	0	95.4	80 - 120				
Iron	4.856	0.200	5	0	97.1	80 - 120				
Lead	0.04565	0.00200	0.05	0	91.3	80 - 120				
Magnesium	4.909	0.200	5	0	98.2	80 - 120				
Manganese	0.04777	0.00500	0.05	0	95.6	80 - 120				
Nickel	0.04816	0.00200	0.05	0	96.3	80 - 120				
Potassium	4.944	0.200	5	0	98.9	80 - 120				
Selenium	0.04848	0.00200	0.05	0	97.0	80 - 120				
Silver	0.04809	0.00200	0.05	0	96.2	80 - 120				
Sodium	4.931	0.200	5	0	98.6	80 - 120				
Strontium	0.09546	0.00500	0.1	0	95.5	80 - 120				
Vanadium	0.04727	0.00500	0.05	0	94.5	80 - 120				
Zinc	0.05004	0.00400	0.05	0	100	80 - 120				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: 199844 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MS Sample ID: **HS23081451-01MS** Units: **mg/L** Analysis Date: **02-Sep-2023 00:06**
Client ID: **019-995** Run ID: **ICPMS06_445386** SeqNo: **7523715** PrepDate: **01-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.0502	0.00200	0.05	0.000638	99.1	80 - 120				
Barium	0.2513	0.00400	0.05	0.2112	80.3	80 - 120				O
Cadmium	0.04778	0.00200	0.05	0.000173	95.2	80 - 120				
Calcium	28.46	0.500	5	24.35	82.3	80 - 120				O
Chromium	0.04833	0.00400	0.05	0.0006	95.5	80 - 120				
Iron	8.244	0.200	5	3.526	94.4	80 - 120				
Lead	0.0457	0.00200	0.05	0.000134	91.1	80 - 120				
Magnesium	12.12	0.200	5	7.662	89.2	80 - 120				
Manganese	0.4017	0.00500	0.05	0.3681	67.2	80 - 120				SO
Nickel	0.04832	0.00200	0.05	0.000235	96.2	80 - 120				
Potassium	7.515	0.200	5	2.653	97.2	80 - 120				
Selenium	0.04891	0.00200	0.05	0.000286	97.2	80 - 120				
Silver	0.04718	0.00200	0.05	0.000242	93.9	80 - 120				
Sodium	28.71	0.200	5	24.78	78.6	80 - 120				SO
Strontium	0.2915	0.00500	0.1	0.2069	84.5	80 - 120				
Vanadium	0.04832	0.00500	0.05	0.000514	95.6	80 - 120				
Zinc	0.05246	0.00400	0.05	0.002178	101	80 - 120				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: 199844 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MSD Sample ID: **HS23081451-01MSD** Units: **mg/L** Analysis Date: **02-Sep-2023 00:08**
Client ID: **019-995** Run ID: **ICPMS06_445386** SeqNo: **7523716** PrepDate: **01-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05092	0.00200	0.05	0.000638	101	80 - 120	0.0502	1.41	20	
Barium	0.2557	0.00400	0.05	0.2112	89.0	80 - 120	0.2513	1.71	20	O
Cadmium	0.04825	0.00200	0.05	0.000173	96.2	80 - 120	0.04778	0.993	20	
Calcium	28.68	0.500	5	24.35	86.5	80 - 120	28.46	0.74	20	O
Chromium	0.04878	0.00400	0.05	0.0006	96.4	80 - 120	0.04833	0.939	20	
Iron	8.435	0.200	5	3.526	98.2	80 - 120	8.244	2.29	20	
Lead	0.04678	0.00200	0.05	0.000134	93.3	80 - 120	0.0457	2.33	20	
Magnesium	12.27	0.200	5	7.662	92.2	80 - 120	12.12	1.22	20	
Manganese	0.4025	0.00500	0.05	0.3681	68.8	80 - 120	0.4017	0.193	20	SO
Nickel	0.04911	0.00200	0.05	0.000235	97.8	80 - 120	0.04832	1.63	20	
Potassium	7.499	0.200	5	2.653	96.9	80 - 120	7.515	0.208	20	
Selenium	0.04899	0.00200	0.05	0.000286	97.4	80 - 120	0.04891	0.17	20	
Silver	0.04769	0.00200	0.05	0.000242	94.9	80 - 120	0.04718	1.08	20	
Sodium	28.88	0.200	5	24.78	82.0	80 - 120	28.71	0.58	20	O
Strontium	0.2973	0.00500	0.1	0.2069	90.4	80 - 120	0.2915	1.99	20	
Vanadium	0.04901	0.00500	0.05	0.000514	97.0	80 - 120	0.04832	1.41	20	
Zinc	0.05299	0.00400	0.05	0.002178	102	80 - 120	0.05246	0.998	20	

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: 199844 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

PDS Sample ID: **HS23081451-01PDS** Units: **mg/L** Analysis Date: **02-Sep-2023 00:10**
Client ID: **019-995** Run ID: **ICPMS06_445386** SeqNo: **7523717** PrepDate: **01-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09675	0.00200	0.1	0.000638	96.1	75 - 125				
Barium	0.2881	0.00400	0.1	0.2112	76.9	75 - 125				
Cadmium	0.09349	0.00200	0.1	0.000173	93.3	75 - 125				
Chromium	0.09235	0.00400	0.1	0.0006	91.8	75 - 125				
Iron	12.5	0.200	10	3.526	89.8	75 - 125				
Lead	0.08625	0.00200	0.1	0.000134	86.1	75 - 125				
Magnesium	16.05	0.200	10	7.662	83.9	75 - 125				
Nickel	0.09123	0.00200	0.1	0.000235	91.0	75 - 125				
Potassium	11.8	0.200	10	2.653	91.5	75 - 125				
Selenium	0.09658	0.00200	0.1	0.000286	96.3	75 - 125				
Silver	0.09269	0.00200	0.1	0.000242	92.4	75 - 125				
Vanadium	0.09236	0.00500	0.1	0.000514	91.8	75 - 125				
Zinc	0.0962	0.00400	0.1	0.002178	94.0	75 - 125				

PDS Sample ID: **HS23081451-01PDS** Units: **mg/L** Analysis Date: **05-Sep-2023 12:55**
Client ID: **019-995** Run ID: **ICPMS06_445480** SeqNo: **7524757** PrepDate: **01-Sep-2023** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	1.339	0.0500	1	0.3771	96.2	75 - 125				
Sodium	126.1	2.00	100	27.19	98.9	75 - 125				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: 199844 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

SD Sample ID: **HS23081451-01SD** Units: **mg/L** Analysis Date: **02-Sep-2023 00:04**
Client ID: **019-995** Run ID: **ICPMS06_445386** SeqNo: **7523714** PrepDate: **01-Sep-2023** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Arsenic	U	0.0100					0.000638	0	10	
Barium	0.2145	0.0200					0.2112	1.56	10	
Cadmium	U	0.0100					0.000173	0	10	
Calcium	23.73	2.50					24.35	2.55	10	
Chromium	U	0.0200					0.0006	0	10	
Iron	3.586	1.00					3.526	1.72	10	
Lead	U	0.0100					0.000134	0	10	
Magnesium	7.97	1.00					7.662	4.02	10	
Nickel	U	0.0100					0.000235	0	10	
Potassium	2.593	1.00					2.653	2.24	10	
Selenium	U	0.0100					0.000286	0	10	
Silver	U	0.0100					0.000242	0	10	
Strontium	0.2168	0.0250					0.2069	4.77	10	
Vanadium	U	0.0250					0.000514	0	10	
Zinc	U	0.0200					0.002178	0	10	

SD Sample ID: **HS23081451-01SD** Units: **mg/L** Analysis Date: **05-Sep-2023 12:53**
Client ID: **019-995** Run ID: **ICPMS06_445480** SeqNo: **7524756** PrepDate: **01-Sep-2023** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Manganese	0.3721	0.250					0.3771	1.33	10	
Sodium	29.11	10.0					27.19	7.06	10	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R444813 (0) **Instrument: VOA4** **Method: LOW LEVEL VOLATILES BY SW8260C**

MBLK Sample ID: **VBLKW-230824** Units: **ug/L** Analysis Date: **24-Aug-2023 22:41**
Client ID: Run ID: **VOA4_444813** SeqNo: **7509350** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	1.0								
Ethylbenzene	U	1.0								
m,p-Xylene	U	2.0								
o-Xylene	U	1.0								
Toluene	U	1.0								
Xylenes, Total	U	3.0								
Surr: 1,2-Dichloroethane-d4	*49.54*	*1.0*	*50*	*0*	*99.1*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*48.15*	*1.0*	*50*	*0*	*96.3*	*77 - 113*				
Surr: Dibromofluoromethane	*53.32*	*1.0*	*50*	*0*	*107*	*73 - 126*				
Surr: Toluene-d8	*46.92*	*1.0*	*50*	*0*	*93.8*	*81 - 120*				

LCS Sample ID: **VLCSW-230824** Units: **ug/L** Analysis Date: **24-Aug-2023 21:55**
Client ID: Run ID: **VOA4_444813** SeqNo: **7509349** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.61	1.0	20	0	93.0	74 - 120				
Ethylbenzene	19.05	1.0	20	0	95.2	77 - 117				
m,p-Xylene	37.4	2.0	40	0	93.5	77 - 122				
o-Xylene	18.71	1.0	20	0	93.5	75 - 119				
Toluene	19.87	1.0	20	0	99.3	77 - 118				
Xylenes, Total	56.11	3.0	60	0	93.5	75 - 122				
Surr: 1,2-Dichloroethane-d4	*48.51*	*1.0*	*50*	*0*	*97.0*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*50.32*	*1.0*	*50*	*0*	*101*	*77 - 113*				
Surr: Dibromofluoromethane	*49.68*	*1.0*	*50*	*0*	*99.4*	*73 - 126*				
Surr: Toluene-d8	*48.22*	*1.0*	*50*	*0*	*96.4*	*81 - 120*				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R444813 (0) **Instrument: VOA4** **Method: LOW LEVEL VOLATILES BY SW8260C**

MS Sample ID: **HS23081217-01MS** Units: **ug/L** Analysis Date: **25-Aug-2023 00:37**
Client ID: Run ID: **VOA4_444813** SeqNo: **7509355** PrepDate: DF: **5000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	94080	5000	100000	0	94.1	70 - 127				
Ethylbenzene	94190	5000	100000	0	94.2	70 - 124				
m,p-Xylene	187000	10000	200000	0	93.5	70 - 130				
o-Xylene	92180	5000	100000	0	92.2	70 - 124				
Toluene	99470	5000	100000	0	99.5	70 - 123				
Xylenes, Total	279200	15000	300000	0	93.1	70 - 130				
Surr: 1,2-Dichloroethane-d4	*254800*	*5000*	*250000*	*0*	*102*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*255500*	*5000*	*250000*	*0*	*102*	*77 - 113*				
Surr: Dibromofluoromethane	*262600*	*5000*	*250000*	*0*	*105*	*77 - 123*				
Surr: Toluene-d8	*238400*	*5000*	*250000*	*0*	*95.3*	*82 - 127*				

MSD Sample ID: **HS23081217-01MSD** Units: **ug/L** Analysis Date: **25-Aug-2023 01:00**
Client ID: Run ID: **VOA4_444813** SeqNo: **7509356** PrepDate: DF: **5000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	89510	5000	100000	0	89.5	70 - 127	94080	4.97	20	
Ethylbenzene	87890	5000	100000	0	87.9	70 - 124	94190	6.91	20	
m,p-Xylene	175200	10000	200000	0	87.6	70 - 130	187000	6.5	20	
o-Xylene	87040	5000	100000	0	87.0	70 - 124	92180	5.74	20	
Toluene	93540	5000	100000	0	93.5	70 - 123	99470	6.14	20	
Xylenes, Total	262200	15000	300000	0	87.4	70 - 130	279200	6.25	20	
Surr: 1,2-Dichloroethane-d4	*259300*	*5000*	*250000*	*0*	*104*	*70 - 126*	*254800*	*1.77*	*20*	
Surr: 4-Bromofluorobenzene	*254900*	*5000*	*250000*	*0*	*102*	*77 - 113*	*255500*	*0.227*	*20*	
Surr: Dibromofluoromethane	*269600*	*5000*	*250000*	*0*	*108*	*77 - 123*	*262600*	*2.62*	*20*	
Surr: Toluene-d8	*238500*	*5000*	*250000*	*0*	*95.4*	*82 - 127*	*238400*	*0.039*	*20*	

The following samples were analyzed in this batch: HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R444923 (0) **Instrument: VOA4** **Method: LOW LEVEL VOLATILES BY SW8260C**

MBLK Sample ID: **VBLKW-230824** Units: **ug/L** Analysis Date: **25-Aug-2023 23:15**
Client ID: Run ID: **VOA4_444923** SeqNo: **7511738** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	1.0								
Ethylbenzene	U	1.0								
m,p-Xylene	U	2.0								
o-Xylene	U	1.0								
Toluene	U	1.0								
Xylenes, Total	U	3.0								
Surr: 1,2-Dichloroethane-d4	*51.13*	*1.0*	*50*	*0*	*102*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*47.42*	*1.0*	*50*	*0*	*94.8*	*77 - 113*				
Surr: Dibromofluoromethane	*52.49*	*1.0*	*50*	*0*	*105*	*73 - 126*				
Surr: Toluene-d8	*45.51*	*1.0*	*50*	*0*	*91.0*	*81 - 120*				

LCS Sample ID: **VLCSW-230824** Units: **ug/L** Analysis Date: **25-Aug-2023 22:29**
Client ID: Run ID: **VOA4_444923** SeqNo: **7511737** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.44	1.0	20	0	92.2	74 - 120				
Ethylbenzene	17.68	1.0	20	0	88.4	77 - 117				
m,p-Xylene	36.66	2.0	40	0	91.6	77 - 122				
o-Xylene	18.58	1.0	20	0	92.9	75 - 119				
Toluene	19.16	1.0	20	0	95.8	77 - 118				
Xylenes, Total	55.24	3.0	60	0	92.1	75 - 122				
Surr: 1,2-Dichloroethane-d4	*47.51*	*1.0*	*50*	*0*	*95.0*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*50.2*	*1.0*	*50*	*0*	*100*	*77 - 113*				
Surr: Dibromofluoromethane	*51.19*	*1.0*	*50*	*0*	*102*	*73 - 126*				
Surr: Toluene-d8	*46.25*	*1.0*	*50*	*0*	*92.5*	*81 - 120*				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R444923 (0) **Instrument: VOA4** **Method: LOW LEVEL VOLATILES BY SW8260C**

MS Sample ID: **HS23081539-03MS** Units: **ug/L** Analysis Date: **26-Aug-2023 00:46**
Client ID: Run ID: **VOA4_444923** SeqNo: **7511742** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.59	1.0	20	0	92.9	70 - 127				
Ethylbenzene	18.99	1.0	20	0	95.0	70 - 124				
m,p-Xylene	37.49	2.0	40	0	93.7	70 - 130				
o-Xylene	18.5	1.0	20	0	92.5	70 - 124				
Toluene	20.25	1.0	20	0	101	70 - 123				
Xylenes, Total	55.98	3.0	60	0	93.3	70 - 130				
Surr: 1,2-Dichloroethane-d4	*47.17*	*1.0*	*50*	*0*	*94.3*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*51.05*	*1.0*	*50*	*0*	*102*	*77 - 113*				
Surr: Dibromofluoromethane	*48.79*	*1.0*	*50*	*0*	*97.6*	*77 - 123*				
Surr: Toluene-d8	*47.11*	*1.0*	*50*	*0*	*94.2*	*82 - 127*				

MSD Sample ID: **HS23081539-03MSD** Units: **ug/L** Analysis Date: **26-Aug-2023 01:09**
Client ID: Run ID: **VOA4_444923** SeqNo: **7511743** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.61	1.0	20	0	88.1	70 - 127	18.59	5.39	20	
Ethylbenzene	18.33	1.0	20	0	91.7	70 - 124	18.99	3.52	20	
m,p-Xylene	36.89	2.0	40	0	92.2	70 - 130	37.49	1.61	20	
o-Xylene	17.91	1.0	20	0	89.6	70 - 124	18.5	3.22	20	
Toluene	19.26	1.0	20	0	96.3	70 - 123	20.25	5.05	20	
Xylenes, Total	54.8	3.0	60	0	91.3	70 - 130	55.98	2.14	20	
Surr: 1,2-Dichloroethane-d4	*47.71*	*1.0*	*50*	*0*	*95.4*	*70 - 126*	*47.17*	*1.12*	*20*	
Surr: 4-Bromofluorobenzene	*50.09*	*1.0*	*50*	*0*	*100*	*77 - 113*	*51.05*	*1.89*	*20*	
Surr: Dibromofluoromethane	*50.31*	*1.0*	*50*	*0*	*101*	*77 - 123*	*48.79*	*3.06*	*20*	
Surr: Toluene-d8	*47.99*	*1.0*	*50*	*0*	*96.0*	*82 - 127*	*47.11*	*1.84*	*20*	

The following samples were analyzed in this batch: HS23081451-01

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R444796 (0) **Instrument: WetChem_HS** **Method: SULFIDE BY SM4500 S2-F-2011**

MBLK Sample ID: **MBLK-R444796** Units: **mg/L** Analysis Date: **25-Aug-2023 07:30**
Client ID: Run ID: **WetChem_HS_444796** SeqNo: **7508879** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	U	2.00								

LCS Sample ID: **LCS-R444796** Units: **mg/L** Analysis Date: **25-Aug-2023 07:30**
Client ID: Run ID: **WetChem_HS_444796** SeqNo: **7508878** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.88	2.00	25	0	87.5	85 - 115				

LCSD Sample ID: **LCSD-R444796** Units: **mg/L** Analysis Date: **25-Aug-2023 07:30**
Client ID: Run ID: **WetChem_HS_444796** SeqNo: **7508877** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	22.08	2.00	25	0	88.3	85 - 115	21.88	0.91	20	

MS Sample ID: **HS23081451-01MS** Units: **mg/L** Analysis Date: **25-Aug-2023 07:30**
Client ID: **019-995** Run ID: **WetChem_HS_444796** SeqNo: **7508880** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.88	2.00	25	-1.72	94.4	80 - 120				

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R444938 (0) **Instrument: WetChem_HS** **Method: HYDROGEN SULFIDE BY E376.1**

MBLK Sample ID: **MBLK-R444938** Units: **mg/L** Analysis Date: **25-Aug-2023 07:30**
Client ID: Run ID: **WetChem_HS_444938** SeqNo: **7511979** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	U	1.00								

LCS Sample ID: **LCS-R444938** Units: **mg/L** Analysis Date: **25-Aug-2023 07:30**
Client ID: Run ID: **WetChem_HS_444938** SeqNo: **7511978** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	23.25	1.00	25	0	93.0	80 - 120				

LCSD Sample ID: **LCSD-R444938** Units: **mg/L** Analysis Date: **25-Aug-2023 07:30**
Client ID: Run ID: **WetChem_HS_444938** SeqNo: **7511977** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	23.46	1.00	25	0	93.8	80 - 120	23.25	0.91	20	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R444964 (0) **Instrument: Skalar 03** **Method: ALKALINITY BY -2011**

MBLK Sample ID: **MBLK-08282023** Units: **mg/L** Analysis Date: **28-Aug-2023 12:10**
Client ID: Run ID: **Skalar 03_444964** SeqNo: **7512446** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.00								
Alkalinity, Carbonate (As CaCO3)	U	5.00								

LCS Sample ID: **LCS-08282023** Units: **mg/L** Analysis Date: **28-Aug-2023 12:16**
Client ID: Run ID: **Skalar 03_444964** SeqNo: **7512447** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	936.2	5.00	1000	0	93.6	85 - 115				

LCSD Sample ID: **LCSD-08282023** Units: **mg/L** Analysis Date: **28-Aug-2023 12:23**
Client ID: Run ID: **Skalar 03_444964** SeqNo: **7512448** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	933.8	5.00	1000	0	93.4	85 - 115	936.2	0.257	20	

DUP Sample ID: **HS23081400-01DUP** Units: **mg/L** Analysis Date: **28-Aug-2023 12:34**
Client ID: Run ID: **Skalar 03_444964** SeqNo: **7512450** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	232.2	5.00					233.4	0.515	20	
Alkalinity, Carbonate (As CaCO3)	U	5.00					0	0	20	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R444965 (0) **Instrument: Skalar 03** **Method: PH BY SM4500H+ B-2011**

DUP Sample ID: **HS23081400-01DUP** Units: **pH Units** Analysis Date: **28-Aug-2023 12:34**
Client ID: Run ID: **Skalar 03_444965** SeqNo: **7512468** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.73	0.100					7.72	0.129	10	
Temp Deg C @pH	21.3	0					22.3	4.59	10	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R445075 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-08282023** Units: **mg/L** Analysis Date: **28-Aug-2023 12:30**
Client ID: Run ID: **Balance1_445075** SeqNo: **7515296** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	U	10.0								

LCS Sample ID: **WLCS-08282023** Units: **mg/L** Analysis Date: **28-Aug-2023 12:30**
Client ID: Run ID: **Balance1_445075** SeqNo: **7515295** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1042	10.0	1000	0	104	85 - 115				

DUP Sample ID: **HS23081454-02DUP** Units: **mg/L** Analysis Date: **28-Aug-2023 12:30**
Client ID: Run ID: **Balance1_445075** SeqNo: **7515287** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	606	10.0					608	0.329	20	

DUP Sample ID: **HS23081451-05DUP** Units: **mg/L** Analysis Date: **28-Aug-2023 12:30**
Client ID: **019-1055** Run ID: **Balance1_445075** SeqNo: **7515280** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	240	10.0					238	0.837	20	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R445450 (0) **Instrument: TOC_05** **Method: TOTAL ORGANIC CARBON BY SW9060A**

MBLK Sample ID: **MBLK-09012023** Units: **mg/L** Analysis Date: **01-Sep-2023 11:47**
Client ID: Run ID: **TOC_05_445450** SeqNo: **7524103** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	U	1.00								

LCS Sample ID: **LCS-09012023** Units: **mg/L** Analysis Date: **01-Sep-2023 12:07**
Client ID: Run ID: **TOC_05_445450** SeqNo: **7524104** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.934	1.00	10	0	99.3	85 - 115				

LCSD Sample ID: **LCSD-09012023** Units: **mg/L** Analysis Date: **01-Sep-2023 12:26**
Client ID: Run ID: **TOC_05_445450** SeqNo: **7524105** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.837	1.00	10	0	98.4	85 - 115	9.934	0.981	20	

MS Sample ID: **HS23081451-01MS** Units: **mg/L** Analysis Date: **01-Sep-2023 14:25**
Client ID: **019-995** Run ID: **TOC_05_445450** SeqNo: **7524109** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	12.7	1.00	10	3.835	88.6	80 - 120				

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R445658 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **06-Sep-2023 14:18**
Client ID: Run ID: **ICS-Integrion_445658** SeqNo: **7528728** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	U	0.100								
Chloride	U	0.500								
Sulfate	U	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **06-Sep-2023 14:24**
Client ID: Run ID: **ICS-Integrion_445658** SeqNo: **7528729** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	4.376	0.100	4	0	109	80 - 120				
Chloride	18.96	0.500	20	0	94.8	80 - 120				
Sulfate	19.81	0.500	20	0	99.1	80 - 120				

MS Sample ID: **HS23090255-01MS** Units: **mg/L** Analysis Date: **06-Sep-2023 16:08**
Client ID: Run ID: **ICS-Integrion_445658** SeqNo: **7528744** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.072	0.100	2	0	104	80 - 120				
Chloride	12.2	0.500	10	2.545	96.6	80 - 120				
Sulfate	30.34	0.500	10	21.32	90.2	80 - 120				

MS Sample ID: **HS23081451-01MS** Units: **mg/L** Analysis Date: **06-Sep-2023 14:36**
Client ID: **019-995** Run ID: **ICS-Integrion_445658** SeqNo: **7528731** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.265	0.100	2	0	113	80 - 120				
Chloride	31.99	0.500	10	22.21	97.8	80 - 120				
Sulfate	14.48	0.500	10	4.113	104	80 - 120				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081451

QC BATCH REPORT

Batch ID: R445658 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MSD Sample ID: **HS23090255-01MSD** Units: **mg/L** Analysis Date: **06-Sep-2023 16:14**
Client ID: Run ID: **ICS-Integrion_445658** SeqNo: **7528745** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.113	0.100	2	0	106	80 - 120	2.072	1.96	20	
Chloride	12.18	0.500	10	2.545	96.3	80 - 120	12.2	0.213	20	
Sulfate	30.27	0.500	10	21.32	89.5	80 - 120	30.34	0.25	20	

MSD Sample ID: **HS23081451-01MSD** Units: **mg/L** Analysis Date: **06-Sep-2023 14:42**
Client ID: **019-995** Run ID: **ICS-Integrion_445658** SeqNo: **7528732** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.297	0.100	2	0	115	80 - 120	2.265	1.41	20	
Chloride	31.76	0.500	10	22.21	95.5	80 - 120	31.99	0.734	20	
Sulfate	14.36	0.500	10	4.113	102	80 - 120	14.48	0.83	20	

The following samples were analyzed in this batch: HS23081451-01 HS23081451-02 HS23081451-03 HS23081451-04 HS23081451-05

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: **HS23081451**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID: HS23081451 **Date/Time Received:** **23-Aug-2023 13:00**

Client Name: ERMSW-HOU **Received by:** **Belinda Gomez**

Completed By:	/S/ Malcolm Burleson	23-Aug-2023 16:17	**Reviewed by:**	/S/ Bernadette A. Fini	24-Aug-2023 07:53
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **water** Carrier name: **Client**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:306536
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	0.3uc 0.2c /0.4uc 0.3c	ir31
Cooler(s)/Kit(s):	50711	
Date/Time sample(s) sent to storage:	08232023	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes: TOC vials received for all samples, no TOC indicated on COC.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070

Chain of Custody Form

Page ___ of ___

COC ID: 306536

HS23081451

Environmental Resources Mgmt.
Sulphur Dome

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	0101093	Project Name	Sulphur Dome	A	8260_LL_W (Low Level VOC (8260) BTEX)
Work Order		Project Number		B	MA EPH_W_LL (MA EPH)
Company Name	Environmental Resources Mgmt.	Bill To Company	Environmental Resources Mgmt	C	MA VPH_LA_W (MA VPH)
Send Report To	Scott Himes	Invoice Attn	Accounts Payable	D	WSC_anions_W (Cl, SO4, Br)
Address	CityCentre Four 840 W. Sam Houston Pkwy., Suite 6	Address	CityCentre Four 840 W. Sam Houston Pkwy., Suite 6	E	ALK_W 2320B (carb, bicarb), pH
				F	H2S_W (H2S)
City/State/Zip	Houston, TX, 77024	City/State/Zip	Houston, TX, 77024	G	HG_W (Mercury)
Phone	(281) 600-1000	Phone	(281) 600-1000	H	ICP_TWAs,Ba,Cd,Ca,Cr,Fe,Pb,Mg,Mn,K,Se,Ag,Na,Sr,Zn,Ni,V
Fax	(281) 600-1001	Fax	(281) 600-1001	I	S2-_PD_4500S F (Sulfide)
e-Mail Address	scott.himes@erm.com	e-Mail Address	ERMNAAccountsPayable@erm.com	J	TDS_W 2540C (TDS)

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	019-995	8/22/23	8:30	W	1,2,8	12	X	X	X	X	X	X	X	X	X	X	
2	019-582		9:30														
3	Cottages		10:30														
4	019-580		11:00														
5	019-1055		11:30														
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Taylar Brown TA/Ke Brown

Shipment Method:

Required Turnaround Time: (Check Box) [X] STD 10 W Days [ ] 5 W Days [ ] 2 W Days [ ] 24 hour [ ] Other

Results Due Date:

Relinquished by: Taylar Brown	Date: 8/23/23	Time: 13:00	Received by:	Notes: ERM Sulphur Dome	
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID	Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory): 8/23/23 LW	50111	0.3
				49342	0.4

QC Package: (Check One Box Below) [X] Level I [ ] Level II [ ] Level III [ ] Level IV [ ] EDD [ ] Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

TAT

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 13, 2023

Scott Himes
Environmental Resources Mgmt.
CityCentre Four
840 W. Sam Houston Pkwy., Suite 600
Houston, TX 77024

Work Order: **HS23081843**

Laboratory Results for: **Sulphur Dome**

Dear Scott Himes,

ALS Environmental received 2 sample(s) on Aug 29, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Bernadette A. Fini
Project Manager

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Work Order: HS23081843

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23081843-01	#189416 - 2700'	Water		28-Aug-2023 16:00	29-Aug-2023 11:00	☐
HS23081843-02	#189416 - 1300'	Water		28-Aug-2023 17:30	29-Aug-2023 11:00	☐

Client: Environmental Resources Mgmt. **CASE NARRATIVE**
Project: Sulphur Dome
Work Order: HS23081843

Work Order Comments

• Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.

The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.

GC Semivolatiles by Method MA EPH

Batch ID: 200118

Sample ID: #189416 - 1300' (HS23081843-02)

• Surrogate recoveries were outside of the control limits due to matrix interference.

• The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: #189416 - 2700' (HS23081843-01)

• Surrogate recoveries were outside of the control limits due to matrix interference.

• The surrogate recoveries could not be determined due to dilution below the calibration range.

GC Volatiles by Method MA VPH

Batch ID: R445237

Sample ID: #189416 - 2700' (HS23081843-01)

• Dilution required due to sample matrix. Sample is oily.

GCMS Volatiles by Method SW8260

Batch ID: R445670

Sample ID: #189416 - 1300' (HS23081843-02)

• Lowest possible dilution due to sample matrix.

Sample ID: #189416 - 2700' (HS23081843-01)

• Lowest possible dilution due to sample matrix.

Client: Environmental Resources Mgmt. **CASE NARRATIVE**
Project: Sulphur Dome
Work Order: HS23081843

Metals by Method SW6020A

Batch ID: 200087

Sample ID: #189416 - 1300' (HS23081843-02)

• Sample ran at a 20X dilution due to high concentration of Sodium.

Sample ID: #189416 - 2700' (HS23081843-01)

• Sample ran at a 20X dilution due to high concentration of Sodium.

Sample ID: HS23081750-01MS

• MS and MSD are for an unrelated sample

Sample ID: HS23081750-01PDS

• PDS is for an unrelated sample

Sample ID: HS23081750-01SD

• SD is for an unrelated sample

Metals by Method SW7470A

Batch ID: 200061

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM2320B

Batch ID: R445743

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM4500H+ B

Batch ID: R445744

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R446082

Sample ID: #189416 - 1300' (HS23081843-02)

• The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Sulfate)

Sample ID: #189416 - 2700' (HS23081843-01)

• The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Sulfate)

WetChemistry by Method E376.1

Batch ID: R445440

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Environmental Resources Mgmt. **CASE NARRATIVE**
Project: Sulphur Dome
Work Order: HS23081843

WetChemistry by Method M2540C

Batch ID: R445383

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM4500 S2-F

Batch ID: R445375

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: #189416 - 2700'
Collection Date: 28-Aug-2023 16:00

ANALYTICAL REPORT
WorkOrder:HS23081843
Lab ID:HS23081843-01
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: KDN
Benzene	U		5.0	25	ug/L	25	06-Sep-2023 18:20
Ethylbenzene	U		7.5	25	ug/L	25	06-Sep-2023 18:20
m,p-Xylene	U		12	50	ug/L	25	06-Sep-2023 18:20
o-Xylene	U		7.5	25	ug/L	25	06-Sep-2023 18:20
Toluene	U		5.0	25	ug/L	25	06-Sep-2023 18:20
Xylenes, Total	U		7.5	25	ug/L	25	06-Sep-2023 18:20
Surr: 1,2-Dichloroethane-d4	*95.1*			*70-126*	*%REC*	*25*	*06-Sep-2023 18:20*
Surr: 4-Bromofluorobenzene	*94.7*			*77-113*	*%REC*	*25*	*06-Sep-2023 18:20*
Surr: Dibromofluoromethane	*93.5*			*77-123*	*%REC*	*25*	*06-Sep-2023 18:20*
Surr: Toluene-d8	*100*			*82-127*	*%REC*	*25*	*06-Sep-2023 18:20*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8	U		1.00	1.00	mg/L	100	30-Aug-2023 19:10
Aliphatics >C8 - C10	U		1.00	1.00	mg/L	100	30-Aug-2023 19:10
Aromatics >C8 - C10	U		1.00	1.00	mg/L	100	30-Aug-2023 19:10
Surr: 2,5-Dibromotoluene (Aliphatic)	*91.1*			*70-130*	*%REC*	*100*	*30-Aug-2023 19:10*
Surr: 2,5-Dibromotoluene (Aromatic)	*103*			*70-130*	*%REC*	*100*	*30-Aug-2023 19:10*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 08-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12	**3.05**		**0.0200**	**0.0200**	**mg/L**	10	11-Sep-2023 17:24
Aliphatics >C12 - C16	**20.2**		**0.200**	**0.200**	**mg/L**	50	12-Sep-2023 09:41
Aliphatics >C16 - C35	**65.3**		**0.800**	**0.800**	**mg/L**	50	12-Sep-2023 09:41
Aromatics >C10 - C12	**0.714**		**0.0200**	**0.0200**	**mg/L**	10	11-Sep-2023 17:24
Aromatics >C12 - C16	**5.52**		**0.0800**	**0.0800**	**mg/L**	10	11-Sep-2023 17:24
Aromatics >C16 - C21	**9.75**		**0.0600**	**0.0600**	**mg/L**	10	11-Sep-2023 17:24
Aromatics >C21 - C35	**20.3**		**0.180**	**0.180**	**mg/L**	10	11-Sep-2023 17:24
Surr: 1-Chlorooctadecane	*870*	*S*		*40-140*	*%REC*	*10*	*11-Sep-2023 17:24*
Surr: 1-Chlorooctadecane	*0*	*S*		*40-140*	*%REC*	*50*	*12-Sep-2023 09:41*
Surr: 2-Bromonaphthalene	*386*	*S*		*40-140*	*%REC*	*10*	*11-Sep-2023 17:24*
Surr: 2-Fluorobiphenyl	*584*	*S*		*40-140*	*%REC*	*10*	*11-Sep-2023 17:24*
Surr: o-Terphenyl	*292*	*S*		*40-140*	*%REC*	*10*	*11-Sep-2023 17:24*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: #189416 - 2700'
Collection Date: 28-Aug-2023 16:00

ANALYTICAL REPORT
WorkOrder:HS23081843
Lab ID:HS23081843-01
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Sep-2023		Analyst: JC
Arsenic	U		0.00800	0.0400	mg/L	20	11-Sep-2023 20:18
Barium	**80.6**		**3.80**	**8.00**	**mg/L**	2000	12-Sep-2023 12:12
Cadmium	U		0.00400	0.0400	mg/L	20	11-Sep-2023 20:18
Calcium	**3,050**		**0.680**	**10.0**	**mg/L**	20	11-Sep-2023 20:18
Chromium	**0.0606**	J	**0.00800**	**0.0800**	**mg/L**	20	11-Sep-2023 20:18
Iron	**32.4**		**0.240**	**4.00**	**mg/L**	20	11-Sep-2023 20:18
Lead	**0.0342**	J	**0.0120**	**0.0400**	**mg/L**	20	11-Sep-2023 20:18
Magnesium	**843**		**0.200**	**4.00**	**mg/L**	20	11-Sep-2023 20:18
Manganese	**6.60**		**0.0140**	**0.100**	**mg/L**	20	11-Sep-2023 20:18
Nickel	**0.125**		**0.0120**	**0.0400**	**mg/L**	20	11-Sep-2023 20:18
Potassium	**190**		**0.360**	**4.00**	**mg/L**	20	11-Sep-2023 20:18
Selenium	U		0.0220	0.0400	mg/L	20	11-Sep-2023 20:18
Silver	U		0.00400	0.0400	mg/L	20	11-Sep-2023 20:18
Sodium	**47,900**		**28.0**	**400**	**mg/L**	2000	12-Sep-2023 12:12
Strontium	**162**		**0.400**	**10.0**	**mg/L**	2000	12-Sep-2023 12:12
Vanadium	U		0.0120	0.100	mg/L	20	11-Sep-2023 20:18
Zinc	**1.54**		**0.0400**	**0.0800**	**mg/L**	20	11-Sep-2023 20:18
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 07-Sep-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	07-Sep-2023 14:26
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	**23.3**		**0.500**	**1.00**	**mg/L**	1	01-Sep-2023 12:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**149,000**		**5.00**	**10.0**	**mg/L**	1	31-Aug-2023 11:52
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**94.0**		**5.00**	**5.00**	**mg/L**	1	07-Sep-2023 13:03
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	07-Sep-2023 13:03
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	01-Sep-2023 11:00
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.06**	H	**0.100**	**0.100**	**pH Units**	1	07-Sep-2023 13:03
Temp Deg C @pH	**20.1**	H	**0**	**0**	**°C**	1	07-Sep-2023 13:03
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	**95.7**		**1.50**	**5.00**	**mg/L**	50	12-Sep-2023 11:52
Chloride	**72,600**		**200**	**500**	**mg/L**	1000	12-Sep-2023 11:58
Sulfate	U		10.0	25.0	mg/L	50	12-Sep-2023 11:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: #189416 - 1300'
Collection Date: 28-Aug-2023 17:30

ANALYTICAL REPORT
WorkOrder:HS23081843
Lab ID:HS23081843-02
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: KDN
Benzene	U		5.0	25	ug/L	25	06-Sep-2023 18:41
Ethylbenzene	U		7.5	25	ug/L	25	06-Sep-2023 18:41
m,p-Xylene	U		12	50	ug/L	25	06-Sep-2023 18:41
o-Xylene	U		7.5	25	ug/L	25	06-Sep-2023 18:41
Toluene	U		5.0	25	ug/L	25	06-Sep-2023 18:41
Xylenes, Total	U		7.5	25	ug/L	25	06-Sep-2023 18:41
Surr: 1,2-Dichloroethane-d4	*94.9*			*70-126*	*%REC*	*25*	*06-Sep-2023 18:41*
Surr: 4-Bromofluorobenzene	*96.6*			*77-113*	*%REC*	*25*	*06-Sep-2023 18:41*
Surr: Dibromofluoromethane	*93.6*			*77-123*	*%REC*	*25*	*06-Sep-2023 18:41*
Surr: Toluene-d8	*100*			*82-127*	*%REC*	*25*	*06-Sep-2023 18:41*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8	**1.08**		**1.00**	**1.00**	**mg/L**	100	30-Aug-2023 19:49
Aliphatics >C8 - C10	**2.58**		**1.00**	**1.00**	**mg/L**	100	30-Aug-2023 19:49
Aromatics >C8 - C10	**1.23**		**1.00**	**1.00**	**mg/L**	100	30-Aug-2023 19:49
Surr: 2,5-Dibromotoluene (Aliphatic)	*108*			*70-130*	*%REC*	*100*	*30-Aug-2023 19:49*
Surr: 2,5-Dibromotoluene (Aromatic)	*118*			*70-130*	*%REC*	*100*	*30-Aug-2023 19:49*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 08-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12	**5.78**		**0.0400**	**0.0400**	**mg/L**	20	12-Sep-2023 10:38
Aliphatics >C12 - C16	**37.4**		**0.400**	**0.400**	**mg/L**	100	12-Sep-2023 10:09
Aliphatics >C16 - C35	**118**		**1.60**	**1.60**	**mg/L**	100	12-Sep-2023 10:09
Aromatics >C10 - C12	**1.62**		**0.0200**	**0.0200**	**mg/L**	10	11-Sep-2023 18:50
Aromatics >C12 - C16	**12.8**		**0.0800**	**0.0800**	**mg/L**	10	11-Sep-2023 18:50
Aromatics >C16 - C21	**19.5**		**0.120**	**0.120**	**mg/L**	20	12-Sep-2023 11:07
Aromatics >C21 - C35	**38.2**		**0.360**	**0.360**	**mg/L**	20	12-Sep-2023 11:07
Surr: 1-Chlorooctadecane	*0*	*S*		*40-140*	*%REC*	*100*	*12-Sep-2023 10:09*
Surr: 1-Chlorooctadecane	*1190*	*S*		*40-140*	*%REC*	*20*	*12-Sep-2023 10:38*
Surr: 2-Bromonaphthalene	*655*	*S*		*40-140*	*%REC*	*10*	*11-Sep-2023 18:50*
Surr: 2-Bromonaphthalene	*625*	*S*		*40-140*	*%REC*	*20*	*12-Sep-2023 11:07*
Surr: 2-Fluorobiphenyl	*723*	*S*		*40-140*	*%REC*	*10*	*11-Sep-2023 18:50*
Surr: 2-Fluorobiphenyl	*1460*	*S*		*40-140*	*%REC*	*20*	*12-Sep-2023 11:07*
Surr: o-Terphenyl	*767*	*S*		*40-140*	*%REC*	*10*	*11-Sep-2023 18:50*
Surr: o-Terphenyl	*659*	*S*		*40-140*	*%REC*	*20*	*12-Sep-2023 11:07*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: #189416 - 1300'
Collection Date: 28-Aug-2023 17:30

ANALYTICAL REPORT
WorkOrder:HS23081843
Lab ID:HS23081843-02
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Sep-2023		Analyst: JC
Arsenic	U		0.00800	0.0400	mg/L	20	11-Sep-2023 20:22
Barium	**67.4**		**3.80**	**8.00**	**mg/L**	2000	12-Sep-2023 12:14
Cadmium	U		0.00400	0.0400	mg/L	20	11-Sep-2023 20:22
Calcium	**2,920**		**0.680**	**10.0**	**mg/L**	20	11-Sep-2023 20:22
Chromium	**0.0593**	J	**0.00800**	**0.0800**	**mg/L**	20	11-Sep-2023 20:22
Iron	**31.1**		**0.240**	**4.00**	**mg/L**	20	11-Sep-2023 20:22
Lead	**0.0839**		**0.0120**	**0.0400**	**mg/L**	20	11-Sep-2023 20:22
Magnesium	**832**		**0.200**	**4.00**	**mg/L**	20	11-Sep-2023 20:22
Manganese	**6.78**		**0.0140**	**0.100**	**mg/L**	20	11-Sep-2023 20:22
Nickel	**0.124**		**0.0120**	**0.0400**	**mg/L**	20	11-Sep-2023 20:22
Potassium	**182**		**0.360**	**4.00**	**mg/L**	20	11-Sep-2023 20:22
Selenium	U		0.0220	0.0400	mg/L	20	11-Sep-2023 20:22
Silver	U		0.00400	0.0400	mg/L	20	11-Sep-2023 20:22
Sodium	**45,400**		**28.0**	**400**	**mg/L**	2000	12-Sep-2023 12:14
Strontium	**149**		**0.400**	**10.0**	**mg/L**	2000	12-Sep-2023 12:14
Vanadium	U		0.0120	0.100	mg/L	20	11-Sep-2023 20:22
Zinc	**7.10**		**0.0400**	**0.0800**	**mg/L**	20	11-Sep-2023 20:22
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 07-Sep-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	07-Sep-2023 14:28
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	**23.1**		**0.500**	**1.00**	**mg/L**	1	01-Sep-2023 12:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**159,000**		**5.00**	**10.0**	**mg/L**	1	31-Aug-2023 11:52
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**95.9**		**5.00**	**5.00**	**mg/L**	1	07-Sep-2023 13:13
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	07-Sep-2023 13:13
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	01-Sep-2023 11:00
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.10**	H	**0.100**	**0.100**	**pH Units**	1	07-Sep-2023 13:13
Temp Deg C @pH	**19.1**	H	**0**	**0**	**°C**	1	07-Sep-2023 13:13
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	**96.4**		**1.50**	**5.00**	**mg/L**	50	12-Sep-2023 12:03
Chloride	**70,500**		**200**	**500**	**mg/L**	1000	12-Sep-2023 12:09
Sulfate	U		10.0	25.0	mg/L	50	12-Sep-2023 12:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

Batch ID: 200061 **Start Date:** 07 Sep 2023 08:30 **End Date:** 07 Sep 2023 08:30
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23081843-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081843-02		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 200087 **Start Date:** 11 Sep 2023 08:00 **End Date:** 11 Sep 2023 08:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23081843-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23081843-02		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 200118 **Start Date:** 08 Sep 2023 11:37 **End Date:** 08 Sep 2023 11:37
Method: MA EPH EXTRACTION-FRACTIONATION **Prep Code:** MA EPH_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23081843-01	1	1000 (mL)	4 (mL)	0.004	1-litre amber glass, HCL to pH <2
HS23081843-02	1	1000 (mL)	4 (mL)	0.004	1-litre amber glass, HCL to pH <2

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 200061 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00		07 Sep 2023 08:30	07 Sep 2023 14:26	1
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30		07 Sep 2023 08:30	07 Sep 2023 14:28	1
Batch ID: 200087 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00		11 Sep 2023 08:00	12 Sep 2023 12:12	2000
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00		11 Sep 2023 08:00	11 Sep 2023 20:18	20
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30		11 Sep 2023 08:00	12 Sep 2023 12:14	2000
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30		11 Sep 2023 08:00	11 Sep 2023 20:22	20
Batch ID: 200118 (0)	**Test Name :** MASSACHUSETTS EPH R2.1, DEC 2019				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00		08 Sep 2023 11:37	12 Sep 2023 09:41	50
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00		08 Sep 2023 11:37	11 Sep 2023 17:24	10
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00		08 Sep 2023 11:37	11 Sep 2023 17:24	10
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30		08 Sep 2023 11:37	12 Sep 2023 10:38	20
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30		08 Sep 2023 11:37	12 Sep 2023 11:07	20
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30		08 Sep 2023 11:37	12 Sep 2023 10:09	100
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30		08 Sep 2023 11:37	11 Sep 2023 18:50	10
Batch ID: R445237 (0)	**Test Name :** MASSACHUSETTS VPH, FEB 2018, REV 2.1				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			30 Aug 2023 19:10	100
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			30 Aug 2023 19:49	100
Batch ID: R445238 (0)	**Test Name :** MASSACHUSETTS VPH, FEB 2018, REV 2.1				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			30 Aug 2023 19:10	100
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			30 Aug 2023 19:49	100
Batch ID: R445375 (0)	**Test Name :** SULFIDE BY SM4500 S2-F-2011				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			01 Sep 2023 11:00	1
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			01 Sep 2023 11:00	1
Batch ID: R445383 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			31 Aug 2023 11:52	1
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			31 Aug 2023 11:52	1
Batch ID: R445440 (0)	**Test Name :** HYDROGEN SULFIDE BY E376.1				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			01 Sep 2023 12:30	1
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			01 Sep 2023 12:30	1
Batch ID: R445670 (0)	**Test Name :** LOW LEVEL VOLATILES BY SW8260C				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			06 Sep 2023 18:20	25
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			06 Sep 2023 18:41	25
Batch ID: R445743 (0)	**Test Name :** ALKALINITY BY -2011				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			07 Sep 2023 13:03	1
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			07 Sep 2023 13:13	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R445744 (0)	**Test Name :** PH BY SM4500H+ B-2011				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			07 Sep 2023 13:03	1
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			07 Sep 2023 13:13	1
Batch ID: R446082 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			12 Sep 2023 11:58	1000
HS23081843-01	#189416 - 2700'	28 Aug 2023 16:00			12 Sep 2023 11:52	50
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			12 Sep 2023 12:09	1000
HS23081843-02	#189416 - 1300'	28 Aug 2023 17:30			12 Sep 2023 12:03	50

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200118 (0) **Instrument: FID23** **Method: MASSACHUSETTS EPH R2.1, DEC 2019**

MBLK Sample ID: **MBLK-200118** Units: **mg/L** Analysis Date: **11-Sep-2023 15:58**
Client ID: Run ID: **FID23_446097** SeqNo: **7538575** PrepDate: **08-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	U	0.00100								
Aliphatics >C12 - C16	U	0.00200								
Aliphatics >C16 - C35	U	0.00800								
Surr: 1-Chlorooctadecane	*0.02481*	*0*	*0.04*	*0*	*62.0*	*40 - 140*				

MBLK Sample ID: **MBLK-200118** Units: **mg/L** Analysis Date: **11-Sep-2023 15:58**
Client ID: Run ID: **FID-22_446093** SeqNo: **7538448** PrepDate: **08-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	U	0.00100								
Aromatics >C12 - C16	U	0.00400								
Aromatics >C16 - C21	U	0.00300								
Aromatics >C21 - C35	U	0.00900								
Surr: 2-Bromonaphthalene	*0.03706*	*0*	*0.04*	*0*	*92.6*	*40 - 140*				
Surr: 2-Fluorobiphenyl	*0.03841*	*0*	*0.04*	*0*	*96.0*	*40 - 140*				
Surr: o-Terphenyl	*0.0259*	*0*	*0.04*	*0*	*64.7*	*40 - 140*				

LCS Sample ID: **LCS-200118** Units: **mg/L** Analysis Date: **11-Sep-2023 16:27**
Client ID: Run ID: **FID23_446097** SeqNo: **7538576** PrepDate: **08-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	0.06383	0.00100	0.05	0	128	40 - 140				
Aliphatics >C12 - C16	0.1391	0.00200	0.1	0	139	40 - 140				
Aliphatics >C16 - C35	0.5596	0.00800	0.4	0	140	40 - 140				
Surr: 1-Chlorooctadecane	*0.04307*	*0*	*0.04*	*0*	*108*	*40 - 140*				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200118 (0) **Instrument: FID23** **Method: MASSACHUSETTS EPH R2.1, DEC 2019**

LCS Sample ID: **LCS-200118** Units: **mg/L** Analysis Date: **12-Sep-2023 11:36**
Client ID: Run ID: **FID-22_446093** SeqNo: **7538455** PrepDate: **08-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	0.04114	0.00100	0.05	0	82.3	40 - 140				
Aromatics >C12 - C16	0.1751	0.00400	0.2	0	87.6	40 - 140				
Aromatics >C16 - C21	0.1388	0.00300	0.15	0	92.5	40 - 140				
Aromatics >C21 - C35	0.4194	0.00900	0.45	0	93.2	40 - 140				
Surr: 2-Bromonaphthalene	*0.03376*	*0*	*0.04*	*0*	*84.4*	*40 - 140*				
Surr: 2-Fluorobiphenyl	*0.0235*	*0*	*0.04*	*0*	*58.8*	*40 - 140*				
Surr: o-Terphenyl	*0.02602*	*0*	*0.04*	*0*	*65.0*	*40 - 140*				

LCSD Sample ID: **LCSD-200118** Units: **mg/L** Analysis Date: **11-Sep-2023 16:56**
Client ID: Run ID: **FID23_446097** SeqNo: **7538577** PrepDate: **08-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	0.05543	0.00100	0.05	0	111	40 - 140	0.06383	14.1	50	
Aliphatics >C12 - C16	0.1204	0.00200	0.1	0	120	40 - 140	0.1391	14.4	50	
Aliphatics >C16 - C35	0.517	0.00800	0.4	0	129	40 - 140	0.5596	7.92	50	
Surr: 1-Chlorooctadecane	*0.03784*	*0*	*0.04*	*0*	*94.6*	*40 - 140*	*0.04307*	*12.9*	*50*	

LCSD Sample ID: **LCSD-200118** Units: **mg/L** Analysis Date: **12-Sep-2023 12:04**
Client ID: Run ID: **FID-22_446093** SeqNo: **7538456** PrepDate: **08-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	0.04526	0.00100	0.05	0	90.5	40 - 140	0.04114	9.54	50	
Aromatics >C12 - C16	0.19	0.00400	0.2	0	95.0	40 - 140	0.1751	8.14	50	
Aromatics >C16 - C21	0.152	0.00300	0.15	0	101	40 - 140	0.1388	9.07	50	
Aromatics >C21 - C35	0.4738	0.00900	0.45	0	105	40 - 140	0.4194	12.2	50	
Surr: 2-Bromonaphthalene	*0.0367*	*0*	*0.04*	*0*	*91.8*	*40 - 140*	*0.03376*	*8.36*	*50*	
Surr: 2-Fluorobiphenyl	*0.02548*	*0*	*0.04*	*0*	*63.7*	*40 - 140*	*0.0235*	*8.09*	*50*	
Surr: o-Terphenyl	*0.02836*	*0*	*0.04*	*0*	*70.9*	*40 - 140*	*0.02602*	*8.64*	*50*	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R445237 (0) **Instrument:** FID-14 **Method:** MASSACHUSETTS VPH, FEB 2018, REV 2.1

MBLK Sample ID: **MBLK-230830** Units: **mg/L** Analysis Date: **30-Aug-2023 18:32**
Client ID: Run ID: **FID-14_445237** SeqNo: **7519262** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	U	0.0100								
Aliphatics >C8 - C10	U	0.0100								
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.2037*	*0.0100*	*0.25*	*0*	*81.5*	*70 - 130*				

LCS Sample ID: **LCS-230830** Units: **mg/L** Analysis Date: **30-Aug-2023 17:15**
Client ID: Run ID: **FID-14_445237** SeqNo: **7519260** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	0.02756	0.0100	0.025	0	110	70 - 130				
Aliphatics >C8 - C10	0.0237	0.0100	0.025	0	94.8	70 - 130				
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.2265*	*0.0100*	*0.25*	*0*	*90.6*	*70 - 130*				

LCSD Sample ID: **LCSD-230830** Units: **mg/L** Analysis Date: **30-Aug-2023 17:54**
Client ID: Run ID: **FID-14_445237** SeqNo: **7519261** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	0.02673	0.0100	0.025	0	107	70 - 130	0.02756	3.08	25	
Aliphatics >C8 - C10	0.02515	0.0100	0.025	0	101	70 - 130	0.0237	5.91	25	
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.2259*	*0.0100*	*0.25*	*0*	*90.4*	*70 - 130*	*0.2265*	*0.275*	*25*	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R445238 (0) **Instrument:** FID-15 **Method:** MASSACHUSETTS VPH, FEB 2018, REV 2.1

MBLK Sample ID: **MBLK-230830** Units: **mg/L** Analysis Date: **30-Aug-2023 18:32**
Client ID: Run ID: **FID-15_445238** SeqNo: **7519269** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	U	0.0100								
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2296*	*0.0100*	*0.25*	*0*	*91.8*	*70 - 130*				

LCS Sample ID: **LCS-230830** Units: **mg/L** Analysis Date: **30-Aug-2023 17:15**
Client ID: Run ID: **FID-15_445238** SeqNo: **7519267** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	0.09809	0.0100	0.1	0	98.1	70 - 130				
Surr: 2,5-Dibromotoluene (Aromatic)	*0.25*	*0.0100*	*0.25*	*0*	*100*	*70 - 130*				

LCSD Sample ID: **LCSD-230830** Units: **mg/L** Analysis Date: **30-Aug-2023 17:54**
Client ID: Run ID: **FID-15_445238** SeqNo: **7519268** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	0.1012	0.0100	0.1	0	101	70 - 130	0.09809	3.15	25	
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2497*	*0.0100*	*0.25*	*0*	*99.9*	*70 - 130*	*0.25*	*0.124*	*25*	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200061 (0) **Instrument: HG04** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-200061** Units: **mg/L** Analysis Date: **07-Sep-2023 14:02**
Client ID: Run ID: **HG04_445701** SeqNo: **7530087** PrepDate: **07-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.000200								

LCS Sample ID: **LCS-200061** Units: **mg/L** Analysis Date: **07-Sep-2023 14:03**
Client ID: Run ID: **HG04_445701** SeqNo: **7530088** PrepDate: **07-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00495	0.000200	0.005	0	99.0	80 - 120				

MS Sample ID: **HS23081858-02MS** Units: **mg/L** Analysis Date: **07-Sep-2023 14:34**
Client ID: Run ID: **HG04_445701** SeqNo: **7530103** PrepDate: **07-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00564	0.000200	0.005	0.000001	113	75 - 125				

MSD Sample ID: **HS23081858-02MSD** Units: **mg/L** Analysis Date: **07-Sep-2023 14:39**
Client ID: Run ID: **HG04_445701** SeqNo: **7530104** PrepDate: **07-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00495	0.000200	0.005	0.000001	99.0	75 - 125	0.00564	13	20	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200087 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLKF2-200087** Units: **mg/L** Analysis Date: **11-Sep-2023 15:15**
Client ID: Run ID: **ICPMS06_445942** SeqNo: **7536052** PrepDate: **11-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.00200								
Barium	0.003206	0.00400								J
Cadmium	U	0.00200								
Calcium	U	0.500								
Chromium	U	0.00400								
Iron	U	0.200								
Lead	U	0.00200								
Magnesium	0.01933	0.200								J
Manganese	0.004771	0.00500								J
Nickel	U	0.00200								
Potassium	U	0.200								
Selenium	U	0.00200								
Silver	U	0.00200								
Sodium	1.878	0.200								
Strontium	0.000284	0.00500								J
Vanadium	0.001456	0.00500								J
Zinc	0.002071	0.00400								J

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200087 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLKF1-200087** Units: **mg/L** Analysis Date: **11-Sep-2023 15:13**
Client ID: Run ID: **ICPMS06_445942** SeqNo: **7536051** PrepDate: **11-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.00200								
Barium	0.003239	0.00400								J
Cadmium	U	0.00200								
Calcium	U	0.500								
Chromium	U	0.00400								
Iron	U	0.200								
Lead	U	0.00200								
Magnesium	0.01877	0.200								J
Manganese	U	0.00500								
Nickel	U	0.00200								
Potassium	U	0.200								
Selenium	U	0.00200								
Silver	U	0.00200								
Sodium	1.995	0.200								
Strontium	0.000302	0.00500								J
Vanadium	0.001412	0.00500								J
Zinc	0.002157	0.00400								J

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200087 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLK-200087** Units: **mg/L** Analysis Date: **11-Sep-2023 20:05**
Client ID: Run ID: **ICPMS06_445942** SeqNo: **7536309** PrepDate: **11-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.00200								
Barium	U	0.00400								
Cadmium	U	0.00200								
Calcium	U	0.500								
Chromium	U	0.00400								
Iron	U	0.200								
Lead	U	0.00200								
Magnesium	U	0.200								
Manganese	U	0.00500								
Nickel	U	0.00200								
Potassium	0.01963	0.200								J
Selenium	U	0.00200								
Silver	U	0.00200								
Sodium	U	0.200								
Strontium	U	0.00500								
Vanadium	U	0.00500								
Zinc	U	0.00400								

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200087 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

LCS Sample ID: **LCS-200087** Units: **mg/L** Analysis Date: **11-Sep-2023 15:17**
Client ID: Run ID: **ICPMS06_445942** SeqNo: **7536053** PrepDate: **11-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04725	0.00200	0.05	0	94.5	80 - 120				
Barium	0.04961	0.00400	0.05	0	99.2	80 - 120				
Cadmium	0.04918	0.00200	0.05	0	98.4	80 - 120				
Calcium	4.995	0.500	5	0	99.9	80 - 120				
Chromium	0.04952	0.00400	0.05	0	99.0	80 - 120				
Iron	5.019	0.200	5	0	100	80 - 120				
Lead	0.0489	0.00200	0.05	0	97.8	80 - 120				
Magnesium	5.265	0.200	5	0	105	80 - 120				
Manganese	0.05078	0.00500	0.05	0	102	80 - 120				
Nickel	0.05216	0.00200	0.05	0	104	80 - 120				
Potassium	5.008	0.200	5	0	100	80 - 120				
Selenium	0.04834	0.00200	0.05	0	96.7	80 - 120				
Silver	0.04787	0.00200	0.05	0	95.7	80 - 120				
Sodium	5.228	0.200	5	0	105	80 - 120				
Strontium	0.09611	0.00500	0.1	0	96.1	80 - 120				
Vanadium	0.04883	0.00500	0.05	0	97.7	80 - 120				
Zinc	0.05402	0.00400	0.05	0	108	80 - 120				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200087 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MS Sample ID: **HS23081750-01MS** Units: **mg/L** Analysis Date: **11-Sep-2023 15:23**
Client ID: Run ID: **ICPMS06_445942** SeqNo: **7536056** PrepDate: **11-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Arsenic	0.04866	0.00200	0.05	0.000279	96.8	80 - 120			
Barium	0.3665	0.00400	0.05	0.3231	87.0	80 - 120			O
Cadmium	0.05016	0.00200	0.05	0.000008	100	80 - 120			
Calcium	71.77	0.500	5	67.38	88.0	80 - 120			O
Chromium	0.04924	0.00400	0.05	0.000484	97.5	80 - 120			
Iron	4.972	0.200	5	0.01388	99.2	80 - 120			
Lead	0.05114	0.00200	0.05	0.000449	101	80 - 120			
Magnesium	26.5	0.200	5	21.8	94.0	80 - 120			O
Manganese	0.06417	0.00500	0.05	0.009008	110	80 - 120			
Nickel	0.04962	0.00200	0.05	0.000449	98.3	80 - 120			
Potassium	5.492	0.200	5	0.3876	102	80 - 120			
Selenium	0.04714	0.00200	0.05	-0.000149	94.6	80 - 120			
Silver	0.04769	0.00200	0.05	0.001203	93.0	80 - 120			
Sodium	116.7	0.200	5	103.7	260	80 - 120			SO
Strontium	0.6186	0.00500	0.1	0.4141	205	80 - 120			SO
Vanadium	0.05171	0.00500	0.05	0.001404	101	80 - 120			
Zinc	0.05663	0.00400	0.05	0.00681	99.6	80 - 120			

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200087 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MSD Sample ID: **HS23081750-01MSD** Units: **mg/L** Analysis Date: **11-Sep-2023 15:25**
Client ID: Run ID: **ICPMS06_445942** SeqNo: **7536057** PrepDate: **11-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05002	0.00200	0.05	0.000279	99.5	80 - 120	0.04866	2.75	20	
Barium	0.3683	0.00400	0.05	0.3231	90.6	80 - 120	0.3665	0.488	20	O
Cadmium	0.04992	0.00200	0.05	0.000008	99.8	80 - 120	0.05016	0.498	20	
Calcium	71.59	0.500	5	67.38	84.4	80 - 120	71.77	0.251	20	O
Chromium	0.05069	0.00400	0.05	0.000484	100	80 - 120	0.04924	2.92	20	
Iron	5.012	0.200	5	0.01388	100.0	80 - 120	4.972	0.785	20	
Lead	0.04975	0.00200	0.05	0.000449	98.6	80 - 120	0.05114	2.74	20	
Magnesium	26.77	0.200	5	21.8	99.5	80 - 120	26.5	1.03	20	O
Manganese	0.06504	0.00500	0.05	0.009008	112	80 - 120	0.06417	1.35	20	
Nickel	0.05019	0.00200	0.05	0.000449	99.5	80 - 120	0.04962	1.15	20	
Potassium	5.545	0.200	5	0.3876	103	80 - 120	5.492	0.946	20	
Selenium	0.05043	0.00200	0.05	-0.000149	101	80 - 120	0.04714	6.75	20	
Silver	0.0477	0.00200	0.05	0.001203	93.0	80 - 120	0.04769	0.0294	20	
Sodium	117.3	0.200	5	103.7	272	80 - 120	116.7	0.491	20	SO
Strontium	0.613	0.00500	0.1	0.4141	199	80 - 120	0.6186	0.918	20	SO
Vanadium	0.05236	0.00500	0.05	0.001404	102	80 - 120	0.05171	1.25	20	
Zinc	0.05735	0.00400	0.05	0.00681	101	80 - 120	0.05663	1.26	20	

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200087 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

PDS Sample ID: **HS23081750-01PDS** Units: **mg/L** Analysis Date: **11-Sep-2023 15:27**
Client ID: Run ID: **ICPMS06_445942** SeqNo: **7536058** PrepDate: **11-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09531	0.00200	0.1	0.000279	95.0	75 - 125				
Barium	0.3984	0.00400	0.1	0.3231	75.3	75 - 125				
Cadmium	0.09784	0.00200	0.1	0.000008	97.8	75 - 125				
Calcium	71.66	0.500	10	67.38	42.9	75 - 125				SO
Chromium	0.09675	0.00400	0.1	0.000484	96.3	75 - 125				
Iron	9.818	0.200	10	0.01388	98.0	75 - 125				
Lead	0.0967	0.00200	0.1	0.000449	96.3	75 - 125				
Magnesium	29.87	0.200	10	21.8	80.8	75 - 125				
Manganese	0.1068	0.00500	0.1	0.009008	97.8	75 - 125				
Nickel	0.09505	0.00200	0.1	0.000449	94.6	75 - 125				
Potassium	10.05	0.200	10	0.3876	96.6	75 - 125				
Selenium	0.09394	0.00200	0.1	-0.000149	94.1	75 - 125				
Silver	0.09328	0.00200	0.1	0.001203	92.1	75 - 125				
Sodium	104.5	0.200	10	103.7	7.97	75 - 125				SO
Strontium	0.5001	0.00500	0.1	0.4141	86.0	75 - 125				O
Vanadium	0.09959	0.00500	0.1	0.001404	98.2	75 - 125				
Zinc	0.1018	0.00400	0.1	0.00681	95.0	75 - 125				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: 200087 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

SD Sample ID: **HS23081750-01SD** Units: **mg/L** Analysis Date: **11-Sep-2023 15:21**
Client ID: Run ID: **ICPMS06_445942** SeqNo: **7536055** PrepDate: **11-Sep-2023** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Arsenic	U	0.0100					0.000279	0	10	
Barium	0.3489	0.0200					0.3231	8	10	
Cadmium	U	0.0100					0.000008	0	10	
Calcium	76.66	2.50					67.38	13.8	10	R
Chromium	U	0.0200					0.000484	0	10	
Iron	U	1.00					0.01388	0	10	
Lead	U	0.0100					0.000449	0	10	
Magnesium	24.26	1.00					21.8	11.3	10	R
Manganese	0.009009	0.0250					0.009008	0	10	J
Nickel	U	0.0100					0.000449	0	10	
Potassium	0.39	1.00					0.3876	0	10	J
Selenium	U	0.0100					-0.000149	0	10	
Silver	0.00135	0.0100					0.001203	0	10	J
Sodium	112.9	1.00					103.7	8.89	10	
Strontium	0.452	0.0250					0.4141	9.16	10	
Vanadium	U	0.0250					0.001404	0	10	
Zinc	U	0.0200					0.00681	0	10	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R445670 (0) **Instrument: VOA11** **Method: LOW LEVEL VOLATILES BY SW8260C**

MBLK Sample ID: **VBLKW-230906** Units: **ug/L** Analysis Date: **06-Sep-2023 10:59**
Client ID: Run ID: **VOA11_445670** SeqNo: **7528951** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	1.0								
Ethylbenzene	U	1.0								
m,p-Xylene	U	2.0								
o-Xylene	U	1.0								
Toluene	U	1.0								
Xylenes, Total	U	3.0								
Surr: 1,2-Dichloroethane-d4	*46.88*	*1.0*	*50*	*0*	*93.8*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*48.29*	*1.0*	*50*	*0*	*96.6*	*77 - 113*				
Surr: Dibromofluoromethane	*47.18*	*1.0*	*50*	*0*	*94.4*	*73 - 126*				
Surr: Toluene-d8	*50.12*	*1.0*	*50*	*0*	*100*	*81 - 120*				

LCS Sample ID: **VLCSW-230906** Units: **ug/L** Analysis Date: **06-Sep-2023 10:17**
Client ID: Run ID: **VOA11_445670** SeqNo: **7528950** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.11	1.0	20	0	90.5	74 - 120				
Ethylbenzene	19.02	1.0	20	0	95.1	77 - 117				
m,p-Xylene	38.19	2.0	40	0	95.5	77 - 122				
o-Xylene	18.93	1.0	20	0	94.7	75 - 119				
Toluene	18.84	1.0	20	0	94.2	77 - 118				
Xylenes, Total	57.12	3.0	60	0	95.2	75 - 122				
Surr: 1,2-Dichloroethane-d4	*47.8*	*1.0*	*50*	*0*	*95.6*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*48.08*	*1.0*	*50*	*0*	*96.2*	*77 - 113*				
Surr: Dibromofluoromethane	*48.26*	*1.0*	*50*	*0*	*96.5*	*73 - 126*				
Surr: Toluene-d8	*50.45*	*1.0*	*50*	*0*	*101*	*81 - 120*				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R445670 (0) **Instrument: VOA11** **Method: LOW LEVEL VOLATILES BY SW8260C**

MS Sample ID: **HS23081916-01MS** Units: **ug/L** Analysis Date: **06-Sep-2023 11:41**
Client ID: Run ID: **VOA11_445670** SeqNo: **7528953** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.69	1.0	20	0	88.4	70 - 127				
Ethylbenzene	18.43	1.0	20	0	92.1	70 - 124				
m,p-Xylene	37.37	2.0	40	0	93.4	70 - 130				
o-Xylene	18.22	1.0	20	0	91.1	70 - 124				
Toluene	18.46	1.0	20	0	92.3	70 - 123				
Xylenes, Total	55.58	3.0	60	0	92.6	70 - 130				
Surr: 1,2-Dichloroethane-d4	*46.6*	*1.0*	*50*	*0*	*93.2*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*48.18*	*1.0*	*50*	*0*	*96.4*	*77 - 113*				
Surr: Dibromofluoromethane	*48.12*	*1.0*	*50*	*0*	*96.2*	*77 - 123*				
Surr: Toluene-d8	*50.01*	*1.0*	*50*	*0*	*100*	*82 - 127*				

MSD Sample ID: **HS23081916-01MSD** Units: **ug/L** Analysis Date: **06-Sep-2023 12:02**
Client ID: Run ID: **VOA11_445670** SeqNo: **7528954** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.63	1.0	20	0	88.1	70 - 127	17.69	0.332	20	
Ethylbenzene	17.96	1.0	20	0	89.8	70 - 124	18.43	2.56	20	
m,p-Xylene	36.64	2.0	40	0	91.6	70 - 130	37.37	1.96	20	
o-Xylene	17.87	1.0	20	0	89.4	70 - 124	18.22	1.89	20	
Toluene	18.1	1.0	20	0	90.5	70 - 123	18.46	1.98	20	
Xylenes, Total	54.52	3.0	60	0	90.9	70 - 130	55.58	1.94	20	
Surr: 1,2-Dichloroethane-d4	*46.15*	*1.0*	*50*	*0*	*92.3*	*70 - 126*	*46.6*	*0.961*	*20*	
Surr: 4-Bromofluorobenzene	*48.45*	*1.0*	*50*	*0*	*96.9*	*77 - 113*	*48.18*	*0.567*	*20*	
Surr: Dibromofluoromethane	*48.18*	*1.0*	*50*	*0*	*96.4*	*77 - 123*	*48.12*	*0.128*	*20*	
Surr: Toluene-d8	*49.44*	*1.0*	*50*	*0*	*98.9*	*82 - 127*	*50.01*	*1.15*	*20*	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R445375 (0) **Instrument: WetChem_HS** **Method: SULFIDE BY SM4500 S2-F-2011**

MBLK Sample ID: **MBLK-R445375** Units: **mg/L** Analysis Date: **01-Sep-2023 11:00**
Client ID: Run ID: **WetChem_HS_445375** SeqNo: **7522156** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	U	2.00								

LCS Sample ID: **LCS-R445375** Units: **mg/L** Analysis Date: **01-Sep-2023 11:00**
Client ID: Run ID: **WetChem_HS_445375** SeqNo: **7522155** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	22.08	2.00	25	0	88.3	85 - 115				

LCSD Sample ID: **LCSD-R445375** Units: **mg/L** Analysis Date: **01-Sep-2023 11:00**
Client ID: Run ID: **WetChem_HS_445375** SeqNo: **7522154** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.88	2.00	25	0	87.5	85 - 115	22.08	0.91	20	

MS Sample ID: **HS23081888-01MS** Units: **mg/L** Analysis Date: **01-Sep-2023 11:00**
Client ID: Run ID: **WetChem_HS_445375** SeqNo: **7522157** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	22.08	2.00	25	-2.12	96.8	80 - 120				

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R445383 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-08312023** Units: **mg/L** Analysis Date: **31-Aug-2023 11:52**
Client ID: Run ID: **Balance1_445383** SeqNo: **7522276** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	U	10.0								

LCS Sample ID: **WLCS-08312023** Units: **mg/L** Analysis Date: **31-Aug-2023 11:52**
Client ID: Run ID: **Balance1_445383** SeqNo: **7522275** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1082	10.0	1000	0	108	85 - 115				

DUP Sample ID: **HS23081833-08DUP** Units: **mg/L** Analysis Date: **31-Aug-2023 11:52**
Client ID: Run ID: **Balance1_445383** SeqNo: **7522266** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	24700	10.0					24720	0.0809	20	

DUP Sample ID: **HS23081752-03DUP** Units: **mg/L** Analysis Date: **31-Aug-2023 11:52**
Client ID: Run ID: **Balance1_445383** SeqNo: **7522254** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	888	10.0					892	0.449	20	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R445440 (0) **Instrument: WetChem_HS** **Method: HYDROGEN SULFIDE BY E376.1**

MBLK Sample ID: **MBLK-R445440** Units: **mg/L** Analysis Date: **01-Sep-2023 12:30**
Client ID: Run ID: **WetChem_HS_445440** SeqNo: **7523781** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	U	1.00								

LCS Sample ID: **LCS-R445440** Units: **mg/L** Analysis Date: **01-Sep-2023 12:30**
Client ID: Run ID: **WetChem_HS_445440** SeqNo: **7523780** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	23.46	1.00	25	0	93.8	80 - 120				

LCSD Sample ID: **LCSD-R445440** Units: **mg/L** Analysis Date: **01-Sep-2023 12:30**
Client ID: Run ID: **WetChem_HS_445440** SeqNo: **7523779** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	23.25	1.00	25	0	93.0	80 - 120	23.46	0.91	20	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R445743 (0) **Instrument: Skalar 03** **Method: ALKALINITY BY -2011**

MBLK Sample ID: **MBLK-09072023** Units: **mg/L** Analysis Date: **07-Sep-2023 12:46**
Client ID: Run ID: **Skalar 03_445743** SeqNo: **7530342** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.00								
Alkalinity, Carbonate (As CaCO3)	U	5.00								

LCS Sample ID: **LCS-09072023** Units: **mg/L** Analysis Date: **07-Sep-2023 12:52**
Client ID: Run ID: **Skalar 03_445743** SeqNo: **7530343** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	928	5.00	1000	0	92.8	85 - 115				

LCSD Sample ID: **LCSD-09072023** Units: **mg/L** Analysis Date: **07-Sep-2023 12:58**
Client ID: Run ID: **Skalar 03_445743** SeqNo: **7530344** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	925.4	5.00	1000	0	92.5	85 - 115	928	0.281	20	

DUP Sample ID: **HS23081843-01DUP** Units: **mg/L** Analysis Date: **07-Sep-2023 13:08**
Client ID: **#189416 - 2700'** Run ID: **Skalar 03_445743** SeqNo: **7530333** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	92.6	5.00					94	1.5	20	
Alkalinity, Carbonate (As CaCO3)	U	5.00					0	0	20	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R445744 (0) **Instrument: Skalar 03** **Method: PH BY SM4500H+ B-2011**

DUP Sample ID: **HS23082011-01DUP** Units: **pH Units** Analysis Date: **07-Sep-2023 15:30**
Client ID: Run ID: **Skalar 03_445744** SeqNo: **7530379** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.99	0.100					7.98	0.125	10	
Temp Deg C @pH	21.4	0					21.7	1.39	10	

DUP Sample ID: **HS23081843-01DUP** Units: **pH Units** Analysis Date: **07-Sep-2023 13:08**
Client ID: **#189416 - 2700'** Run ID: **Skalar 03_445744** SeqNo: **7530371** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.07	0.100					8.06	0.124	10	
Temp Deg C @pH	19.5	0					20.1	3.03	10	

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23081843

QC BATCH REPORT

Batch ID: R446082 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **12-Sep-2023 08:52**
Client ID: Run ID: **ICS-Integrion_446082** SeqNo: **7538162** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	U	0.100								
Chloride	U	0.500								
Sulfate	U	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **12-Sep-2023 08:58**
Client ID: Run ID: **ICS-Integrion_446082** SeqNo: **7538163** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.672	0.100	4	0	91.8	80 - 120				
Chloride	20.5	0.500	20	0	103	80 - 120				
Sulfate	19.85	0.500	20	0	99.3	80 - 120				

MS Sample ID: **HS23081962-05MS** Units: **mg/L** Analysis Date: **12-Sep-2023 10:14**
Client ID: Run ID: **ICS-Integrion_446082** SeqNo: **7538174** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.201	0.100	2	0	110	80 - 120				
Chloride	15.72	0.500	10	5.493	102	80 - 120				
Sulfate	80.38	0.500	10	70.15	102	80 - 120				O

MSD Sample ID: **HS23081962-05MSD** Units: **mg/L** Analysis Date: **12-Sep-2023 10:19**
Client ID: Run ID: **ICS-Integrion_446082** SeqNo: **7538175** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.04	0.100	2	0	102	80 - 120	2.201	7.61	20	
Chloride	15.7	0.500	10	5.493	102	80 - 120	15.72	0.146	20	
Sulfate	79.46	0.500	10	70.15	93.1	80 - 120	80.38	1.16	20	O

The following samples were analyzed in this batch: HS23081843-01 HS23081843-02

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: **HS23081843**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID: HS23081843 **Date/Time Received:** **29-Aug-2023 11:00**

Client Name: ERMSW-HOU **Received by:** **Paresh M. Giga**

Completed By: */S/ Corey Grandits* (eSignature) 29-Aug-2023 16:14 (Date/Time) **Reviewed by:** */S/ Bernadette A. Fini* (eSignature) 30-Aug-2023 08:12 (Date/Time)

Matrices: **W** Carrier name: **Client**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	4.0UC/3.9C	IR31
Cooler(s)/Kit(s):	Red	
Date/Time sample(s) sent to storage:	8/29/23	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

ALS Environmental

Laboratory location:

Chain of Custody Form

Page 1 of 1

HS23081843

Environmental Resources Mgmt.
Sulphur Dome

ALS Project Manager:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	0701093	Project Name	Sulphur Dome	A	8260_LL_W (Low Level VOC (8260) BTEX)
Work Order		Project Number	0701093	B	MA_EPH_W_La (MA EPH)
Company Name	Environmental Resources Mgmt.	Bill To Company	Environmental Resources Mgmt.	C	MA_VPH_LA_W (MA VPH)
Send Report To	Scott Himes	Invoice Attn.	Accounts Payable	D	9056_anions_W_ (Cl, SO4, Br)
Address	CityCentre Four 840 W. Sam Houston Pkwy., Suite 6	Address	CityCentre Four 840 W. Sam Houston Pkwy., Suite 6	E	ALK_W_ 2320B (carb, bicarb, pH)
				F	H2S_W (H2S)
City/State/Zip	Houston, TX 77024	City/State/Zip	Houston, TX 77024	G	HG_W (mercury)
Phone	281 - 600 - 1000	Phone	281 - 600 - 1000	H	ICP_TW (As, Ba, Cd, Ca, Cr, Fe, Pb, Mg, Mn, K, Se, Ag, Na, Sr, Zn)
Fax	281 - 600 - 1001	Fax	281 - 600 - 1001	I	SULFD_4500S F (Sulfide)
e-Mail Address	scott.himes@erm.com	e-Mail Address	ERMNAAccountsPayable@erm.com	J	TDS_W 2540C (TDS)

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	#189416 - 2700'	08/28/23	16:00	W	1,2,8	12	X	X	X	X	X	X	X	X	X	X	
2	#189416 - 1300'	08/28/23	17:30	W	1,2,8	11	X	X	X	X	X	X	X	X	X	X	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign Taylar Brown [signature]

Shipment Method: drop off

Required Turnaround Time: ☑ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other ______

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes:
Taylar Brown	8/29/23	11:00		
Relinquished by:	**Date:**	**Time:**	**Received by (Laboratory):** 8/29/23 11:00	**Cooler Temp.**
Logged by (Laboratory):	**Date:**	**Time:**	**Checked by (Laboratory):** RD	4.0° 431 C11-01

QC Package: (Check Box Below)

- ☐ Level II: Standard QC
- ☐ Level III: Std QC + Raw Data
- ☐ Level IV: SW846 CLP-Like
- ☐ TRRP-Checklist
- ☐ TRRP Level IV
- Other: ______

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

October 05, 2023

Scott Himes
Environmental Resources Mgmt.
CityCentre Four
840 W. Sam Houston Pkwy., Suite 600
Houston, TX 77024

Work Order: **HS23091305**

Laboratory Results for: **Sulphur Dome**

Dear Scott Himes,

ALS Environmental received 19 sample(s) on Sep 21, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
Bernadette A. Fini
Project Manager

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Work Order: HS23091305

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23091305-01	BS-3	Water		18-Sep-2023 12:00	21-Sep-2023 12:05	☐
HS23091305-02	BS-26	Water		18-Sep-2023 14:00	21-Sep-2023 12:05	☐
HS23091305-03	BW-7B-BS	Water		18-Sep-2023 15:45	21-Sep-2023 12:05	☐
HS23091305-04	BS-8	Water		19-Sep-2023 07:45	21-Sep-2023 12:05	☐
HS23091305-05	BS-7	Water		19-Sep-2023 09:15	21-Sep-2023 12:05	☐
HS23091305-06	BS-6	Water		19-Sep-2023 09:30	21-Sep-2023 12:05	☐
HS23091305-07	BS-23	Water		19-Sep-2023 09:45	21-Sep-2023 12:05	☐
HS23091305-08	BS-22	Water		19-Sep-2023 11:20	21-Sep-2023 12:05	☐
HS23091305-09	BS-21	Water		19-Sep-2023 11:45	21-Sep-2023 12:05	☐
HS23091305-10	BS-5	Water		19-Sep-2023 13:30	21-Sep-2023 12:05	☐
HS23091305-11	BS-18	Water		19-Sep-2023 13:50	21-Sep-2023 12:05	☐
HS23091305-12	19-1603	Water		19-Sep-2023 15:15	21-Sep-2023 12:05	☐
HS23091305-13	19-580	Water		20-Sep-2023 07:45	21-Sep-2023 12:05	☐
HS23091305-14	BS-17	Water		20-Sep-2023 08:25	21-Sep-2023 12:05	☐
HS23091305-15	BS-25	Water		20-Sep-2023 08:40	21-Sep-2023 12:05	☐
HS23091305-16	19-582	Water		20-Sep-2023 14:10	21-Sep-2023 12:05	☐
HS23091305-17	191055	Water		20-Sep-2023 14:30	21-Sep-2023 12:05	☐
HS23091305-18	COTTAGE WELL	Water		20-Sep-2023 15:30	21-Sep-2023 12:05	☐
HS23091305-19	BS-12	Water		19-Sep-2023 08:00	21-Sep-2023 12:05	☐

Client: Environmental Resources Mgmt. **CASE NARRATIVE**
Project: Sulphur Dome
Work Order: HS23091305

Work Order Comments

- Login notes:
  Sample BS-12 was received however is not listed on the COC. Proceeded to login for all analysis.

- Per client email on October 5, 2023 update sample ID BW-7A-BS to BW-7B-BS.

Work Order Comments

- Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.

  The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.

GC Semivolatiles by Method MA EPH

Batch ID: 201163

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GC Volatiles by Method MA VPH

Batch ID: R447176,R447177,R447305,R447306

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R447222

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW7470A

Batch ID: 201402,201403

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW6020A

Batch ID: 201350

Sample ID: BS-7 (HS23091305-05MS)

- The MS and/or MSD recovery was outside of the control limits; however, the result in the parent sample is greater than 4x the spike amount. (Calcium,Magnesium,Manganese,Sodium,Strontium)

Sample ID: BS-7 (HS23091305-05PDS)

- The PDS recovery was outside method control limits, however the result in the parent sample is greater than 4x the spike amount. (Calcium,Strontium)

Sample ID: BS-7 (HS23091305-05SD)

- The percent difference between the results of the sample and the serial dilution were greater than 10%. (Sodium)

WetChemistry by Method E376.1

Batch ID: R447178,R447366

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Environmental Resources Mgmt. **CASE NARRATIVE**
Project: Sulphur Dome
Work Order: HS23091305

WetChemistry by Method M2540C

Batch ID: R447371,R447443,R447589

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R448196

Sample ID: BS-26 (HS23091305-02MS)

- The recovery of the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) associated with this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS/MSD may be due to sample matrix interference. (Bromide)

Sample ID: BW-7B-BS (HS23091305-03)

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Bromide)

WetChemistry by Method SM4500H+ B

Batch ID: R447160

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM2320B

Batch ID: R447158,R447159

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM4500 S2-F

Batch ID: R447118,R447363

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-3
Collection Date: 18-Sep-2023 12:00

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-01
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene	**0.46**	J	**0.20**	**1.0**	**ug/L**	1	25-Sep-2023 11:10
Ethylbenzene	U		0.30	1.0	ug/L	1	25-Sep-2023 11:10
m,p-Xylene	U		0.50	2.0	ug/L	1	25-Sep-2023 11:10
o-Xylene	U		0.30	1.0	ug/L	1	25-Sep-2023 11:10
Toluene	**1.1**		**0.20**	**1.0**	**ug/L**	1	25-Sep-2023 11:10
Xylenes, Total	U		0.30	1.0	ug/L	1	25-Sep-2023 11:10
Surr: 1,2-Dichloroethane-d4	*95.8*			*70-126*	*%REC*	*1*	*25-Sep-2023 11:10*
Surr: 4-Bromofluorobenzene	*95.9*			*77-113*	*%REC*	*1*	*25-Sep-2023 11:10*
Surr: Dibromofluoromethane	*99.3*			*77-123*	*%REC*	*1*	*25-Sep-2023 11:10*
Surr: Toluene-d8	*99.2*			*82-127*	*%REC*	*1*	*25-Sep-2023 11:10*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8	**0.134**		**0.0100**	**0.0100**	**mg/L**	1	22-Sep-2023 16:23
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	22-Sep-2023 16:23
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	22-Sep-2023 16:23
Surr: 2,5-Dibromotoluene (Aliphatic)	*101*			*70-130*	*%REC*	*1*	*22-Sep-2023 16:23*
Surr: 2,5-Dibromotoluene (Aromatic)	*112*			*70-130*	*%REC*	*1*	*22-Sep-2023 16:23*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	04-Oct-2023 23:57
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	04-Oct-2023 23:57
Aliphatics >C16 - C35	**0.0546**		**0.00800**	**0.00800**	**mg/L**	1	04-Oct-2023 23:57
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	05-Oct-2023 02:20
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	05-Oct-2023 02:20
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	05-Oct-2023 02:20
Aromatics >C21 - C35	**0.0290**		**0.00900**	**0.00900**	**mg/L**	1	05-Oct-2023 02:20
Surr: 1-Chlorooctadecane	*67.6*			*40-140*	*%REC*	*1*	*04-Oct-2023 23:57*
Surr: 2-Bromonaphthalene	*116*			*40-140*	*%REC*	*1*	*05-Oct-2023 02:20*
Surr: 2-Fluorobiphenyl	*109*			*40-140*	*%REC*	*1*	*05-Oct-2023 02:20*
Surr: o-Terphenyl	*65.3*			*40-140*	*%REC*	*1*	*05-Oct-2023 02:20*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-3
Collection Date: 18-Sep-2023 12:00

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-01
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00442**		**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 19:09
Barium	**0.453**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 19:09
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:09
Calcium	**88.2**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 19:09
Chromium	**0.000602**	J	**0.000400**	**0.00400**	**mg/L**	1	04-Oct-2023 19:09
Iron	**0.254**		**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 19:09
Lead	**0.000710**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 19:09
Magnesium	**25.4**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 19:09
Manganese	**0.859**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 19:09
Nickel	**0.00212**		**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 19:09
Potassium	**4.09**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 19:09
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 19:09
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:09
Sodium	**534**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:08
Strontium	**0.894**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 19:09
Vanadium	**0.0115**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 19:09
Zinc	**0.0243**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 19:09
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 12:37
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: MC
Total Dissolved Solids (Residue, Filterable)	**1,990**		**5.00**	**10.0**	**mg/L**	1	25-Sep-2023 15:33
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**206**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 15:59
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 15:59
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**6.97**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 15:59
Temp Deg C @pH	**21.5**	H	**0**	**0**	**°C**	1	22-Sep-2023 15:59
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0600	0.200	mg/L	2	04-Oct-2023 23:50
Chloride	**928**		**8.00**	**20.0**	**mg/L**	40	04-Oct-2023 23:56
Sulfate	**74.9**		**0.400**	**1.00**	**mg/L**	2	04-Oct-2023 23:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-26
Collection Date: 18-Sep-2023 14:00

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-02
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 12:18
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 12:18
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 12:18
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 12:18
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 12:18
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 12:18
Surr: 1,2-Dichloroethane-d4	*98.1*			*70-126*	*%REC*	*1*	*25-Sep-2023 12:18*
Surr: 4-Bromofluorobenzene	*96.3*			*77-113*	*%REC*	*1*	*25-Sep-2023 12:18*
Surr: Dibromofluoromethane	*104*			*77-123*	*%REC*	*1*	*25-Sep-2023 12:18*
Surr: Toluene-d8	*97.8*			*82-127*	*%REC*	*1*	*25-Sep-2023 12:18*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	22-Sep-2023 17:02
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 17:02
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 17:02
Surr: 2,5-Dibromotoluene (Aliphatic)	*90.3*			*70-130*	*%REC*	*1*	*22-Sep-2023 17:02*
Surr: 2,5-Dibromotoluene (Aromatic)	*99.9*			*70-130*	*%REC*	*1*	*22-Sep-2023 17:02*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 04:07
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 04:07
Aliphatics >C16 - C35	**0.0405**		**0.00800**	**0.00800**	**mg/L**	1	04-Oct-2023 04:07
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 04:07
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	04-Oct-2023 04:07
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	04-Oct-2023 04:07
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	04-Oct-2023 04:07
Surr: 1-Chlorooctadecane	*73.6*			*40-140*	*%REC*	*1*	*04-Oct-2023 04:07*
Surr: 2-Bromonaphthalene	*84.3*			*40-140*	*%REC*	*1*	*04-Oct-2023 04:07*
Surr: 2-Fluorobiphenyl	*51.9*			*40-140*	*%REC*	*1*	*04-Oct-2023 04:07*
Surr: o-Terphenyl	*63.0*			*40-140*	*%REC*	*1*	*04-Oct-2023 04:07*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-26
Collection Date: 18-Sep-2023 14:00

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-02
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00130**	J	**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 19:12
Barium	**0.540**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 19:12
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:12
Calcium	**9.70**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 19:12
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 19:12
Iron	**0.0902**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 19:12
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 19:12
Magnesium	**1.70**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 19:12
Manganese	**0.0277**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 19:12
Nickel	U		0.000600	0.00200	mg/L	1	04-Oct-2023 19:12
Potassium	**1.44**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 19:12
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 19:12
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:12
Sodium	**38.7**		**0.140**	**2.00**	**mg/L**	10	05-Oct-2023 14:53
Strontium	**0.161**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 19:12
Vanadium	**0.00160**	J	**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 19:12
Zinc	U		0.00200	0.00400	mg/L	1	04-Oct-2023 19:12
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 12:39
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: MC
Total Dissolved Solids (Residue, Filterable)	**120**		**5.00**	**10.0**	**mg/L**	1	25-Sep-2023 15:33
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**44.4**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 16:31
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 16:31
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.05**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 16:31
Temp Deg C @pH	**21.1**	H	**0**	**0**	**°C**	1	22-Sep-2023 16:31
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 00:02
Chloride	**37.8**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 00:02
Sulfate	**16.6**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 00:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BW-7B-BS
Collection Date: 18-Sep-2023 15:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-03
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene	**0.80**	J	**0.20**	**1.0**	**ug/L**	1	25-Sep-2023 12:41
Ethylbenzene	**0.86**	J	**0.30**	**1.0**	**ug/L**	1	25-Sep-2023 12:41
m,p-Xylene	**1.3**	J	**0.50**	**2.0**	**ug/L**	1	25-Sep-2023 12:41
o-Xylene	**1.0**		**0.30**	**1.0**	**ug/L**	1	25-Sep-2023 12:41
Toluene	U		0.20	1.0	ug/L	1	25-Sep-2023 12:41
Xylenes, Total	**2.4**		**0.30**	**1.0**	**ug/L**	1	25-Sep-2023 12:41
Surr: 1,2-Dichloroethane-d4	*101*			*70-126*	*%REC*	*1*	*25-Sep-2023 12:41*
Surr: 4-Bromofluorobenzene	*94.8*			*77-113*	*%REC*	*1*	*25-Sep-2023 12:41*
Surr: Dibromofluoromethane	*103*			*77-123*	*%REC*	*1*	*25-Sep-2023 12:41*
Surr: Toluene-d8	*97.6*			*82-127*	*%REC*	*1*	*25-Sep-2023 12:41*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8	U		0.0100	0.0100	mg/L	1	22-Sep-2023 17:40
Aliphatics >C8 - C10	U		0.0100	0.0100	mg/L	1	22-Sep-2023 17:40
Aromatics >C8 - C10	U		0.0100	0.0100	mg/L	1	22-Sep-2023 17:40
Surr: 2,5-Dibromotoluene (Aliphatic)	*91.0*			*70-130*	*%REC*	*1*	*22-Sep-2023 17:40*
Surr: 2,5-Dibromotoluene (Aromatic)	*101*			*70-130*	*%REC*	*1*	*22-Sep-2023 17:40*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12	U		0.00100	0.00100	mg/L	1	05-Oct-2023 00:26
Aliphatics >C12 - C16	U		0.00200	0.00200	mg/L	1	05-Oct-2023 00:26
Aliphatics >C16 - C35	**0.137**		**0.00800**	**0.00800**	**mg/L**	1	05-Oct-2023 00:26
Aromatics >C10 - C12	U		0.00100	0.00100	mg/L	1	04-Oct-2023 04:36
Aromatics >C12 - C16	U		0.00400	0.00400	mg/L	1	04-Oct-2023 04:36
Aromatics >C16 - C21	U		0.00300	0.00300	mg/L	1	04-Oct-2023 04:36
Aromatics >C21 - C35	U		0.00900	0.00900	mg/L	1	04-Oct-2023 04:36
Surr: 1-Chlorooctadecane	*88.3*			*40-140*	*%REC*	*1*	*05-Oct-2023 00:26*
Surr: 2-Bromonaphthalene	*84.5*			*40-140*	*%REC*	*1*	*04-Oct-2023 04:36*
Surr: 2-Fluorobiphenyl	*53.3*			*40-140*	*%REC*	*1*	*04-Oct-2023 04:36*
Surr: o-Terphenyl	*69.1*			*40-140*	*%REC*	*1*	*04-Oct-2023 04:36*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BW-7B-BS
Collection Date: 18-Sep-2023 15:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-03
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.000799**	J	**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 19:14
Barium	**3.71**		**0.380**	**0.800**	**mg/L**	200	05-Oct-2023 13:17
Cadmium	**0.000336**	J	**0.000200**	**0.00200**	**mg/L**	1	04-Oct-2023 19:14
Calcium	**65.6**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 19:14
Chromium	**0.000523**	J	**0.000400**	**0.00400**	**mg/L**	1	04-Oct-2023 19:14
Iron	**1.43**		**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 19:14
Lead	**0.00300**		**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 19:14
Magnesium	**1.78**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 19:14
Manganese	**0.211**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 19:14
Nickel	**0.00268**		**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 19:14
Potassium	**2.13**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 19:14
Selenium	**0.00156**	J	**0.00110**	**0.00200**	**mg/L**	1	04-Oct-2023 19:14
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:14
Sodium	**27,400**		**2.80**	**40.0**	**mg/L**	200	05-Oct-2023 13:17
Strontium	**0.683**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 19:14
Vanadium	U		0.000600	0.00500	mg/L	1	04-Oct-2023 19:14
Zinc	**0.291**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 19:14
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 12:40
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: MC
Total Dissolved Solids (Residue, Filterable)	**67,200**		**5.00**	**10.0**	**mg/L**	1	25-Sep-2023 15:33
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**241**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 16:42
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 16:42
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.93**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 16:42
Temp Deg C @pH	**21.5**	H	**0**	**0**	**°C**	1	22-Sep-2023 16:42
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		1.50	5.00	mg/L	50	05-Oct-2023 00:25
Chloride	**48,000**		**200**	**500**	**mg/L**	1000	05-Oct-2023 00:30
Sulfate	**155**		**10.0**	**25.0**	**mg/L**	50	05-Oct-2023 00:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-8
Collection Date: 19-Sep-2023 07:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-04
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 13:04
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 13:04
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 13:04
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 13:04
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 13:04
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 13:04
Surr: 1,2-Dichloroethane-d4	*98.5*			*70-126*	*%REC*	*1*	*25-Sep-2023 13:04*
Surr: 4-Bromofluorobenzene	*94.8*			*77-113*	*%REC*	*1*	*25-Sep-2023 13:04*
Surr: Dibromofluoromethane	*103*			*77-123*	*%REC*	*1*	*25-Sep-2023 13:04*
Surr: Toluene-d8	*96.4*			*82-127*	*%REC*	*1*	*25-Sep-2023 13:04*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	22-Sep-2023 18:18
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 18:18
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 18:18
Surr: 2,5-Dibromotoluene (Aliphatic)	*84.3*			*70-130*	*%REC*	*1*	*22-Sep-2023 18:18*
Surr: 2,5-Dibromotoluene (Aromatic)	*93.3*			*70-130*	*%REC*	*1*	*22-Sep-2023 18:18*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 05:05
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 05:05
Aliphatics >C16 - C35	**0.0334**		**0.00800**	**0.00800**	**mg/L**	1	04-Oct-2023 05:05
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 05:05
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	04-Oct-2023 05:05
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	04-Oct-2023 05:05
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	04-Oct-2023 05:05
Surr: 1-Chlorooctadecane	*77.0*			*40-140*	*%REC*	*1*	*04-Oct-2023 05:05*
Surr: 2-Bromonaphthalene	*68.9*			*40-140*	*%REC*	*1*	*04-Oct-2023 05:05*
Surr: 2-Fluorobiphenyl	*42.5*			*40-140*	*%REC*	*1*	*04-Oct-2023 05:05*
Surr: o-Terphenyl	*57.9*			*40-140*	*%REC*	*1*	*04-Oct-2023 05:05*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-8
Collection Date: 19-Sep-2023 07:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-04
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00198**	J	**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 19:16
Barium	**0.475**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 19:16
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:16
Calcium	**80.1**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 19:16
Chromium	**0.000472**	J	**0.000400**	**0.00400**	**mg/L**	1	04-Oct-2023 19:16
Iron	**0.0310**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 19:16
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 19:16
Magnesium	**30.7**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 19:16
Manganese	**0.602**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 19:16
Nickel	**0.00106**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 19:16
Potassium	**4.51**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 19:16
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 19:16
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:16
Sodium	**631**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:20
Strontium	**0.951**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 19:16
Vanadium	**0.00532**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 19:16
Zinc	**0.0296**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 19:16
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 12:42
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,770**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**99.4**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 16:48
Alkalinity, Carbonate (As CaCO3)	**14.0**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 16:48
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.69**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 16:48
Temp Deg C @pH	**21.6**	H	**0**	**0**	**°C**	1	22-Sep-2023 16:48
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 00:59
Chloride	**1,010**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 01:05
Sulfate	**105**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 01:05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-7
Collection Date: 19-Sep-2023 09:15

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-05
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 13:27
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 13:27
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 13:27
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 13:27
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 13:27
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 13:27
Surr: 1,2-Dichloroethane-d4	*96.5*			*70-126*	*%REC*	*1*	*25-Sep-2023 13:27*
Surr: 4-Bromofluorobenzene	*94.3*			*77-113*	*%REC*	*1*	*25-Sep-2023 13:27*
Surr: Dibromofluoromethane	*99.9*			*77-123*	*%REC*	*1*	*25-Sep-2023 13:27*
Surr: Toluene-d8	*96.1*			*82-127*	*%REC*	*1*	*25-Sep-2023 13:27*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	22-Sep-2023 18:56
Aliphatics >C8 - C10	**0.0118**		**0.0100**	**0.0100**	**mg/L**	1	22-Sep-2023 18:56
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 18:56
Surr: 2,5-Dibromotoluene (Aliphatic)	*81.4*			*70-130*	*%REC*	*1*	*22-Sep-2023 18:56*
Surr: 2,5-Dibromotoluene (Aromatic)	*90.1*			*70-130*	*%REC*	*1*	*22-Sep-2023 18:56*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 05:33
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 05:33
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	04-Oct-2023 05:33
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 05:33
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	04-Oct-2023 05:33
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	04-Oct-2023 05:33
Aromatics >C21 - C35	**0.0243**		**0.00900**	**0.00900**	**mg/L**	1	04-Oct-2023 05:33
Surr: 1-Chlorooctadecane	*91.2*			*40-140*	*%REC*	*1*	*04-Oct-2023 05:33*
Surr: 2-Bromonaphthalene	*87.8*			*40-140*	*%REC*	*1*	*04-Oct-2023 05:33*
Surr: 2-Fluorobiphenyl	*60.9*			*40-140*	*%REC*	*1*	*04-Oct-2023 05:33*
Surr: o-Terphenyl	*78.9*			*40-140*	*%REC*	*1*	*04-Oct-2023 05:33*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-7
Collection Date: 19-Sep-2023 09:15

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-05
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00206**		**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 18:45
Barium	**0.451**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 18:45
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 18:45
Calcium	**74.5**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 18:45
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 18:45
Iron	**0.0248**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 18:45
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 18:45
Magnesium	**29.7**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 18:45
Manganese	**0.435**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 18:45
Nickel	**0.000966**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 18:45
Potassium	**4.31**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 18:45
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 18:45
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 18:45
Sodium	**591**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:11
Strontium	**0.895**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 18:45
Vanadium	**0.00588**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 18:45
Zinc	**0.00219**	J	**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 18:45
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 12:48
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,890**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**116**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 16:52
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 16:52
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.01**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 16:52
Temp Deg C @pH	**21.2**	H	**0**	**0**	**°C**	1	22-Sep-2023 16:52
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 01:11
Chloride	**975**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 01:16
Sulfate	**101**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 01:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-6
Collection Date: 19-Sep-2023 09:30

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-06
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 13:49
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 13:49
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 13:49
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 13:49
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 13:49
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 13:49
Surr: 1,2-Dichloroethane-d4	*96.8*			*70-126*	*%REC*	*1*	*25-Sep-2023 13:49*
Surr: 4-Bromofluorobenzene	*95.1*			*77-113*	*%REC*	*1*	*25-Sep-2023 13:49*
Surr: Dibromofluoromethane	*101*			*77-123*	*%REC*	*1*	*25-Sep-2023 13:49*
Surr: Toluene-d8	*98.0*			*82-127*	*%REC*	*1*	*25-Sep-2023 13:49*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	22-Sep-2023 19:35
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 19:35
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 19:35
Surr: 2,5-Dibromotoluene (Aliphatic)	*82.3*			*70-130*	*%REC*	*1*	*22-Sep-2023 19:35*
Surr: 2,5-Dibromotoluene (Aromatic)	*91.1*			*70-130*	*%REC*	*1*	*22-Sep-2023 19:35*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 07:00
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 07:00
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	04-Oct-2023 07:00
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 07:00
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	04-Oct-2023 07:00
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	04-Oct-2023 07:00
Aromatics >C21 - C35	**0.0379**		**0.00900**	**0.00900**	**mg/L**	1	04-Oct-2023 07:00
Surr: 1-Chlorooctadecane	*90.3*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:00*
Surr: 2-Bromonaphthalene	*91.3*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:00*
Surr: 2-Fluorobiphenyl	*73.3*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:00*
Surr: o-Terphenyl	*73.3*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:00*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-6
Collection Date: 19-Sep-2023 09:30

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-06
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00200**		**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 19:43
Barium	**0.446**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 19:43
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:43
Calcium	**82.8**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 19:43
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 19:43
Iron	**0.0871**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 19:43
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 19:43
Magnesium	**31.1**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 19:43
Manganese	**1.18**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 19:43
Nickel	**0.00128**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 19:43
Potassium	**4.63**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 19:43
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 19:43
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:43
Sodium	**598**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:22
Strontium	**0.930**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 19:43
Vanadium	**0.00667**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 19:43
Zinc	**0.00336**	J	**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 19:43
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 12:54
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,030**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**116**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 16:57
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 16:57
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.84**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 16:57
Temp Deg C @pH	**21.0**	H	**0**	**0**	**°C**	1	22-Sep-2023 16:57
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 01:22
Chloride	**957**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 01:28
Sulfate	**101**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 01:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-23
Collection Date: 19-Sep-2023 09:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-07
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 14:12
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 14:12
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 14:12
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 14:12
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 14:12
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 14:12
Surr: 1,2-Dichloroethane-d4	*92.6*			*70-126*	*%REC*	*1*	*25-Sep-2023 14:12*
Surr: 4-Bromofluorobenzene	*94.7*			*77-113*	*%REC*	*1*	*25-Sep-2023 14:12*
Surr: Dibromofluoromethane	*96.4*			*77-123*	*%REC*	*1*	*25-Sep-2023 14:12*
Surr: Toluene-d8	*98.7*			*82-127*	*%REC*	*1*	*25-Sep-2023 14:12*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	22-Sep-2023 21:30
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 21:30
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 21:30
Surr: 2,5-Dibromotoluene (Aliphatic)	*81.1*			*70-130*	*%REC*	*1*	*22-Sep-2023 21:30*
Surr: 2,5-Dibromotoluene (Aromatic)	*89.8*			*70-130*	*%REC*	*1*	*22-Sep-2023 21:30*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 07:28
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 07:28
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	04-Oct-2023 07:28
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 07:28
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	04-Oct-2023 07:28
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	04-Oct-2023 07:28
Aromatics >C21 - C35	**0.0366**		**0.00900**	**0.00900**	**mg/L**	1	04-Oct-2023 07:28
Surr: 1-Chlorooctadecane	*77.3*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:28*
Surr: 2-Bromonaphthalene	*81.6*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:28*
Surr: 2-Fluorobiphenyl	*46.6*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:28*
Surr: o-Terphenyl	*65.1*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:28*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-23
Collection Date: 19-Sep-2023 09:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-07
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00250**		**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 19:45
Barium	**0.460**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 19:45
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:45
Calcium	**85.9**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 19:45
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 19:45
Iron	**0.0343**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 19:45
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 19:45
Magnesium	**32.5**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 19:45
Manganese	**0.696**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 19:45
Nickel	**0.00119**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 19:45
Potassium	**5.03**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 19:45
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 19:45
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:45
Sodium	**586**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:24
Strontium	**0.937**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 19:45
Vanadium	**0.00711**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 19:45
Zinc	**0.00284**	J	**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 19:45
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 12:55
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,810**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**120**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:02
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 17:02
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.94**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 17:02
Temp Deg C @pH	**21.0**	H	**0**	**0**	**°C**	1	22-Sep-2023 17:02
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 01:34
Chloride	**960**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 01:40
Sulfate	**99.3**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 01:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-22
Collection Date: 19-Sep-2023 11:20

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-08
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 14:35
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 14:35
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 14:35
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 14:35
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 14:35
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 14:35
Surr: 1,2-Dichloroethane-d4	*95.7*			*70-126*	*%REC*	*1*	*25-Sep-2023 14:35*
Surr: 4-Bromofluorobenzene	*94.0*			*77-113*	*%REC*	*1*	*25-Sep-2023 14:35*
Surr: Dibromofluoromethane	*99.3*			*77-123*	*%REC*	*1*	*25-Sep-2023 14:35*
Surr: Toluene-d8	*96.1*			*82-127*	*%REC*	*1*	*25-Sep-2023 14:35*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	22-Sep-2023 22:08
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 22:08
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 22:08
Surr: 2,5-Dibromotoluene (Aliphatic)	*79.2*			*70-130*	*%REC*	*1*	*22-Sep-2023 22:08*
Surr: 2,5-Dibromotoluene (Aromatic)	*87.7*			*70-130*	*%REC*	*1*	*22-Sep-2023 22:08*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 07:57
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 07:57
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	04-Oct-2023 07:57
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 07:57
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	04-Oct-2023 07:57
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	04-Oct-2023 07:57
Aromatics >C21 - C35	**0.0374**		**0.00900**	**0.00900**	**mg/L**	1	04-Oct-2023 07:57
Surr: 1-Chlorooctadecane	*80.6*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:57*
Surr: 2-Bromonaphthalene	*99.3*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:57*
Surr: 2-Fluorobiphenyl	*66.2*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:57*
Surr: o-Terphenyl	*81.9*			*40-140*	*%REC*	*1*	*04-Oct-2023 07:57*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-22
Collection Date: 19-Sep-2023 11:20

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-08
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00186**	J	**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 19:47
Barium	**0.496**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 19:47
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:47
Calcium	**78.8**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 19:47
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 19:47
Iron	**0.330**		**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 19:47
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 19:47
Magnesium	**29.2**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 19:47
Manganese	**1.03**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 19:47
Nickel	**0.00103**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 19:47
Potassium	**4.30**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 19:47
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 19:47
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 19:47
Sodium	**534**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:26
Strontium	**0.919**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 19:47
Vanadium	**0.00528**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 19:47
Zinc	**0.00635**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 19:47
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 12:57
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,300**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**124**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:19
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 17:19
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.02**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 17:19
Temp Deg C @pH	**21.3**	H	**0**	**0**	**°C**	1	22-Sep-2023 17:19
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 01:45
Chloride	**999**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 01:51
Sulfate	**105**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 01:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-21
Collection Date: 19-Sep-2023 11:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-09
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 14:58
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 14:58
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 14:58
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 14:58
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 14:58
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 14:58
Surr: 1,2-Dichloroethane-d4	*95.7*			*70-126*	*%REC*	*1*	*25-Sep-2023 14:58*
Surr: 4-Bromofluorobenzene	*94.2*			*77-113*	*%REC*	*1*	*25-Sep-2023 14:58*
Surr: Dibromofluoromethane	*100*			*77-123*	*%REC*	*1*	*25-Sep-2023 14:58*
Surr: Toluene-d8	*97.1*			*82-127*	*%REC*	*1*	*25-Sep-2023 14:58*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	22-Sep-2023 22:46
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 22:46
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 22:46
Surr: 2,5-Dibromotoluene (Aliphatic)	*79.4*			*70-130*	*%REC*	*1*	*22-Sep-2023 22:46*
Surr: 2,5-Dibromotoluene (Aromatic)	*87.9*			*70-130*	*%REC*	*1*	*22-Sep-2023 22:46*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 08:26
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 08:26
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	04-Oct-2023 08:26
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 08:26
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	04-Oct-2023 08:26
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	04-Oct-2023 08:26
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	04-Oct-2023 08:26
Surr: 1-Chlorooctadecane	*78.2*			*40-140*	*%REC*	*1*	*04-Oct-2023 08:26*
Surr: 2-Bromonaphthalene	*93.1*			*40-140*	*%REC*	*1*	*04-Oct-2023 08:26*
Surr: 2-Fluorobiphenyl	*64.3*			*40-140*	*%REC*	*1*	*04-Oct-2023 08:26*
Surr: o-Terphenyl	*72.6*			*40-140*	*%REC*	*1*	*04-Oct-2023 08:26*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-21
Collection Date: 19-Sep-2023 11:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-09
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00184**	J	**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 20:01
Barium	**0.400**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:01
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:01
Calcium	**77.7**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:01
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 20:01
Iron	**0.0291**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:01
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:01
Magnesium	**29.2**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:01
Manganese	**0.540**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:01
Nickel	**0.000935**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 20:01
Potassium	**4.16**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:01
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:01
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:01
Sodium	**570**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:29
Strontium	**0.898**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:01
Vanadium	**0.00473**	J	**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 20:01
Zinc	**0.00372**	J	**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 20:01
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 12:59
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,000**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**106**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:24
Alkalinity, Carbonate (As CaCO3)	**13.2**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:24
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.62**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 17:24
Temp Deg C @pH	**21.4**	H	**0**	**0**	**°C**	1	22-Sep-2023 17:24
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0600	0.200	mg/L	2	05-Oct-2023 02:26
Chloride	**921**		**8.00**	**20.0**	**mg/L**	40	05-Oct-2023 02:32
Sulfate	**100**		**0.400**	**1.00**	**mg/L**	2	05-Oct-2023 02:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-5
Collection Date: 19-Sep-2023 13:30

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-10
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 15:20
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 15:20
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 15:20
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 15:20
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 15:20
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 15:20
Surr: 1,2-Dichloroethane-d4	*96.0*			*70-126*	*%REC*	*1*	*25-Sep-2023 15:20*
Surr: 4-Bromofluorobenzene	*92.2*			*77-113*	*%REC*	*1*	*25-Sep-2023 15:20*
Surr: Dibromofluoromethane	*101*			*77-123*	*%REC*	*1*	*25-Sep-2023 15:20*
Surr: Toluene-d8	*99.2*			*82-127*	*%REC*	*1*	*25-Sep-2023 15:20*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	22-Sep-2023 23:24
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 23:24
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	22-Sep-2023 23:24
Surr: 2,5-Dibromotoluene (Aliphatic)	*78.1*			*70-130*	*%REC*	*1*	*22-Sep-2023 23:24*
Surr: 2,5-Dibromotoluene (Aromatic)	*86.5*			*70-130*	*%REC*	*1*	*22-Sep-2023 23:24*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 15:08
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 15:08
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	04-Oct-2023 15:08
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 02:49
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 02:49
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	05-Oct-2023 02:49
Aromatics >C21 - C35	**0.0145**		**0.00900**	**0.00900**	**mg/L**	1	05-Oct-2023 02:49
Surr: 1-Chlorooctadecane	*82.0*			*40-140*	*%REC*	*1*	*04-Oct-2023 15:08*
Surr: 2-Bromonaphthalene	*92.6*			*40-140*	*%REC*	*1*	*05-Oct-2023 02:49*
Surr: 2-Fluorobiphenyl	*88.8*			*40-140*	*%REC*	*1*	*05-Oct-2023 02:49*
Surr: o-Terphenyl	*77.8*			*40-140*	*%REC*	*1*	*05-Oct-2023 02:49*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-5
Collection Date: 19-Sep-2023 13:30

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-10
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00168**	J	**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 20:03
Barium	**0.413**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:03
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:03
Calcium	**74.5**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:03
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 20:03
Iron	**0.0875**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:03
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:03
Magnesium	**28.0**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:03
Manganese	**0.523**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:03
Nickel	**0.000849**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 20:03
Potassium	**4.25**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:03
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:03
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:03
Sodium	**571**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:38
Strontium	**0.883**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:03
Vanadium	**0.00499**	J	**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 20:03
Zinc	**0.00357**	J	**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 20:03
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 13:39
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,990**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**107**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:30
Alkalinity, Carbonate (As CaCO3)	**13.8**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:30
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.61**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 17:30
Temp Deg C @pH	**21.8**	H	**0**	**0**	**°C**	1	22-Sep-2023 17:30
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 02:37
Chloride	**982**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 02:43
Sulfate	**105**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 02:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-18
Collection Date: 19-Sep-2023 13:50

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-11
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 15:43
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 15:43
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 15:43
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 15:43
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 15:43
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 15:43
Surr: 1,2-Dichloroethane-d4	*92.7*			*70-126*	*%REC*	*1*	*25-Sep-2023 15:43*
Surr: 4-Bromofluorobenzene	*92.6*			*77-113*	*%REC*	*1*	*25-Sep-2023 15:43*
Surr: Dibromofluoromethane	*96.4*			*77-123*	*%REC*	*1*	*25-Sep-2023 15:43*
Surr: Toluene-d8	*99.3*			*82-127*	*%REC*	*1*	*25-Sep-2023 15:43*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	23-Sep-2023 00:03
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 00:03
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 00:03
Surr: 2,5-Dibromotoluene (Aliphatic)	*79.9*			*70-130*	*%REC*	*1*	*23-Sep-2023 00:03*
Surr: 2,5-Dibromotoluene (Aromatic)	*88.4*			*70-130*	*%REC*	*1*	*23-Sep-2023 00:03*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 15:37
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 15:37
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	04-Oct-2023 15:37
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 03:18
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 03:18
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	05-Oct-2023 03:18
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	05-Oct-2023 03:18
Surr: 1-Chlorooctadecane	*77.1*			*40-140*	*%REC*	*1*	*04-Oct-2023 15:37*
Surr: 2-Bromonaphthalene	*94.2*			*40-140*	*%REC*	*1*	*05-Oct-2023 03:18*
Surr: 2-Fluorobiphenyl	*70.1*			*40-140*	*%REC*	*1*	*05-Oct-2023 03:18*
Surr: o-Terphenyl	*72.8*			*40-140*	*%REC*	*1*	*05-Oct-2023 03:18*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-18
Collection Date: 19-Sep-2023 13:50

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-11
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00195**	J	**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 20:06
Barium	**0.450**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:06
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:06
Calcium	**86.2**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:06
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 20:06
Iron	**0.0298**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:06
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:06
Magnesium	**32.9**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:06
Manganese	**0.484**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:06
Nickel	**0.00102**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 20:06
Potassium	**4.66**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:06
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:06
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:06
Sodium	**594**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:40
Strontium	**0.975**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:06
Vanadium	**0.00646**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 20:06
Zinc	U		0.00200	0.00400	mg/L	1	04-Oct-2023 20:06
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 13:40
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,950**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**106**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:36
Alkalinity, Carbonate (As CaCO3)	**17.6**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:36
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.73**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 17:36
Temp Deg C @pH	**21.9**	H	**0**	**0**	**°C**	1	22-Sep-2023 17:36
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 02:49
Chloride	**971**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 02:55
Sulfate	**102**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 02:55

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 19-1603
Collection Date: 19-Sep-2023 15:15

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-12
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 16:06
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 16:06
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 16:06
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 16:06
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 16:06
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 16:06
Surr: 1,2-Dichloroethane-d4	*99.9*			*70-126*	*%REC*	*1*	*25-Sep-2023 16:06*
Surr: 4-Bromofluorobenzene	*93.7*			*77-113*	*%REC*	*1*	*25-Sep-2023 16:06*
Surr: Dibromofluoromethane	*103*			*77-123*	*%REC*	*1*	*25-Sep-2023 16:06*
Surr: Toluene-d8	*94.0*			*82-127*	*%REC*	*1*	*25-Sep-2023 16:06*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	23-Sep-2023 00:41
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 00:41
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 00:41
Surr: 2,5-Dibromotoluene (Aliphatic)	*80.6*			*70-130*	*%REC*	*1*	*23-Sep-2023 00:41*
Surr: 2,5-Dibromotoluene (Aromatic)	*89.2*			*70-130*	*%REC*	*1*	*23-Sep-2023 00:41*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	04-Oct-2023 16:45
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	04-Oct-2023 16:45
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	04-Oct-2023 16:45
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 03:46
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 03:46
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	05-Oct-2023 03:46
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	05-Oct-2023 03:46
Surr: 1-Chlorooctadecane	*73.0*			*40-140*	*%REC*	*1*	*04-Oct-2023 16:45*
Surr: 2-Bromonaphthalene	*93.5*			*40-140*	*%REC*	*1*	*05-Oct-2023 03:46*
Surr: 2-Fluorobiphenyl	*74.7*			*40-140*	*%REC*	*1*	*05-Oct-2023 03:46*
Surr: o-Terphenyl	*67.2*			*40-140*	*%REC*	*1*	*05-Oct-2023 03:46*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 19-1603
Collection Date: 19-Sep-2023 15:15

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-12
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	U		0.000400	0.00200	mg/L	1	04-Oct-2023 20:10
Barium	**0.173**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:10
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:10
Calcium	**19.7**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:10
Chromium	**0.000721**	J	**0.000400**	**0.00400**	**mg/L**	1	04-Oct-2023 20:10
Iron	**3.45**		**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:10
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:10
Magnesium	**6.34**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:10
Manganese	**0.297**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:10
Nickel	**0.000615**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 20:10
Potassium	**3.62**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:10
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:10
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:10
Sodium	**52.1**		**0.140**	**2.00**	**mg/L**	10	05-Oct-2023 13:42
Strontium	**0.177**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:10
Vanadium	U		0.000600	0.00500	mg/L	1	04-Oct-2023 20:10
Zinc	**1.47**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 20:10
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 13:42
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	25-Sep-2023 09:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**224**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**144**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:41
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 17:41
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	22-Sep-2023 15:08
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.38**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 17:41
Temp Deg C @pH	**21.5**	H	**0**	**0**	**°C**	1	22-Sep-2023 17:41
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 03:01
Chloride	**27.0**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 03:01
Sulfate	**2.87**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 03:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 19-580
Collection Date: 20-Sep-2023 07:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-13
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 16:29
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 16:29
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 16:29
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 16:29
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 16:29
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 16:29
Surr: 1,2-Dichloroethane-d4	*101*			*70-126*	*%REC*	*1*	*25-Sep-2023 16:29*
Surr: 4-Bromofluorobenzene	*93.6*			*77-113*	*%REC*	*1*	*25-Sep-2023 16:29*
Surr: Dibromofluoromethane	*104*			*77-123*	*%REC*	*1*	*25-Sep-2023 16:29*
Surr: Toluene-d8	*97.5*			*82-127*	*%REC*	*1*	*25-Sep-2023 16:29*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	23-Sep-2023 01:19
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 01:19
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 01:19
Surr: 2,5-Dibromotoluene (Aliphatic)	*80.7*			*70-130*	*%REC*	*1*	*23-Sep-2023 01:19*
Surr: 2,5-Dibromotoluene (Aromatic)	*89.4*			*70-130*	*%REC*	*1*	*23-Sep-2023 01:19*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 00:54
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	05-Oct-2023 00:54
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	05-Oct-2023 00:54
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 04:15
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 04:15
Aromatics >C16 - C21	**0.0115**		**0.00300**	**0.00300**	**mg/L**	1	05-Oct-2023 04:15
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	05-Oct-2023 04:15
Surr: 1-Chlorooctadecane	*87.1*			*40-140*	*%REC*	*1*	*05-Oct-2023 00:54*
Surr: 2-Bromonaphthalene	*87.9*			*40-140*	*%REC*	*1*	*05-Oct-2023 04:15*
Surr: 2-Fluorobiphenyl	*65.7*			*40-140*	*%REC*	*1*	*05-Oct-2023 04:15*
Surr: o-Terphenyl	*75.4*			*40-140*	*%REC*	*1*	*05-Oct-2023 04:15*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 19-580
Collection Date: 20-Sep-2023 07:45

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-13
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	U		0.000400	0.00200	mg/L	1	04-Oct-2023 20:12
Barium	**0.233**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:12
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:12
Calcium	**27.9**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:12
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 20:12
Iron	**3.57**		**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:12
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:12
Magnesium	**8.54**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:12
Manganese	**0.471**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:12
Nickel	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:12
Potassium	**3.06**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:12
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:12
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:12
Sodium	**30.1**		**0.140**	**2.00**	**mg/L**	10	05-Oct-2023 13:45
Strontium	**0.247**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:12
Vanadium	U		0.000600	0.00500	mg/L	1	04-Oct-2023 20:12
Zinc	**0.0215**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 20:12
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 13:50
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	26-Sep-2023 15:27
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**232**		**5.00**	**10.0**	**mg/L**	1	27-Sep-2023 14:29
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**123**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:46
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 17:46
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	26-Sep-2023 15:09
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.25**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 17:46
Temp Deg C @pH	**21.4**	H	**0**	**0**	**°C**	1	22-Sep-2023 17:46
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 03:12
Chloride	**38.1**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 03:12
Sulfate	**2.58**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 03:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-17
Collection Date: 20-Sep-2023 08:25

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-14
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 16:52
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 16:52
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 16:52
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 16:52
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 16:52
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 16:52
Surr: 1,2-Dichloroethane-d4	*97.7*			*70-126*	*%REC*	*1*	*25-Sep-2023 16:52*
Surr: 4-Bromofluorobenzene	*94.3*			*77-113*	*%REC*	*1*	*25-Sep-2023 16:52*
Surr: Dibromofluoromethane	*102*			*77-123*	*%REC*	*1*	*25-Sep-2023 16:52*
Surr: Toluene-d8	*97.3*			*82-127*	*%REC*	*1*	*25-Sep-2023 16:52*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	23-Sep-2023 01:57
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 01:57
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 01:57
Surr: 2,5-Dibromotoluene (Aliphatic)	*83.1*			*70-130*	*%REC*	*1*	*23-Sep-2023 01:57*
Surr: 2,5-Dibromotoluene (Aromatic)	*91.9*			*70-130*	*%REC*	*1*	*23-Sep-2023 01:57*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 02:20
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	05-Oct-2023 02:20
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	05-Oct-2023 02:20
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 04:44
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 04:44
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	05-Oct-2023 04:44
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	05-Oct-2023 04:44
Surr: 1-Chlorooctadecane	*79.8*			*40-140*	*%REC*	*1*	*05-Oct-2023 02:20*
Surr: 2-Bromonaphthalene	*97.7*			*40-140*	*%REC*	*1*	*05-Oct-2023 04:44*
Surr: 2-Fluorobiphenyl	*57.0*			*40-140*	*%REC*	*1*	*05-Oct-2023 04:44*
Surr: o-Terphenyl	*78.0*			*40-140*	*%REC*	*1*	*05-Oct-2023 04:44*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-17
Collection Date: 20-Sep-2023 08:25

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-14
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00192**	J	**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 20:15
Barium	**0.475**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:15
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:15
Calcium	**77.5**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:15
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 20:15
Iron	**0.0764**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:15
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:15
Magnesium	**29.0**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:15
Manganese	**0.785**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:15
Nickel	**0.00123**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 20:15
Potassium	**4.07**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:15
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:15
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:15
Sodium	**564**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:47
Strontium	**0.900**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:15
Vanadium	**0.00586**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 20:15
Zinc	**0.00505**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 20:15
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 13:51
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	26-Sep-2023 15:27
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,160**		**5.00**	**10.0**	**mg/L**	1	27-Sep-2023 14:29
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**130**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:52
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 17:52
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	26-Sep-2023 15:09
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.74**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 17:52
Temp Deg C @pH	**21.4**	H	**0**	**0**	**°C**	1	22-Sep-2023 17:52
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 03:53
Chloride	**984**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 03:59
Sulfate	**101**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 03:59

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-25
Collection Date: 20-Sep-2023 08:40

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-15
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 17:14
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 17:14
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 17:14
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 17:14
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 17:14
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 17:14
Surr: 1,2-Dichloroethane-d4	*96.4*			*70-126*	*%REC*	*1*	*25-Sep-2023 17:14*
Surr: 4-Bromofluorobenzene	*93.8*			*77-113*	*%REC*	*1*	*25-Sep-2023 17:14*
Surr: Dibromofluoromethane	*100*			*77-123*	*%REC*	*1*	*25-Sep-2023 17:14*
Surr: Toluene-d8	*98.2*			*82-127*	*%REC*	*1*	*25-Sep-2023 17:14*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	23-Sep-2023 02:36
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 02:36
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 02:36
Surr: 2,5-Dibromotoluene (Aliphatic)	*80.3*			*70-130*	*%REC*	*1*	*23-Sep-2023 02:36*
Surr: 2,5-Dibromotoluene (Aromatic)	*88.9*			*70-130*	*%REC*	*1*	*23-Sep-2023 02:36*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 02:49
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	05-Oct-2023 02:49
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	05-Oct-2023 02:49
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 05:12
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 05:12
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	05-Oct-2023 05:12
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	05-Oct-2023 05:12
Surr: 1-Chlorooctadecane	*82.9*			*40-140*	*%REC*	*1*	*05-Oct-2023 02:49*
Surr: 2-Bromonaphthalene	*83.9*			*40-140*	*%REC*	*1*	*05-Oct-2023 05:12*
Surr: 2-Fluorobiphenyl	*54.4*			*40-140*	*%REC*	*1*	*05-Oct-2023 05:12*
Surr: o-Terphenyl	*70.1*			*40-140*	*%REC*	*1*	*05-Oct-2023 05:12*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-25
Collection Date: 20-Sep-2023 08:40

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-15
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00215**		**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 20:48
Barium	**0.393**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:48
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:48
Calcium	**83.7**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:48
Chromium	**0.00101**	J	**0.000400**	**0.00400**	**mg/L**	1	04-Oct-2023 20:48
Iron	**0.172**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:48
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:48
Magnesium	**33.5**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:48
Manganese	**0.557**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:48
Nickel	**0.00115**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 20:48
Potassium	**4.87**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:48
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:48
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:48
Sodium	**609**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:49
Strontium	**1.01**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:48
Vanadium	**0.00687**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 20:48
Zinc	**0.00256**	J	**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 20:48
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 13:53
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	26-Sep-2023 15:27
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,280**		**5.00**	**10.0**	**mg/L**	1	27-Sep-2023 14:29
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**104**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 17:57
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 17:57
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	26-Sep-2023 15:09
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.37**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 17:57
Temp Deg C @pH	**21.5**	H	**0**	**0**	**°C**	1	22-Sep-2023 17:57
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 04:05
Chloride	**620**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 04:10
Sulfate	**96.2**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 04:05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 19-582
Collection Date: 20-Sep-2023 14:10

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-16
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 17:37
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 17:37
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 17:37
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 17:37
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 17:37
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 17:37
Surr: 1,2-Dichloroethane-d4	*98.2*			*70-126*	*%REC*	*1*	*25-Sep-2023 17:37*
Surr: 4-Bromofluorobenzene	*93.6*			*77-113*	*%REC*	*1*	*25-Sep-2023 17:37*
Surr: Dibromofluoromethane	*104*			*77-123*	*%REC*	*1*	*25-Sep-2023 17:37*
Surr: Toluene-d8	*94.9*			*82-127*	*%REC*	*1*	*25-Sep-2023 17:37*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	23-Sep-2023 03:14
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 03:14
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 03:14
Surr: 2,5-Dibromotoluene (Aliphatic)	*78.6*			*70-130*	*%REC*	*1*	*23-Sep-2023 03:14*
Surr: 2,5-Dibromotoluene (Aromatic)	*87.0*			*70-130*	*%REC*	*1*	*23-Sep-2023 03:14*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 03:18
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	05-Oct-2023 03:18
Aliphatics >C16 - C35	**0.0206**		**0.00800**	**0.00800**	**mg/L**	1	05-Oct-2023 03:18
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 05:41
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 05:41
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	05-Oct-2023 05:41
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	05-Oct-2023 05:41
Surr: 1-Chlorooctadecane	*95.5*			*40-140*	*%REC*	*1*	*05-Oct-2023 03:18*
Surr: 2-Bromonaphthalene	*79.1*			*40-140*	*%REC*	*1*	*05-Oct-2023 05:41*
Surr: 2-Fluorobiphenyl	*56.5*			*40-140*	*%REC*	*1*	*05-Oct-2023 05:41*
Surr: o-Terphenyl	*74.2*			*40-140*	*%REC*	*1*	*05-Oct-2023 05:41*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 19-582
Collection Date: 20-Sep-2023 14:10

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-16
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	U		0.000400	0.00200	mg/L	1	04-Oct-2023 20:51
Barium	**0.197**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:51
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:51
Calcium	**22.6**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:51
Chromium	**0.000469**	J	**0.000400**	**0.00400**	**mg/L**	1	04-Oct-2023 20:51
Iron	**4.49**		**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:51
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:51
Magnesium	**7.05**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:51
Manganese	**0.353**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:51
Nickel	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:51
Potassium	**3.30**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:51
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:51
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:51
Sodium	**46.5**		**0.0140**	**0.200**	**mg/L**	1	04-Oct-2023 20:51
Strontium	**0.201**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:51
Vanadium	U		0.000600	0.00500	mg/L	1	04-Oct-2023 20:51
Zinc	**0.00742**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 20:51
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 13:55
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	26-Sep-2023 15:27
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**256**		**5.00**	**10.0**	**mg/L**	1	27-Sep-2023 14:29
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**132**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 18:03
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 18:03
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	26-Sep-2023 15:09
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.42**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 18:03
Temp Deg C @pH	**21.7**	H	**0**	**0**	**°C**	1	22-Sep-2023 18:03
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 04:16
Chloride	**31.0**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 04:16
Sulfate	**2.73**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 04:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 191055
Collection Date: 20-Sep-2023 14:30

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-17
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 18:00
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 18:00
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 18:00
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 18:00
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 18:00
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 18:00
Surr: 1,2-Dichloroethane-d4	*98.8*			*70-126*	*%REC*	*1*	*25-Sep-2023 18:00*
Surr: 4-Bromofluorobenzene	*95.5*			*77-113*	*%REC*	*1*	*25-Sep-2023 18:00*
Surr: Dibromofluoromethane	*105*			*77-123*	*%REC*	*1*	*25-Sep-2023 18:00*
Surr: Toluene-d8	*95.8*			*82-127*	*%REC*	*1*	*25-Sep-2023 18:00*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	23-Sep-2023 06:25
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 06:25
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 06:25
Surr: 2,5-Dibromotoluene (Aliphatic)	*77.8*			*70-130*	*%REC*	*1*	*23-Sep-2023 06:25*
Surr: 2,5-Dibromotoluene (Aromatic)	*86.1*			*70-130*	*%REC*	*1*	*23-Sep-2023 06:25*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 03:46
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	05-Oct-2023 03:46
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	05-Oct-2023 03:46
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 07:07
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 07:07
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	05-Oct-2023 07:07
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	05-Oct-2023 07:07
Surr: 1-Chlorooctadecane	*88.1*			*40-140*	*%REC*	*1*	*05-Oct-2023 03:46*
Surr: 2-Bromonaphthalene	*97.0*			*40-140*	*%REC*	*1*	*05-Oct-2023 07:07*
Surr: 2-Fluorobiphenyl	*86.3*			*40-140*	*%REC*	*1*	*05-Oct-2023 07:07*
Surr: o-Terphenyl	*86.0*			*40-140*	*%REC*	*1*	*05-Oct-2023 07:07*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: 191055
Collection Date: 20-Sep-2023 14:30

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-17
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	U		0.000400	0.00200	mg/L	1	04-Oct-2023 20:55
Barium	**0.275**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:55
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:55
Calcium	**30.1**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:55
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 20:55
Iron	**3.83**		**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:55
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:55
Magnesium	**9.04**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:55
Manganese	**0.432**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:55
Nickel	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:55
Potassium	**3.29**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:55
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:55
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:55
Sodium	**35.1**		**0.0140**	**0.200**	**mg/L**	1	04-Oct-2023 20:55
Strontium	**0.266**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:55
Vanadium	U		0.000600	0.00500	mg/L	1	04-Oct-2023 20:55
Zinc	**0.0241**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 20:55
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 13:56
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	26-Sep-2023 15:27
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**244**		**5.00**	**10.0**	**mg/L**	1	27-Sep-2023 14:29
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**121**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 18:08
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 18:08
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	26-Sep-2023 15:09
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.23**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 18:08
Temp Deg C @pH	**21.8**	H	**0**	**0**	**°C**	1	22-Sep-2023 18:08
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 04:28
Chloride	**37.8**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 04:28
Sulfate	**3.45**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 04:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: COTTAGE WELL
Collection Date: 20-Sep-2023 15:30

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-18
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 18:23
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 18:23
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 18:23
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 18:23
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 18:23
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 18:23
Surr: 1,2-Dichloroethane-d4	*99.3*			*70-126*	*%REC*	*1*	*25-Sep-2023 18:23*
Surr: 4-Bromofluorobenzene	*93.5*			*77-113*	*%REC*	*1*	*25-Sep-2023 18:23*
Surr: Dibromofluoromethane	*105*			*77-123*	*%REC*	*1*	*25-Sep-2023 18:23*
Surr: Toluene-d8	*98.2*			*82-127*	*%REC*	*1*	*25-Sep-2023 18:23*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	23-Sep-2023 07:03
Aliphatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 07:03
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	23-Sep-2023 07:03
Surr: 2,5-Dibromotoluene (Aliphatic)	*76.2*			*70-130*	*%REC*	*1*	*23-Sep-2023 07:03*
Surr: 2,5-Dibromotoluene (Aromatic)	*84.4*			*70-130*	*%REC*	*1*	*23-Sep-2023 07:03*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 04:15
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	05-Oct-2023 04:15
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	05-Oct-2023 04:15
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 07:36
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 07:36
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	05-Oct-2023 07:36
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	05-Oct-2023 07:36
Surr: 1-Chlorooctadecane	*78.7*			*40-140*	*%REC*	*1*	*05-Oct-2023 04:15*
Surr: 2-Bromonaphthalene	*84.2*			*40-140*	*%REC*	*1*	*05-Oct-2023 07:36*
Surr: 2-Fluorobiphenyl	*60.5*			*40-140*	*%REC*	*1*	*05-Oct-2023 07:36*
Surr: o-Terphenyl	*70.3*			*40-140*	*%REC*	*1*	*05-Oct-2023 07:36*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: COTTAGE WELL
Collection Date: 20-Sep-2023 15:30

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-18
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	U		0.000400	0.00200	mg/L	1	04-Oct-2023 20:57
Barium	**0.181**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 20:57
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:57
Calcium	**14.4**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 20:57
Chromium	U		0.000400	0.00400	mg/L	1	04-Oct-2023 20:57
Iron	**2.35**		**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 20:57
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:57
Magnesium	**4.05**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 20:57
Manganese	**0.183**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 20:57
Nickel	U		0.000600	0.00200	mg/L	1	04-Oct-2023 20:57
Potassium	**2.38**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 20:57
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 20:57
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 20:57
Sodium	**77.9**		**0.0140**	**0.200**	**mg/L**	1	04-Oct-2023 20:57
Strontium	**0.166**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 20:57
Vanadium	U		0.000600	0.00500	mg/L	1	04-Oct-2023 20:57
Zinc	**0.0981**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 20:57
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 14:03
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	26-Sep-2023 15:27
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**270**		**5.00**	**10.0**	**mg/L**	1	27-Sep-2023 14:29
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**141**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 18:26
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 18:26
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	26-Sep-2023 15:09
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**7.44**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 18:26
Temp Deg C @pH	**22.3**	H	**0**	**0**	**°C**	1	22-Sep-2023 18:26
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	**0.106**		**0.0300**	**0.100**	**mg/L**	1	05-Oct-2023 04:39
Chloride	**54.5**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 04:39
Sulfate	**0.300**	J	**0.200**	**0.500**	**mg/L**	1	05-Oct-2023 04:39

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-12
Collection Date: 19-Sep-2023 08:00

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-19
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**					Analyst: FT
Benzene		U	0.20	1.0	ug/L	1	25-Sep-2023 18:45
Ethylbenzene		U	0.30	1.0	ug/L	1	25-Sep-2023 18:45
m,p-Xylene		U	0.50	2.0	ug/L	1	25-Sep-2023 18:45
o-Xylene		U	0.30	1.0	ug/L	1	25-Sep-2023 18:45
Toluene		U	0.20	1.0	ug/L	1	25-Sep-2023 18:45
Xylenes, Total		U	0.30	1.0	ug/L	1	25-Sep-2023 18:45
Surr: 1,2-Dichloroethane-d4	*94.7*			*70-126*	*%REC*	*1*	*25-Sep-2023 18:45*
Surr: 4-Bromofluorobenzene	*91.9*			*77-113*	*%REC*	*1*	*25-Sep-2023 18:45*
Surr: Dibromofluoromethane	*98.9*			*77-123*	*%REC*	*1*	*25-Sep-2023 18:45*
Surr: Toluene-d8	*97.4*			*82-127*	*%REC*	*1*	*25-Sep-2023 18:45*
MASSACHUSETTS VPH, FEB 2018, REV 2.1		**Method:MA VPH**					Analyst: TS
Aliphatics >C6 - C8		U	0.0100	0.0100	mg/L	1	26-Sep-2023 03:59
Aliphatics >C8 - C10	**0.0123**		**0.0100**	**0.0100**	**mg/L**	1	26-Sep-2023 03:59
Aromatics >C8 - C10		U	0.0100	0.0100	mg/L	1	26-Sep-2023 03:59
Surr: 2,5-Dibromotoluene (Aliphatic)	*99.1*			*70-130*	*%REC*	*1*	*26-Sep-2023 03:59*
Surr: 2,5-Dibromotoluene (Aromatic)	*110*			*70-130*	*%REC*	*1*	*26-Sep-2023 03:59*
MASSACHUSETTS EPH R2.1, DEC 2019		**Method:MA EPH**			Prep:SW3510 / 29-Sep-2023		Analyst: SAM
Aliphatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 04:44
Aliphatics >C12 - C16		U	0.00200	0.00200	mg/L	1	05-Oct-2023 04:44
Aliphatics >C16 - C35		U	0.00800	0.00800	mg/L	1	05-Oct-2023 04:44
Aromatics >C10 - C12		U	0.00100	0.00100	mg/L	1	05-Oct-2023 08:05
Aromatics >C12 - C16		U	0.00400	0.00400	mg/L	1	05-Oct-2023 08:05
Aromatics >C16 - C21		U	0.00300	0.00300	mg/L	1	05-Oct-2023 08:05
Aromatics >C21 - C35		U	0.00900	0.00900	mg/L	1	05-Oct-2023 08:05
Surr: 1-Chlorooctadecane	*75.2*			*40-140*	*%REC*	*1*	*05-Oct-2023 04:44*
Surr: 2-Bromonaphthalene	*96.1*			*40-140*	*%REC*	*1*	*05-Oct-2023 08:05*
Surr: 2-Fluorobiphenyl	*76.0*			*40-140*	*%REC*	*1*	*05-Oct-2023 08:05*
Surr: o-Terphenyl	*74.5*			*40-140*	*%REC*	*1*	*05-Oct-2023 08:05*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
Sample ID: BS-12
Collection Date: 19-Sep-2023 08:00

ANALYTICAL REPORT
WorkOrder:HS23091305
Lab ID:HS23091305-19
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 03-Oct-2023		Analyst: MSC
Arsenic	**0.00217**		**0.000400**	**0.00200**	**mg/L**	1	04-Oct-2023 21:00
Barium	**0.440**		**0.00190**	**0.00400**	**mg/L**	1	04-Oct-2023 21:00
Cadmium	U		0.000200	0.00200	mg/L	1	04-Oct-2023 21:00
Calcium	**80.7**		**0.0340**	**0.500**	**mg/L**	1	04-Oct-2023 21:00
Chromium	**0.000960**	J	**0.000400**	**0.00400**	**mg/L**	1	04-Oct-2023 21:00
Iron	**0.0404**	J	**0.0120**	**0.200**	**mg/L**	1	04-Oct-2023 21:00
Lead	U		0.000600	0.00200	mg/L	1	04-Oct-2023 21:00
Magnesium	**32.6**		**0.0100**	**0.200**	**mg/L**	1	04-Oct-2023 21:00
Manganese	**0.768**		**0.000700**	**0.00500**	**mg/L**	1	04-Oct-2023 21:00
Nickel	**0.00137**	J	**0.000600**	**0.00200**	**mg/L**	1	04-Oct-2023 21:00
Potassium	**4.79**		**0.0180**	**0.200**	**mg/L**	1	04-Oct-2023 21:00
Selenium	U		0.00110	0.00200	mg/L	1	04-Oct-2023 21:00
Silver	U		0.000200	0.00200	mg/L	1	04-Oct-2023 21:00
Sodium	**603**		**1.40**	**20.0**	**mg/L**	100	05-Oct-2023 13:51
Strontium	**0.947**		**0.000200**	**0.00500**	**mg/L**	1	04-Oct-2023 21:00
Vanadium	**0.00636**		**0.000600**	**0.00500**	**mg/L**	1	04-Oct-2023 21:00
Zinc	**0.0118**		**0.00200**	**0.00400**	**mg/L**	1	04-Oct-2023 21:00
MERCURY BY SW7470A		**Method:SW7470A**			Prep:SW7470A / 04-Oct-2023		Analyst: JS
Mercury	U		0.0000300	0.000200	mg/L	1	04-Oct-2023 14:05
HYDROGEN SULFIDE BY E376.1		**Method:E376.1**					Analyst: CD
Hydrogen Sulfide	U		0.500	1.00	mg/L	1	26-Sep-2023 15:27
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,210**		**5.00**	**10.0**	**mg/L**	1	26-Sep-2023 14:00
ALKALINITY BY -2011		**Method:SM2320B**					Analyst: DW
Alkalinity, Bicarbonate (As CaCO3)	**107**		**5.00**	**5.00**	**mg/L**	1	22-Sep-2023 18:31
Alkalinity, Carbonate (As CaCO3)	U		5.00	5.00	mg/L	1	22-Sep-2023 18:31
SULFIDE BY SM4500 S2-F-2011		**Method:SM4500 S2-F**					Analyst: CD
Sulfide	U		1.70	2.00	mg/L	1	26-Sep-2023 15:09
PH BY SM4500H+ B-2011		**Method:SM4500H+ B**					Analyst: DW
pH	**8.15**	H	**0.100**	**0.100**	**pH Units**	1	22-Sep-2023 18:31
Temp Deg C @pH	**22.0**	H	**0**	**0**	**°C**	1	22-Sep-2023 18:31
ANIONS BY SW9056A		**Method:SW9056**					Analyst: TH
Bromide	U		0.0300	0.100	mg/L	1	05-Oct-2023 05:20
Chloride	**972**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 05:25
Sulfate	**103**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2023 05:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

Batch ID: 201163 **Start Date:** 29 Sep 2023 09:21 **End Date:** 29 Sep 2023 09:21
Method: MA EPH EXTRACTION-FRACTIONATION **Prep Code:** MA EPH_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23091305-01	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-02	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-03	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-04	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-05	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-06	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-07	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-08	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-09	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-10	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-11	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-12	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-13	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-14	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-15	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-16	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-17	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-18	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2
HS23091305-19	1	1000 (mL)	2 (mL)	0.002	1-litre amber glass, HCL to pH <2

Batch ID: 201350 **Start Date:** 03 Oct 2023 16:00 **End Date:** 03 Oct 2023 16:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23091305-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-12		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-13		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-14		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-15		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-16		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-17		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-18		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-19		10 (mL)	10 (mL)	1	120 plastic HNO3

Weight / Prep Log

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

Batch ID: 201402 **Start Date:** 04 Oct 2023 07:00 **End Date:** 04 Oct 2023 07:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23091305-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-09		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 201403 **Start Date:** 04 Oct 2023 07:00 **End Date:** 04 Oct 2023 07:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23091305-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-12		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-13		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-14		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-15		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-16		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-17		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-18		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23091305-19		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 201163 (0)	**Test Name :** MASSACHUSETTS EPH R2.1, DEC 2019				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00		29 Sep 2023 09:21	05 Oct 2023 02:20	1
HS23091305-01	BS-3	18 Sep 2023 12:00		29 Sep 2023 09:21	04 Oct 2023 23:57	1
HS23091305-02	BS-26	18 Sep 2023 14:00		29 Sep 2023 09:21	04 Oct 2023 04:07	1
HS23091305-02	BS-26	18 Sep 2023 14:00		29 Sep 2023 09:21	04 Oct 2023 04:07	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45		29 Sep 2023 09:21	05 Oct 2023 00:26	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45		29 Sep 2023 09:21	04 Oct 2023 04:36	1
HS23091305-04	BS-8	19 Sep 2023 07:45		29 Sep 2023 09:21	04 Oct 2023 05:05	1
HS23091305-04	BS-8	19 Sep 2023 07:45		29 Sep 2023 09:21	04 Oct 2023 05:05	1
HS23091305-05	BS-7	19 Sep 2023 09:15		29 Sep 2023 09:21	04 Oct 2023 05:33	1
HS23091305-05	BS-7	19 Sep 2023 09:15		29 Sep 2023 09:21	04 Oct 2023 05:33	1
HS23091305-06	BS-6	19 Sep 2023 09:30		29 Sep 2023 09:21	04 Oct 2023 07:00	1
HS23091305-06	BS-6	19 Sep 2023 09:30		29 Sep 2023 09:21	04 Oct 2023 07:00	1
HS23091305-07	BS-23	19 Sep 2023 09:45		29 Sep 2023 09:21	04 Oct 2023 07:28	1
HS23091305-07	BS-23	19 Sep 2023 09:45		29 Sep 2023 09:21	04 Oct 2023 07:28	1
HS23091305-08	BS-22	19 Sep 2023 11:20		29 Sep 2023 09:21	04 Oct 2023 07:57	1
HS23091305-08	BS-22	19 Sep 2023 11:20		29 Sep 2023 09:21	04 Oct 2023 07:57	1
HS23091305-09	BS-21	19 Sep 2023 11:45		29 Sep 2023 09:21	04 Oct 2023 08:26	1
HS23091305-09	BS-21	19 Sep 2023 11:45		29 Sep 2023 09:21	04 Oct 2023 08:26	1
HS23091305-10	BS-5	19 Sep 2023 13:30		29 Sep 2023 09:21	05 Oct 2023 02:49	1
HS23091305-10	BS-5	19 Sep 2023 13:30		29 Sep 2023 09:21	04 Oct 2023 15:08	1
HS23091305-11	BS-18	19 Sep 2023 13:50		29 Sep 2023 09:21	05 Oct 2023 03:18	1
HS23091305-11	BS-18	19 Sep 2023 13:50		29 Sep 2023 09:21	04 Oct 2023 15:37	1
HS23091305-12	19-1603	19 Sep 2023 15:15		29 Sep 2023 09:21	05 Oct 2023 03:46	1
HS23091305-12	19-1603	19 Sep 2023 15:15		29 Sep 2023 09:21	04 Oct 2023 16:45	1
HS23091305-13	19-580	20 Sep 2023 07:45		29 Sep 2023 09:21	05 Oct 2023 04:15	1
HS23091305-13	19-580	20 Sep 2023 07:45		29 Sep 2023 09:21	05 Oct 2023 00:54	1
HS23091305-14	BS-17	20 Sep 2023 08:25		29 Sep 2023 09:21	05 Oct 2023 04:44	1
HS23091305-14	BS-17	20 Sep 2023 08:25		29 Sep 2023 09:21	05 Oct 2023 02:20	1
HS23091305-15	BS-25	20 Sep 2023 08:40		29 Sep 2023 09:21	05 Oct 2023 05:12	1
HS23091305-15	BS-25	20 Sep 2023 08:40		29 Sep 2023 09:21	05 Oct 2023 02:49	1
HS23091305-16	19-582	20 Sep 2023 14:10		29 Sep 2023 09:21	05 Oct 2023 05:41	1
HS23091305-16	19-582	20 Sep 2023 14:10		29 Sep 2023 09:21	05 Oct 2023 03:18	1
HS23091305-17	191055	20 Sep 2023 14:30		29 Sep 2023 09:21	05 Oct 2023 07:07	1
HS23091305-17	191055	20 Sep 2023 14:30		29 Sep 2023 09:21	05 Oct 2023 03:46	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30		29 Sep 2023 09:21	05 Oct 2023 07:36	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30		29 Sep 2023 09:21	05 Oct 2023 04:15	1
HS23091305-19	BS-12	19 Sep 2023 08:00		29 Sep 2023 09:21	05 Oct 2023 08:05	1
HS23091305-19	BS-12	19 Sep 2023 08:00		29 Sep 2023 09:21	05 Oct 2023 04:44	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome **DATES REPORT**
WorkOrder: HS23091305

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 201350 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00		03 Oct 2023 16:00	05 Oct 2023 13:08	100
HS23091305-01	BS-3	18 Sep 2023 12:00		03 Oct 2023 16:00	04 Oct 2023 19:09	1
HS23091305-02	BS-26	18 Sep 2023 14:00		03 Oct 2023 16:00	05 Oct 2023 14:53	10
HS23091305-02	BS-26	18 Sep 2023 14:00		03 Oct 2023 16:00	04 Oct 2023 19:12	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45		03 Oct 2023 16:00	05 Oct 2023 13:17	200
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45		03 Oct 2023 16:00	04 Oct 2023 19:14	1
HS23091305-04	BS-8	19 Sep 2023 07:45		03 Oct 2023 16:00	05 Oct 2023 13:20	100
HS23091305-04	BS-8	19 Sep 2023 07:45		03 Oct 2023 16:00	04 Oct 2023 19:16	1
HS23091305-05	BS-7	19 Sep 2023 09:15		03 Oct 2023 16:00	05 Oct 2023 13:11	100
HS23091305-05	BS-7	19 Sep 2023 09:15		03 Oct 2023 16:00	04 Oct 2023 18:45	1
HS23091305-06	BS-6	19 Sep 2023 09:30		03 Oct 2023 16:00	05 Oct 2023 13:22	100
HS23091305-06	BS-6	19 Sep 2023 09:30		03 Oct 2023 16:00	04 Oct 2023 19:43	1
HS23091305-07	BS-23	19 Sep 2023 09:45		03 Oct 2023 16:00	05 Oct 2023 13:24	100
HS23091305-07	BS-23	19 Sep 2023 09:45		03 Oct 2023 16:00	04 Oct 2023 19:45	1
HS23091305-08	BS-22	19 Sep 2023 11:20		03 Oct 2023 16:00	05 Oct 2023 13:26	100
HS23091305-08	BS-22	19 Sep 2023 11:20		03 Oct 2023 16:00	04 Oct 2023 19:47	1
HS23091305-09	BS-21	19 Sep 2023 11:45		03 Oct 2023 16:00	05 Oct 2023 13:29	100
HS23091305-09	BS-21	19 Sep 2023 11:45		03 Oct 2023 16:00	04 Oct 2023 20:01	1
HS23091305-10	BS-5	19 Sep 2023 13:30		03 Oct 2023 16:00	05 Oct 2023 13:38	100
HS23091305-10	BS-5	19 Sep 2023 13:30		03 Oct 2023 16:00	04 Oct 2023 20:03	1
HS23091305-11	BS-18	19 Sep 2023 13:50		03 Oct 2023 16:00	05 Oct 2023 13:40	100
HS23091305-11	BS-18	19 Sep 2023 13:50		03 Oct 2023 16:00	04 Oct 2023 20:06	1
HS23091305-12	19-1603	19 Sep 2023 15:15		03 Oct 2023 16:00	05 Oct 2023 13:42	10
HS23091305-12	19-1603	19 Sep 2023 15:15		03 Oct 2023 16:00	04 Oct 2023 20:10	1
HS23091305-13	19-580	20 Sep 2023 07:45		03 Oct 2023 16:00	05 Oct 2023 13:45	10
HS23091305-13	19-580	20 Sep 2023 07:45		03 Oct 2023 16:00	04 Oct 2023 20:12	1
HS23091305-14	BS-17	20 Sep 2023 08:25		03 Oct 2023 16:00	05 Oct 2023 13:47	100
HS23091305-14	BS-17	20 Sep 2023 08:25		03 Oct 2023 16:00	04 Oct 2023 20:15	1
HS23091305-15	BS-25	20 Sep 2023 08:40		03 Oct 2023 16:00	05 Oct 2023 13:49	100
HS23091305-15	BS-25	20 Sep 2023 08:40		03 Oct 2023 16:00	04 Oct 2023 20:48	1
HS23091305-16	19-582	20 Sep 2023 14:10		03 Oct 2023 16:00	04 Oct 2023 20:51	1
HS23091305-17	191055	20 Sep 2023 14:30		03 Oct 2023 16:00	04 Oct 2023 20:55	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30		03 Oct 2023 16:00	04 Oct 2023 20:57	1
HS23091305-19	BS-12	19 Sep 2023 08:00		03 Oct 2023 16:00	05 Oct 2023 13:51	100
HS23091305-19	BS-12	19 Sep 2023 08:00		03 Oct 2023 16:00	04 Oct 2023 21:00	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 201402 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00		04 Oct 2023 07:00	04 Oct 2023 12:37	1
HS23091305-02	BS-26	18 Sep 2023 14:00		04 Oct 2023 07:00	04 Oct 2023 12:39	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45		04 Oct 2023 07:00	04 Oct 2023 12:40	1
HS23091305-04	BS-8	19 Sep 2023 07:45		04 Oct 2023 07:00	04 Oct 2023 12:42	1
HS23091305-05	BS-7	19 Sep 2023 09:15		04 Oct 2023 07:00	04 Oct 2023 12:48	1
HS23091305-06	BS-6	19 Sep 2023 09:30		04 Oct 2023 07:00	04 Oct 2023 12:54	1
HS23091305-07	BS-23	19 Sep 2023 09:45		04 Oct 2023 07:00	04 Oct 2023 12:55	1
HS23091305-08	BS-22	19 Sep 2023 11:20		04 Oct 2023 07:00	04 Oct 2023 12:57	1
HS23091305-09	BS-21	19 Sep 2023 11:45		04 Oct 2023 07:00	04 Oct 2023 12:59	1
Batch ID: 201403 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Water	
HS23091305-10	BS-5	19 Sep 2023 13:30		04 Oct 2023 07:00	04 Oct 2023 13:39	1
HS23091305-11	BS-18	19 Sep 2023 13:50		04 Oct 2023 07:00	04 Oct 2023 13:40	1
HS23091305-12	19-1603	19 Sep 2023 15:15		04 Oct 2023 07:00	04 Oct 2023 13:42	1
HS23091305-13	19-580	20 Sep 2023 07:45		04 Oct 2023 07:00	04 Oct 2023 13:50	1
HS23091305-14	BS-17	20 Sep 2023 08:25		04 Oct 2023 07:00	04 Oct 2023 13:51	1
HS23091305-15	BS-25	20 Sep 2023 08:40		04 Oct 2023 07:00	04 Oct 2023 13:53	1
HS23091305-16	19-582	20 Sep 2023 14:10		04 Oct 2023 07:00	04 Oct 2023 13:55	1
HS23091305-17	191055	20 Sep 2023 14:30		04 Oct 2023 07:00	04 Oct 2023 13:56	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30		04 Oct 2023 07:00	04 Oct 2023 14:03	1
HS23091305-19	BS-12	19 Sep 2023 08:00		04 Oct 2023 07:00	04 Oct 2023 14:05	1
Batch ID: R447118 (0)	**Test Name :** SULFIDE BY SM4500 S2-F-2011				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00			22 Sep 2023 15:08	1
HS23091305-02	BS-26	18 Sep 2023 14:00			22 Sep 2023 15:08	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			22 Sep 2023 15:08	1
HS23091305-04	BS-8	19 Sep 2023 07:45			22 Sep 2023 15:08	1
HS23091305-05	BS-7	19 Sep 2023 09:15			22 Sep 2023 15:08	1
HS23091305-06	BS-6	19 Sep 2023 09:30			22 Sep 2023 15:08	1
HS23091305-07	BS-23	19 Sep 2023 09:45			22 Sep 2023 15:08	1
HS23091305-08	BS-22	19 Sep 2023 11:20			22 Sep 2023 15:08	1
HS23091305-09	BS-21	19 Sep 2023 11:45			22 Sep 2023 15:08	1
HS23091305-10	BS-5	19 Sep 2023 13:30			22 Sep 2023 15:08	1
HS23091305-11	BS-18	19 Sep 2023 13:50			22 Sep 2023 15:08	1
HS23091305-12	19-1603	19 Sep 2023 15:15			22 Sep 2023 15:08	1
Batch ID: R447158 (0)	**Test Name :** ALKALINITY BY -2011				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00			22 Sep 2023 15:59	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R447159 (0)	**Test Name :** ALKALINITY BY -2011				**Matrix:** Water	
HS23091305-02	BS-26	18 Sep 2023 14:00			22 Sep 2023 16:31	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			22 Sep 2023 16:42	1
HS23091305-04	BS-8	19 Sep 2023 07:45			22 Sep 2023 16:48	1
HS23091305-05	BS-7	19 Sep 2023 09:15			22 Sep 2023 16:52	1
HS23091305-06	BS-6	19 Sep 2023 09:30			22 Sep 2023 16:57	1
HS23091305-07	BS-23	19 Sep 2023 09:45			22 Sep 2023 17:02	1
HS23091305-08	BS-22	19 Sep 2023 11:20			22 Sep 2023 17:19	1
HS23091305-09	BS-21	19 Sep 2023 11:45			22 Sep 2023 17:24	1
HS23091305-10	BS-5	19 Sep 2023 13:30			22 Sep 2023 17:30	1
HS23091305-11	BS-18	19 Sep 2023 13:50			22 Sep 2023 17:36	1
HS23091305-12	19-1603	19 Sep 2023 15:15			22 Sep 2023 17:41	1
HS23091305-13	19-580	20 Sep 2023 07:45			22 Sep 2023 17:46	1
HS23091305-14	BS-17	20 Sep 2023 08:25			22 Sep 2023 17:52	1
HS23091305-15	BS-25	20 Sep 2023 08:40			22 Sep 2023 17:57	1
HS23091305-16	19-582	20 Sep 2023 14:10			22 Sep 2023 18:03	1
HS23091305-17	191055	20 Sep 2023 14:30			22 Sep 2023 18:08	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30			22 Sep 2023 18:26	1
HS23091305-19	BS-12	19 Sep 2023 08:00			22 Sep 2023 18:31	1
Batch ID: R447160 (0)	**Test Name :** PH BY SM4500H+ B-2011				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00			22 Sep 2023 15:59	1
HS23091305-02	BS-26	18 Sep 2023 14:00			22 Sep 2023 16:31	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			22 Sep 2023 16:42	1
HS23091305-04	BS-8	19 Sep 2023 07:45			22 Sep 2023 16:48	1
HS23091305-05	BS-7	19 Sep 2023 09:15			22 Sep 2023 16:52	1
HS23091305-06	BS-6	19 Sep 2023 09:30			22 Sep 2023 16:57	1
HS23091305-07	BS-23	19 Sep 2023 09:45			22 Sep 2023 17:02	1
HS23091305-08	BS-22	19 Sep 2023 11:20			22 Sep 2023 17:19	1
HS23091305-09	BS-21	19 Sep 2023 11:45			22 Sep 2023 17:24	1
HS23091305-10	BS-5	19 Sep 2023 13:30			22 Sep 2023 17:30	1
HS23091305-11	BS-18	19 Sep 2023 13:50			22 Sep 2023 17:36	1
HS23091305-12	19-1603	19 Sep 2023 15:15			22 Sep 2023 17:41	1
HS23091305-13	19-580	20 Sep 2023 07:45			22 Sep 2023 17:46	1
HS23091305-14	BS-17	20 Sep 2023 08:25			22 Sep 2023 17:52	1
HS23091305-15	BS-25	20 Sep 2023 08:40			22 Sep 2023 17:57	1
HS23091305-16	19-582	20 Sep 2023 14:10			22 Sep 2023 18:03	1
HS23091305-17	191055	20 Sep 2023 14:30			22 Sep 2023 18:08	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30			22 Sep 2023 18:26	1
HS23091305-19	BS-12	19 Sep 2023 08:00			22 Sep 2023 18:31	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R447176 (0)	**Test Name :** MASSACHUSETTS VPH, FEB 2018, REV 2.1				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00			22 Sep 2023 16:23	1
HS23091305-02	BS-26	18 Sep 2023 14:00			22 Sep 2023 17:02	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			22 Sep 2023 17:40	1
HS23091305-04	BS-8	19 Sep 2023 07:45			22 Sep 2023 18:18	1
HS23091305-05	BS-7	19 Sep 2023 09:15			22 Sep 2023 18:56	1
HS23091305-06	BS-6	19 Sep 2023 09:30			22 Sep 2023 19:35	1
HS23091305-07	BS-23	19 Sep 2023 09:45			22 Sep 2023 21:30	1
HS23091305-08	BS-22	19 Sep 2023 11:20			22 Sep 2023 22:08	1
HS23091305-09	BS-21	19 Sep 2023 11:45			22 Sep 2023 22:46	1
HS23091305-10	BS-5	19 Sep 2023 13:30			22 Sep 2023 23:24	1
HS23091305-11	BS-18	19 Sep 2023 13:50			23 Sep 2023 00:03	1
HS23091305-12	19-1603	19 Sep 2023 15:15			23 Sep 2023 00:41	1
HS23091305-13	19-580	20 Sep 2023 07:45			23 Sep 2023 01:19	1
HS23091305-14	BS-17	20 Sep 2023 08:25			23 Sep 2023 01:57	1
HS23091305-15	BS-25	20 Sep 2023 08:40			23 Sep 2023 02:36	1
HS23091305-16	19-582	20 Sep 2023 14:10			23 Sep 2023 03:14	1
HS23091305-17	191055	20 Sep 2023 14:30			23 Sep 2023 06:25	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30			23 Sep 2023 07:03	1
Batch ID: R447177 (0)	**Test Name :** MASSACHUSETTS VPH, FEB 2018, REV 2.1				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00			22 Sep 2023 16:23	1
HS23091305-02	BS-26	18 Sep 2023 14:00			22 Sep 2023 17:02	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			22 Sep 2023 17:40	1
HS23091305-04	BS-8	19 Sep 2023 07:45			22 Sep 2023 18:18	1
HS23091305-05	BS-7	19 Sep 2023 09:15			22 Sep 2023 18:56	1
HS23091305-06	BS-6	19 Sep 2023 09:30			22 Sep 2023 19:35	1
HS23091305-07	BS-23	19 Sep 2023 09:45			22 Sep 2023 21:30	1
HS23091305-08	BS-22	19 Sep 2023 11:20			22 Sep 2023 22:08	1
HS23091305-09	BS-21	19 Sep 2023 11:45			22 Sep 2023 22:46	1
HS23091305-10	BS-5	19 Sep 2023 13:30			22 Sep 2023 23:24	1
HS23091305-11	BS-18	19 Sep 2023 13:50			23 Sep 2023 00:03	1
HS23091305-12	19-1603	19 Sep 2023 15:15			23 Sep 2023 00:41	1
HS23091305-13	19-580	20 Sep 2023 07:45			23 Sep 2023 01:19	1
HS23091305-14	BS-17	20 Sep 2023 08:25			23 Sep 2023 01:57	1
HS23091305-15	BS-25	20 Sep 2023 08:40			23 Sep 2023 02:36	1
HS23091305-16	19-582	20 Sep 2023 14:10			23 Sep 2023 03:14	1
HS23091305-17	191055	20 Sep 2023 14:30			23 Sep 2023 06:25	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30			23 Sep 2023 07:03	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R447178 (0)	**Test Name :** HYDROGEN SULFIDE BY E376.1				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00			25 Sep 2023 09:59	1
HS23091305-02	BS-26	18 Sep 2023 14:00			25 Sep 2023 09:59	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			25 Sep 2023 09:59	1
HS23091305-04	BS-8	19 Sep 2023 07:45			25 Sep 2023 09:59	1
HS23091305-05	BS-7	19 Sep 2023 09:15			25 Sep 2023 09:59	1
HS23091305-06	BS-6	19 Sep 2023 09:30			25 Sep 2023 09:59	1
HS23091305-07	BS-23	19 Sep 2023 09:45			25 Sep 2023 09:59	1
HS23091305-08	BS-22	19 Sep 2023 11:20			25 Sep 2023 09:59	1
HS23091305-09	BS-21	19 Sep 2023 11:45			25 Sep 2023 09:59	1
HS23091305-10	BS-5	19 Sep 2023 13:30			25 Sep 2023 09:59	1
HS23091305-11	BS-18	19 Sep 2023 13:50			25 Sep 2023 09:59	1
HS23091305-12	19-1603	19 Sep 2023 15:15			25 Sep 2023 09:59	1
Batch ID: R447222 (0)	**Test Name :** LOW LEVEL VOLATILES BY SW8260C				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00			25 Sep 2023 11:10	1
HS23091305-02	BS-26	18 Sep 2023 14:00			25 Sep 2023 12:18	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			25 Sep 2023 12:41	1
HS23091305-04	BS-8	19 Sep 2023 07:45			25 Sep 2023 13:04	1
HS23091305-05	BS-7	19 Sep 2023 09:15			25 Sep 2023 13:27	1
HS23091305-06	BS-6	19 Sep 2023 09:30			25 Sep 2023 13:49	1
HS23091305-07	BS-23	19 Sep 2023 09:45			25 Sep 2023 14:12	1
HS23091305-08	BS-22	19 Sep 2023 11:20			25 Sep 2023 14:35	1
HS23091305-09	BS-21	19 Sep 2023 11:45			25 Sep 2023 14:58	1
HS23091305-10	BS-5	19 Sep 2023 13:30			25 Sep 2023 15:20	1
HS23091305-11	BS-18	19 Sep 2023 13:50			25 Sep 2023 15:43	1
HS23091305-12	19-1603	19 Sep 2023 15:15			25 Sep 2023 16:06	1
HS23091305-13	19-580	20 Sep 2023 07:45			25 Sep 2023 16:29	1
HS23091305-14	BS-17	20 Sep 2023 08:25			25 Sep 2023 16:52	1
HS23091305-15	BS-25	20 Sep 2023 08:40			25 Sep 2023 17:14	1
HS23091305-16	19-582	20 Sep 2023 14:10			25 Sep 2023 17:37	1
HS23091305-17	191055	20 Sep 2023 14:30			25 Sep 2023 18:00	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30			25 Sep 2023 18:23	1
HS23091305-19	BS-12	19 Sep 2023 08:00			25 Sep 2023 18:45	1
Batch ID: R447305 (0)	**Test Name :** MASSACHUSETTS VPH, FEB 2018, REV 2.1				**Matrix:** Water	
HS23091305-19	BS-12	19 Sep 2023 08:00			26 Sep 2023 03:59	1
Batch ID: R447306 (0)	**Test Name :** MASSACHUSETTS VPH, FEB 2018, REV 2.1				**Matrix:** Water	
HS23091305-19	BS-12	19 Sep 2023 08:00			26 Sep 2023 03:59	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R447363 (0)	**Test Name :** SULFIDE BY SM4500 S2-F-2011				**Matrix:** Water	
HS23091305-13	19-580	20 Sep 2023 07:45			26 Sep 2023 15:09	1
HS23091305-14	BS-17	20 Sep 2023 08:25			26 Sep 2023 15:09	1
HS23091305-15	BS-25	20 Sep 2023 08:40			26 Sep 2023 15:09	1
HS23091305-16	19-582	20 Sep 2023 14:10			26 Sep 2023 15:09	1
HS23091305-17	191055	20 Sep 2023 14:30			26 Sep 2023 15:09	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30			26 Sep 2023 15:09	1
HS23091305-19	BS-12	19 Sep 2023 08:00			26 Sep 2023 15:09	1
Batch ID: R447366 (0)	**Test Name :** HYDROGEN SULFIDE BY E376.1				**Matrix:** Water	
HS23091305-13	19-580	20 Sep 2023 07:45			26 Sep 2023 15:27	1
HS23091305-14	BS-17	20 Sep 2023 08:25			26 Sep 2023 15:27	1
HS23091305-15	BS-25	20 Sep 2023 08:40			26 Sep 2023 15:27	1
HS23091305-16	19-582	20 Sep 2023 14:10			26 Sep 2023 15:27	1
HS23091305-17	191055	20 Sep 2023 14:30			26 Sep 2023 15:27	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30			26 Sep 2023 15:27	1
HS23091305-19	BS-12	19 Sep 2023 08:00			26 Sep 2023 15:27	1
Batch ID: R447371 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00			25 Sep 2023 15:33	1
HS23091305-02	BS-26	18 Sep 2023 14:00			25 Sep 2023 15:33	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			25 Sep 2023 15:33	1
Batch ID: R447443 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23091305-04	BS-8	19 Sep 2023 07:45			26 Sep 2023 14:00	1
HS23091305-05	BS-7	19 Sep 2023 09:15			26 Sep 2023 14:00	1
HS23091305-06	BS-6	19 Sep 2023 09:30			26 Sep 2023 14:00	1
HS23091305-07	BS-23	19 Sep 2023 09:45			26 Sep 2023 14:00	1
HS23091305-08	BS-22	19 Sep 2023 11:20			26 Sep 2023 14:00	1
HS23091305-09	BS-21	19 Sep 2023 11:45			26 Sep 2023 14:00	1
HS23091305-10	BS-5	19 Sep 2023 13:30			26 Sep 2023 14:00	1
HS23091305-11	BS-18	19 Sep 2023 13:50			26 Sep 2023 14:00	1
HS23091305-12	19-1603	19 Sep 2023 15:15			26 Sep 2023 14:00	1
HS23091305-19	BS-12	19 Sep 2023 08:00			26 Sep 2023 14:00	1
Batch ID: R447589 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23091305-13	19-580	20 Sep 2023 07:45			27 Sep 2023 14:29	1
HS23091305-14	BS-17	20 Sep 2023 08:25			27 Sep 2023 14:29	1
HS23091305-15	BS-25	20 Sep 2023 08:40			27 Sep 2023 14:29	1
HS23091305-16	19-582	20 Sep 2023 14:10			27 Sep 2023 14:29	1
HS23091305-17	191055	20 Sep 2023 14:30			27 Sep 2023 14:29	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30			27 Sep 2023 14:29	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R448196 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS23091305-01	BS-3	18 Sep 2023 12:00			04 Oct 2023 23:56	40
HS23091305-01	BS-3	18 Sep 2023 12:00			04 Oct 2023 23:50	2
HS23091305-02	BS-26	18 Sep 2023 14:00			05 Oct 2023 00:02	1
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			05 Oct 2023 00:30	1000
HS23091305-03	BW-7B-BS	18 Sep 2023 15:45			05 Oct 2023 00:25	50
HS23091305-04	BS-8	19 Sep 2023 07:45			05 Oct 2023 01:05	20
HS23091305-04	BS-8	19 Sep 2023 07:45			05 Oct 2023 00:59	1
HS23091305-05	BS-7	19 Sep 2023 09:15			05 Oct 2023 01:16	20
HS23091305-05	BS-7	19 Sep 2023 09:15			05 Oct 2023 01:11	1
HS23091305-06	BS-6	19 Sep 2023 09:30			05 Oct 2023 01:28	20
HS23091305-06	BS-6	19 Sep 2023 09:30			05 Oct 2023 01:22	1
HS23091305-07	BS-23	19 Sep 2023 09:45			05 Oct 2023 01:40	20
HS23091305-07	BS-23	19 Sep 2023 09:45			05 Oct 2023 01:34	1
HS23091305-08	BS-22	19 Sep 2023 11:20			05 Oct 2023 01:51	20
HS23091305-08	BS-22	19 Sep 2023 11:20			05 Oct 2023 01:45	1
HS23091305-09	BS-21	19 Sep 2023 11:45			05 Oct 2023 02:32	40
HS23091305-09	BS-21	19 Sep 2023 11:45			05 Oct 2023 02:26	2
HS23091305-10	BS-5	19 Sep 2023 13:30			05 Oct 2023 02:43	20
HS23091305-10	BS-5	19 Sep 2023 13:30			05 Oct 2023 02:37	1
HS23091305-11	BS-18	19 Sep 2023 13:50			05 Oct 2023 02:55	20
HS23091305-11	BS-18	19 Sep 2023 13:50			05 Oct 2023 02:49	1
HS23091305-12	19-1603	19 Sep 2023 15:15			05 Oct 2023 03:01	1
HS23091305-13	19-580	20 Sep 2023 07:45			05 Oct 2023 03:12	1
HS23091305-14	BS-17	20 Sep 2023 08:25			05 Oct 2023 03:59	20
HS23091305-14	BS-17	20 Sep 2023 08:25			05 Oct 2023 03:53	1
HS23091305-15	BS-25	20 Sep 2023 08:40			05 Oct 2023 04:10	20
HS23091305-15	BS-25	20 Sep 2023 08:40			05 Oct 2023 04:05	1
HS23091305-16	19-582	20 Sep 2023 14:10			05 Oct 2023 04:16	1
HS23091305-17	191055	20 Sep 2023 14:30			05 Oct 2023 04:28	1
HS23091305-18	COTTAGE WELL	20 Sep 2023 15:30			05 Oct 2023 04:39	1
HS23091305-19	BS-12	19 Sep 2023 08:00			05 Oct 2023 05:25	20
HS23091305-19	BS-12	19 Sep 2023 08:00			05 Oct 2023 05:20	1

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201163 (0) **Instrument: FID-22** **Method: MASSACHUSETTS EPH R2.1, DEC 2019**

MBLK Sample ID: **MBLK-201163** Units: **mg/L** Analysis Date: **04-Oct-2023 02:12**
Client ID: Run ID: **FID-22_448248** SeqNo: **7587623** PrepDate: **29-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	U	0.00100								
Aliphatics >C12 - C16	U	0.00200								
Aliphatics >C16 - C35	U	0.00800								
Surr: 1-Chlorooctadecane	*0.02709*	*0*	*0.04*	*0*	*67.7*	*40 - 140*				

MBLK Sample ID: **MBLK-201163** Units: **mg/L** Analysis Date: **04-Oct-2023 02:12**
Client ID: Run ID: **FID23_448258** SeqNo: **7587868** PrepDate: **29-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	U	0.00100								
Aromatics >C12 - C16	U	0.00400								
Aromatics >C16 - C21	U	0.00300								
Aromatics >C21 - C35	U	0.00900								
Surr: 2-Bromonaphthalene	*0.03975*	*0*	*0.04*	*0*	*99.4*	*40 - 140*				
Surr: 2-Fluorobiphenyl	*0.0359*	*0*	*0.04*	*0*	*89.7*	*40 - 140*				
Surr: o-Terphenyl	*0.02827*	*0*	*0.04*	*0*	*70.7*	*40 - 140*				

LCS Sample ID: **LCS-201163** Units: **mg/L** Analysis Date: **04-Oct-2023 02:41**
Client ID: Run ID: **FID-22_448248** SeqNo: **7587624** PrepDate: **29-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	0.04288	0.00100	0.05	0	85.8	40 - 140				
Aliphatics >C12 - C16	0.09621	0.00200	0.1	0	96.2	40 - 140				
Aliphatics >C16 - C35	0.4275	0.00800	0.4	0	107	40 - 140				
Surr: 1-Chlorooctadecane	*0.02978*	*0*	*0.04*	*0*	*74.4*	*40 - 140*				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201163 (0) **Instrument: FID-22** **Method: MASSACHUSETTS EPH R2.1, DEC 2019**

LCS Sample ID: **LCS-201163** Units: **mg/L** Analysis Date: **04-Oct-2023 02:41**
Client ID: Run ID: **FID23_448258** SeqNo: **7587869** PrepDate: **29-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	0.0456	0.00100	0.05	0	91.2	40 - 140				
Aromatics >C12 - C16	0.1794	0.00400	0.2	0	89.7	40 - 140				
Aromatics >C16 - C21	0.1539	0.00300	0.15	0	103	40 - 140				
Aromatics >C21 - C35	0.4783	0.00900	0.45	0	106	40 - 140				
Surr: 2-Bromonaphthalene	*0.04053*	*0*	*0.04*	*0*	*101*	*40 - 140*				
Surr: 2-Fluorobiphenyl	*0.0423*	*0*	*0.04*	*0*	*106*	*40 - 140*				
Surr: o-Terphenyl	*0.03096*	*0*	*0.04*	*0*	*77.4*	*40 - 140*				

LCSD Sample ID: **LCSD-201163** Units: **mg/L** Analysis Date: **04-Oct-2023 03:10**
Client ID: Run ID: **FID-22_448248** SeqNo: **7587625** PrepDate: **29-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C10 - C12	0.04175	0.00100	0.05	0	83.5	40 - 140	0.04288	2.67	50	
Aliphatics >C12 - C16	0.09477	0.00200	0.1	0	94.8	40 - 140	0.09621	1.51	50	
Aliphatics >C16 - C35	0.4233	0.00800	0.4	0	106	40 - 140	0.4275	1.01	50	
Surr: 1-Chlorooctadecane	*0.02948*	*0*	*0.04*	*0*	*73.7*	*40 - 140*	*0.02978*	*1.03*	*50*	

LCSD Sample ID: **LCSD-201163** Units: **mg/L** Analysis Date: **04-Oct-2023 03:10**
Client ID: Run ID: **FID23_448258** SeqNo: **7587870** PrepDate: **29-Sep-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C10 - C12	0.04154	0.00100	0.05	0	83.1	40 - 140	0.0456	9.31	50	
Aromatics >C12 - C16	0.1632	0.00400	0.2	0	81.6	40 - 140	0.1794	9.47	50	
Aromatics >C16 - C21	0.1403	0.00300	0.15	0	93.5	40 - 140	0.1539	9.27	50	
Aromatics >C21 - C35	0.4368	0.00900	0.45	0	97.1	40 - 140	0.4783	9.08	50	
Surr: 2-Bromonaphthalene	*0.03698*	*0*	*0.04*	*0*	*92.4*	*40 - 140*	*0.04053*	*9.17*	*50*	
Surr: 2-Fluorobiphenyl	*0.03859*	*0*	*0.04*	*0*	*96.5*	*40 - 140*	*0.0423*	*9.16*	*50*	
Surr: o-Terphenyl	*0.02815*	*0*	*0.04*	*0*	*70.4*	*40 - 140*	*0.03096*	*9.49*	*50*	

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09	HS23091305-10	HS23091305-11	HS23091305-12
HS23091305-13	HS23091305-14	HS23091305-15	HS23091305-16
HS23091305-17	HS23091305-18	HS23091305-19	

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447176 (0) **Instrument:** FID-14 **Method:** MASSACHUSETTS VPH, FEB 2018, REV 2.1

MBLK Sample ID: **MBLK-230922** Units: **mg/L** Analysis Date: **22-Sep-2023 15:07**
Client ID: Run ID: **FID-14_447176** SeqNo: **7562474** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	U	0.0100								
Aliphatics >C8 - C10	U	0.0100								
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.1902*	*0.0100*	*0.25*	*0*	*76.1*	*70 - 130*				

LCS Sample ID: **LCS-230922** Units: **mg/L** Analysis Date: **22-Sep-2023 13:50**
Client ID: Run ID: **FID-14_447176** SeqNo: **7562541** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	0.02819	0.0100	0.025	0	113	70 - 130				
Aliphatics >C8 - C10	0.02251	0.0100	0.025	0	90.0	70 - 130				
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.2141*	*0.0100*	*0.25*	*0*	*85.6*	*70 - 130*				

LCSD Sample ID: **LCSD-230922** Units: **mg/L** Analysis Date: **22-Sep-2023 14:28**
Client ID: Run ID: **FID-14_447176** SeqNo: **7562473** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	0.02711	0.0100	0.025	0	108	70 - 130	0.02819	3.92	25	
Aliphatics >C8 - C10	0.02269	0.0100	0.025	0	90.8	70 - 130	0.02251	0.814	25	
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.2109*	*0.0100*	*0.25*	*0*	*84.4*	*70 - 130*	*0.2141*	*1.5*	*25*	

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09	HS23091305-10	HS23091305-11	HS23091305-12
HS23091305-13	HS23091305-14	HS23091305-15	HS23091305-16
HS23091305-17	HS23091305-18		

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447177 (0) **Instrument: FID-15** **Method: MASSACHUSETTS VPH, FEB 2018, REV 2.1**

MBLK Sample ID: **MBLK-230922** Units: **mg/L** Analysis Date: **22-Sep-2023 15:07**
Client ID: Run ID: **FID-15_447177** SeqNo: **7562507** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	U	0.0100								
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2097*	*0.0100*	*0.25*	*0*	*83.9*	*70 - 130*				

LCS Sample ID: **LCS-230922** Units: **mg/L** Analysis Date: **22-Sep-2023 13:50**
Client ID: Run ID: **FID-15_447177** SeqNo: **7562505** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	0.08177	0.0100	0.1	0	81.8	70 - 130				
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2365*	*0.0100*	*0.25*	*0*	*94.6*	*70 - 130*				

LCSD Sample ID: **LCSD-230922** Units: **mg/L** Analysis Date: **22-Sep-2023 14:28**
Client ID: Run ID: **FID-15_447177** SeqNo: **7562506** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	0.07985	0.0100	0.1	0	79.9	70 - 130	0.08177	2.37	25	
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2331*	*0.0100*	*0.25*	*0*	*93.2*	*70 - 130*	*0.2365*	*1.47*	*25*	

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09	HS23091305-10	HS23091305-11	HS23091305-12
HS23091305-13	HS23091305-14	HS23091305-15	HS23091305-16
HS23091305-17	HS23091305-18		

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447305 (0) **Instrument:** FID-14 **Method:** MASSACHUSETTS VPH, FEB 2018, REV 2.1

MBLK Sample ID: **MBLK-230925** Units: **mg/L** Analysis Date: **25-Sep-2023 18:25**
Client ID: Run ID: **FID-14_447305** SeqNo: **7564652** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	U	0.0100								
Aliphatics >C8 - C10	U	0.0100								
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.1898*	*0.0100*	*0.25*	*0*	*75.9*	*70 - 130*				

LCS Sample ID: **LCS-230925** Units: **mg/L** Analysis Date: **25-Sep-2023 17:09**
Client ID: Run ID: **FID-14_447305** SeqNo: **7564650** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	0.02875	0.0100	0.025	0	115	70 - 130				
Aliphatics >C8 - C10	0.0227	0.0100	0.025	0	90.8	70 - 130				
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.2155*	*0.0100*	*0.25*	*0*	*86.2*	*70 - 130*				

LCSD Sample ID: **LCSD-230925** Units: **mg/L** Analysis Date: **25-Sep-2023 17:47**
Client ID: Run ID: **FID-14_447305** SeqNo: **7564651** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aliphatics >C6 - C8	0.02735	0.0100	0.025	0	109	70 - 130	0.02875	4.97	25	
Aliphatics >C8 - C10	0.02248	0.0100	0.025	0	89.9	70 - 130	0.0227	0.952	25	
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.2116*	*0.0100*	*0.25*	*0*	*84.6*	*70 - 130*	*0.2155*	*1.84*	*25*	

The following samples were analyzed in this batch: HS23091305-19

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447306 (0) **Instrument:** FID-15 **Method:** MASSACHUSETTS VPH, FEB 2018, REV 2.1

MBLK Sample ID: **MBLK-230925** Units: **mg/L** Analysis Date: **25-Sep-2023 18:25**
Client ID: Run ID: **FID-15_447306** SeqNo: **7564686** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	U	0.0100								
Surr: 2,5-Dibromotoluene (Aliphatic)	*0.2092*	*0.0100*	*0.25*	*0*	*83.7*	*70 - 130*				
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2092*	*0.0100*	*0.25*	*0*	*83.7*	*70 - 130*				

LCS Sample ID: **LCS-230925** Units: **mg/L** Analysis Date: **25-Sep-2023 17:09**
Client ID: Run ID: **FID-15_447306** SeqNo: **7564661** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	0.07565	0.0100	0.1	0	75.7	70 - 130				
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2301*	*0.0100*	*0.25*	*0*	*92.0*	*70 - 130*				

LCSD Sample ID: **LCSD-230925** Units: **mg/L** Analysis Date: **25-Sep-2023 17:47**
Client ID: Run ID: **FID-15_447306** SeqNo: **7564662** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aromatics >C8 - C10	0.07373	0.0100	0.1	0	73.7	70 - 130	0.07565	2.57	25	
Surr: 2,5-Dibromotoluene (Aromatic)	*0.2259*	*0.0100*	*0.25*	*0*	*90.4*	*70 - 130*	*0.2301*	*1.85*	*25*	

The following samples were analyzed in this batch: HS23091305-19

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201350 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLK-201350** Units: **mg/L** Analysis Date: **04-Oct-2023 12:27**
Client ID: Run ID: **ICPMS07_448112** SeqNo: **7584407** PrepDate: **03-Oct-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.00200								
Barium	U	0.00400								
Cadmium	U	0.00200								
Calcium	0.05246	0.500								J
Chromium	U	0.00400								
Iron	U	0.200								
Lead	U	0.00200								
Magnesium	0.01566	0.200								J
Manganese	U	0.00500								
Nickel	U	0.00200								
Potassium	U	0.200								
Selenium	U	0.00200								
Silver	U	0.00200								
Sodium	0.01818	0.200								J
Strontium	U	0.00500								
Vanadium	U	0.00500								
Zinc	U	0.00400								

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201350 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

LCS Sample ID: **LCS-201350** Units: **mg/L** Analysis Date: **04-Oct-2023 12:29**
Client ID: Run ID: **ICPMS07_448112** SeqNo: **7584408** PrepDate: **03-Oct-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04571	0.00200	0.05	0	91.4	80 - 120				
Barium	0.04716	0.00400	0.05	0	94.3	80 - 120				
Cadmium	0.04775	0.00200	0.05	0	95.5	80 - 120				
Calcium	4.59	0.500	5	0	91.8	80 - 120				
Chromium	0.04402	0.00400	0.05	0	88.0	80 - 120				
Iron	4.463	0.200	5	0	89.3	80 - 120				
Lead	0.04226	0.00200	0.05	0	84.5	80 - 120				
Magnesium	4.612	0.200	5	0	92.2	80 - 120				
Manganese	0.04366	0.00500	0.05	0	87.3	80 - 120				
Nickel	0.04456	0.00200	0.05	0	89.1	80 - 120				
Potassium	4.693	0.200	5	0	93.9	80 - 120				
Selenium	0.04462	0.00200	0.05	0	89.2	80 - 120				
Silver	0.04322	0.00200	0.05	0	86.4	80 - 120				
Sodium	4.586	0.200	5	0	91.7	80 - 120				
Strontium	0.09464	0.00500	0.1	0	94.6	80 - 120				
Vanadium	0.04357	0.00500	0.05	0	87.1	80 - 120				
Zinc	0.04868	0.00400	0.05	0	97.4	80 - 120				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201350 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

MS Sample ID: **HS23091305-05MS** Units: **mg/L** Analysis Date: **04-Oct-2023 18:49**
Client ID: **BS-7** Run ID: **ICPMS07_448112** SeqNo: **7585646** PrepDate: **03-Oct-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Arsenic	0.05261	0.00200	0.05	0.002061	101	80 - 120			
Barium	0.4907	0.00400	0.05	0.4505	80.4	80 - 120			O
Cadmium	0.04885	0.00200	0.05	0.000005	97.7	80 - 120			
Calcium	76.77	0.500	5	74.47	46.1	80 - 120			SO
Chromium	0.047	0.00400	0.05	0.000201	93.6	80 - 120			
Iron	4.811	0.200	5	0.02478	95.7	80 - 120			
Lead	0.04571	0.00200	0.05	0.000057	91.3	80 - 120			
Magnesium	32.66	0.200	5	29.74	58.4	80 - 120			SO
Manganese	0.4676	0.00500	0.05	0.4351	64.9	80 - 120			SO
Nickel	0.04746	0.00200	0.05	0.000966	93.0	80 - 120			
Potassium	9.216	0.200	5	4.308	98.2	80 - 120			
Selenium	0.04945	0.00200	0.05	0.000413	98.1	80 - 120			
Silver	0.04605	0.00200	0.05	0.000122	91.9	80 - 120			
Sodium	550.9	0.200	5	574.5	-473	80 - 120			SEO
Strontium	0.9455	0.00500	0.1	0.8948	50.7	80 - 120			SO
Vanadium	0.05417	0.00500	0.05	0.00588	96.6	80 - 120			
Zinc	0.05061	0.00400	0.05	0.002188	96.8	80 - 120			

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201350 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

MSD Sample ID: **HS23091305-05MSD** Units: **mg/L** Analysis Date: **04-Oct-2023 18:52**
Client ID: **BS-7** Run ID: **ICPMS07_448112** SeqNo: **7585647** PrepDate: **03-Oct-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05621	0.00200	0.05	0.002061	108	80 - 120	0.05261	6.61	20	
Barium	0.5124	0.00400	0.05	0.4505	124	80 - 120	0.4907	4.32	20	SO
Cadmium	0.05067	0.00200	0.05	0.000005	101	80 - 120	0.04885	3.67	20	
Calcium	79.77	0.500	5	74.47	106	80 - 120	76.77	3.84	20	O
Chromium	0.05025	0.00400	0.05	0.000201	100	80 - 120	0.047	6.68	20	
Iron	5.141	0.200	5	0.02478	102	80 - 120	4.811	6.65	20	
Lead	0.04821	0.00200	0.05	0.000057	96.3	80 - 120	0.04571	5.32	20	
Magnesium	34.63	0.200	5	29.74	97.9	80 - 120	32.66	5.87	20	O
Manganese	0.4938	0.00500	0.05	0.4351	117	80 - 120	0.4676	5.46	20	O
Nickel	0.04994	0.00200	0.05	0.000966	97.9	80 - 120	0.04746	5.09	20	
Potassium	9.604	0.200	5	4.308	106	80 - 120	9.216	4.12	20	
Selenium	0.05372	0.00200	0.05	0.000413	107	80 - 120	0.04945	8.27	20	
Silver	0.04841	0.00200	0.05	0.000122	96.6	80 - 120	0.04605	4.99	20	
Sodium	579	0.200	5	574.5	90.0	80 - 120	550.9	4.99	20	EO
Strontium	0.9728	0.00500	0.1	0.8948	78.0	80 - 120	0.9455	2.85	20	SO
Vanadium	0.0574	0.00500	0.05	0.00588	103	80 - 120	0.05417	5.8	20	
Zinc	0.05373	0.00400	0.05	0.002188	103	80 - 120	0.05061	5.99	20	

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201350 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

PDS Sample ID: **HS23091305-05PDS** Units: **mg/L** Analysis Date: **04-Oct-2023 18:54**
Client ID: **BS-7** Run ID: **ICPMS07_448112** SeqNo: **7585648** PrepDate: **03-Oct-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.1136	0.00200	0.1	0.002061	112	75 - 125				
Barium	0.5486	0.00400	0.1	0.4505	98.0	75 - 125				O
Cadmium	0.1013	0.00200	0.1	0.000005	101	75 - 125				
Calcium	87.08	0.500	10	74.47	126	75 - 125				SO
Chromium	0.1036	0.00400	0.1	0.000201	103	75 - 125				
Iron	10.58	0.200	10	0.02478	106	75 - 125				
Lead	0.1029	0.00200	0.1	0.000057	103	75 - 125				
Magnesium	40.38	0.200	10	29.74	106	75 - 125				
Manganese	0.5435	0.00500	0.1	0.4351	108	75 - 125				O
Nickel	0.1028	0.00200	0.1	0.000966	102	75 - 125				
Potassium	15.51	0.200	10	4.308	112	75 - 125				
Selenium	0.1107	0.00200	0.1	0.000413	110	75 - 125				
Silver	0.09428	0.00200	0.1	0.000122	94.2	75 - 125				
Strontium	1.042	0.00500	0.1	0.8948	147	75 - 125				SO
Vanadium	0.1137	0.00500	0.1	0.00588	108	75 - 125				
Zinc	0.1115	0.00400	0.1	0.002188	109	75 - 125				

PDS Sample ID: **HS23091305-05PDS** Units: **mg/L** Analysis Date: **05-Oct-2023 13:15**
Client ID: **BS-7** Run ID: **ICPMS07_448233** SeqNo: **7587949** PrepDate: **03-Oct-2023** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	1565	20.0	1000	591.2	97.4	75 - 125				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201350 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

SD Sample ID: **HS23091305-05SD** Units: **mg/L** Analysis Date: **04-Oct-2023 18:47**
Client ID: **BS-7** Run ID: **ICPMS07_448112** SeqNo: **7585645** PrepDate: **03-Oct-2023** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Arsenic	U	0.0100					0.002061	0	10	
Barium	0.4303	0.0200					0.4505	4.48	10	
Cadmium	U	0.0100					0.000005	0	10	
Calcium	69.05	2.50					74.47	7.28	10	
Chromium	U	0.0200					0.000201	0	10	
Iron	U	1.00					0.02478	0	10	
Lead	U	0.0100					0.000057	0	10	
Magnesium	28.69	1.00					29.74	3.54	10	
Manganese	0.4035	0.0250					0.4351	7.27	10	
Nickel	U	0.0100					0.000966	0	10	
Potassium	4	1.00					4.308	7.15	10	
Selenium	U	0.0100					0.000413	0	10	
Silver	U	0.0100					0.000122	0	10	
Strontium	0.8918	0.0250					0.8948	0.334	10	
Vanadium	0.005515	0.0250					0.00588	0	10	J
Zinc	U	0.0200					0.002188	0	10	

SD Sample ID: **HS23091305-05SD** Units: **mg/L** Analysis Date: **05-Oct-2023 13:13**
Client ID: **BS-7** Run ID: **ICPMS07_448233** SeqNo: **7587948** PrepDate: **03-Oct-2023** DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Sodium	665.5	100					591.2	12.6	10	R

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09	HS23091305-10	HS23091305-11	HS23091305-12
HS23091305-13	HS23091305-14	HS23091305-15	HS23091305-16
HS23091305-17	HS23091305-18	HS23091305-19	

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201402 (0) **Instrument: HG04** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-201402** Units: **mg/L** Analysis Date: **04-Oct-2023 12:31**
Client ID: Run ID: **HG04_448164** SeqNo: **7585087** PrepDate: **04-Oct-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U		0.000200								

LCS Sample ID: **LCS-201402** Units: **mg/L** Analysis Date: **04-Oct-2023 12:35**
Client ID: Run ID: **HG04_448164** SeqNo: **7585088** PrepDate: **04-Oct-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00493		0.000200	0.005	0	98.6	80 - 120				

MS Sample ID: **HS23091305-05MS** Units: **mg/L** Analysis Date: **04-Oct-2023 12:50**
Client ID: **BS-7** Run ID: **HG04_448164** SeqNo: **7585096** PrepDate: **04-Oct-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00473		0.000200	0.005	-0.000007	94.7	75 - 125				

MSD Sample ID: **HS23091305-05MSD** Units: **mg/L** Analysis Date: **04-Oct-2023 12:52**
Client ID: **BS-7** Run ID: **HG04_448164** SeqNo: **7585097** PrepDate: **04-Oct-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00462		0.000200	0.005	-0.000007	92.5	75 - 125	0.00473	2.35	20	

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09			

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: 201403 (0) **Instrument: HG04** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-201403** Units: **mg/L** Analysis Date: **04-Oct-2023 13:27**
Client ID: Run ID: **HG04_448164** SeqNo: **7585044** PrepDate: **04-Oct-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U		0.000200								

LCS Sample ID: **LCS-201403** Units: **mg/L** Analysis Date: **04-Oct-2023 13:30**
Client ID: Run ID: **HG04_448164** SeqNo: **7585045** PrepDate: **04-Oct-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00487		0.000200	0.005	0	97.4	80 - 120				

MS Sample ID: **HS23091305-12MS** Units: **mg/L** Analysis Date: **04-Oct-2023 13:46**
Client ID: **19-1603** Run ID: **HG04_448164** SeqNo: **7585051** PrepDate: **04-Oct-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00486		0.000200	0.005	-0.000003	97.3	75 - 125				

MSD Sample ID: **HS23091305-12MSD** Units: **mg/L** Analysis Date: **04-Oct-2023 13:48**
Client ID: **19-1603** Run ID: **HG04_448164** SeqNo: **7585052** PrepDate: **04-Oct-2023** DF: **1**

Analyte	Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00502		0.000200	0.005	-0.000003	100	75 - 125	0.00486	3.24	20	

The following samples were analyzed in this batch:

HS23091305-10	HS23091305-11	HS23091305-12	HS23091305-13
HS23091305-14	HS23091305-15	HS23091305-16	HS23091305-17
HS23091305-18	HS23091305-19		

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447222 (0) **Instrument: VOA4** **Method: LOW LEVEL VOLATILES BY SW8260C**

MBLK Sample ID: **VBLKW-230925** Units: **ug/L** Analysis Date: **25-Sep-2023 10:47**
Client ID: Run ID: **VOA4_447222** SeqNo: **7563295** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	1.0								
Ethylbenzene	U	1.0								
m,p-Xylene	U	2.0								
o-Xylene	U	1.0								
Toluene	U	1.0								
Xylenes, Total	U	3.0								
Surr: 1,2-Dichloroethane-d4	*51.8*	*1.0*	*50*	*0*	*104*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*48.62*	*1.0*	*50*	*0*	*97.2*	*77 - 113*				
Surr: Dibromofluoromethane	*53.37*	*1.0*	*50*	*0*	*107*	*73 - 126*				
Surr: Toluene-d8	*47.83*	*1.0*	*50*	*0*	*95.7*	*81 - 120*				

LCS Sample ID: **VLCSW-230925** Units: **ug/L** Analysis Date: **25-Sep-2023 10:02**
Client ID: Run ID: **VOA4_447222** SeqNo: **7563294** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.74	1.0	20	0	88.7	74 - 120				
Ethylbenzene	16.67	1.0	20	0	83.4	77 - 117				
m,p-Xylene	34.86	2.0	40	0	87.2	77 - 122				
o-Xylene	17.82	1.0	20	0	89.1	75 - 119				
Toluene	16.42	1.0	20	0	82.1	77 - 118				
Xylenes, Total	52.68	3.0	60	0	87.8	75 - 122				
Surr: 1,2-Dichloroethane-d4	*48.86*	*1.0*	*50*	*0*	*97.7*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*51.5*	*1.0*	*50*	*0*	*103*	*77 - 113*				
Surr: Dibromofluoromethane	*51.69*	*1.0*	*50*	*0*	*103*	*73 - 126*				
Surr: Toluene-d8	*48.84*	*1.0*	*50*	*0*	*97.7*	*81 - 120*				

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447222 (0) **Instrument: VOA4** **Method: LOW LEVEL VOLATILES BY SW8260C**

MS Sample ID: **HS23091305-01MS** Units: **ug/L** Analysis Date: **25-Sep-2023 11:33**
Client ID: **BS-3** Run ID: **VOA4_447222** SeqNo: **7563297** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Benzene	19.03	1.0	20	0.4639	92.8	70 - 127				
Ethylbenzene	18.22	1.0	20	0	91.1	70 - 124				
m,p-Xylene	39.11	2.0	40	0	97.8	70 - 130				
o-Xylene	18.92	1.0	20	0	94.6	70 - 124				
Toluene	18.67	1.0	20	1.089	87.9	70 - 123				
Xylenes, Total	58.03	3.0	60	0	96.7	70 - 130				
Surr: 1,2-Dichloroethane-d4	*45.73*	*1.0*	*50*	*0*	*91.5*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*50.47*	*1.0*	*50*	*0*	*101*	*77 - 113*				
Surr: Dibromofluoromethane	*47.91*	*1.0*	*50*	*0*	*95.8*	*77 - 123*				
Surr: Toluene-d8	*49.92*	*1.0*	*50*	*0*	*99.8*	*82 - 127*				

MSD Sample ID: **HS23091305-01MSD** Units: **ug/L** Analysis Date: **25-Sep-2023 11:55**
Client ID: **BS-3** Run ID: **VOA4_447222** SeqNo: **7563298** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Benzene	17.53	1.0	20	0.4639	85.3	70 - 127	19.03	8.23	20	
Ethylbenzene	16.62	1.0	20	0	83.1	70 - 124	18.22	9.22	20	
m,p-Xylene	34.86	2.0	40	0	87.1	70 - 130	39.11	11.5	20	
o-Xylene	17.08	1.0	20	0	85.4	70 - 124	18.92	10.2	20	
Toluene	17.15	1.0	20	1.089	80.3	70 - 123	18.67	8.47	20	
Xylenes, Total	51.94	3.0	60	0	86.6	70 - 130	58.03	11.1	20	
Surr: 1,2-Dichloroethane-d4	*45.83*	*1.0*	*50*	*0*	*91.7*	*70 - 126*	*45.73*	*0.222*	*20*	
Surr: 4-Bromofluorobenzene	*49.49*	*1.0*	*50*	*0*	*99.0*	*77 - 113*	*50.47*	*1.96*	*20*	
Surr: Dibromofluoromethane	*48.04*	*1.0*	*50*	*0*	*96.1*	*77 - 123*	*47.91*	*0.288*	*20*	
Surr: Toluene-d8	*49.27*	*1.0*	*50*	*0*	*98.5*	*82 - 127*	*49.92*	*1.31*	*20*	

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09	HS23091305-10	HS23091305-11	HS23091305-12
HS23091305-13	HS23091305-14	HS23091305-15	HS23091305-16
HS23091305-17	HS23091305-18	HS23091305-19	

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447118 (0) **Instrument: WetChem_HS** **Method: SULFIDE BY SM4500 S2-F-2011**

MBLK Sample ID: **MBLK-R447118** Units: **mg/L** Analysis Date: **22-Sep-2023 15:08**
Client ID: Run ID: **WetChem_HS_447118** SeqNo: **7560272** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	U	2.00								

LCS Sample ID: **LCS-R447118** Units: **mg/L** Analysis Date: **22-Sep-2023 15:08**
Client ID: Run ID: **WetChem_HS_447118** SeqNo: **7560271** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.92	2.00	25	0	87.7	85 - 115				

LCSD Sample ID: **LCSD-R447118** Units: **mg/L** Analysis Date: **22-Sep-2023 15:08**
Client ID: Run ID: **WetChem_HS_447118** SeqNo: **7560270** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	22.12	2.00	25	0	88.5	85 - 115	21.92	0.908	20	

MS Sample ID: **HS23091305-07MS** Units: **mg/L** Analysis Date: **22-Sep-2023 15:08**
Client ID: **BS-23** Run ID: **WetChem_HS_447118** SeqNo: **7560269** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.92	2.00	25	-2.08	96.0	80 - 120				

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09	HS23091305-10	HS23091305-11	HS23091305-12

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447158 (0) **Instrument: Skalar 03** **Method: ALKALINITY BY -2011**

MBLK Sample ID: **MBLK-09222023** Units: **mg/L** Analysis Date: **22-Sep-2023 13:38**
Client ID: Run ID: **Skalar 03_447158** SeqNo: **7562055** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.00								
Alkalinity, Carbonate (As CaCO3)	U	5.00								

LCS Sample ID: **LCS-09222023** Units: **mg/L** Analysis Date: **22-Sep-2023 13:45**
Client ID: Run ID: **Skalar 03_447158** SeqNo: **7562056** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	907.6	5.00	1000	0	90.8	85 - 115				

LCSD Sample ID: **LCSD-09222023** Units: **mg/L** Analysis Date: **22-Sep-2023 13:52**
Client ID: Run ID: **Skalar 03_447158** SeqNo: **7562057** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	908.8	5.00	1000	0	90.9	85 - 115	907.6	0.132	20	

DUP Sample ID: **HS23091241-01DUP** Units: **mg/L** Analysis Date: **22-Sep-2023 14:03**
Client ID: Run ID: **Skalar 03_447158** SeqNo: **7562059** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	149.2	5.00					151.7	1.66	20	
Alkalinity, Carbonate (As CaCO3)	10.4	5.00					9.4	10.1	20	

The following samples were analyzed in this batch: HS23091305-01

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447159 (0) **Instrument: Skalar 03** **Method: ALKALINITY BY -2011**

MBLK Sample ID: **MBLK2-09222023** Units: **mg/L** Analysis Date: **22-Sep-2023 16:13**
Client ID: Run ID: **Skalar 03_447159** SeqNo: **7562082** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.00								
Alkalinity, Carbonate (As CaCO3)	U	5.00								

LCS Sample ID: **LCS2-09222023** Units: **mg/L** Analysis Date: **22-Sep-2023 16:20**
Client ID: Run ID: **Skalar 03_447159** SeqNo: **7562083** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	889.8	5.00	1000	0	89.0	85 - 115				

LCSD Sample ID: **LCSD2-09222023** Units: **mg/L** Analysis Date: **22-Sep-2023 16:26**
Client ID: Run ID: **Skalar 03_447159** SeqNo: **7562084** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	893.8	5.00	1000	0	89.4	85 - 115	889.8	0.449	20	

DUP Sample ID: **HS23091305-02DUP** Units: **mg/L** Analysis Date: **22-Sep-2023 16:37**
Client ID: **BS-26** Run ID: **Skalar 03_447159** SeqNo: **7562086** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	42.3	5.00					44.4	4.84	20	
Alkalinity, Carbonate (As CaCO3)	U	5.00					0	0	20	

The following samples were analyzed in this batch:

HS23091305-02	HS23091305-03	HS23091305-04	HS23091305-05
HS23091305-06	HS23091305-07	HS23091305-08	HS23091305-09
HS23091305-10	HS23091305-11	HS23091305-12	HS23091305-13
HS23091305-14	HS23091305-15	HS23091305-16	HS23091305-17
HS23091305-18	HS23091305-19		

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: **R447160 (0)** **Instrument:** **Skalar 03** **Method:** **PH BY SM4500H+ B-2011**

DUP Sample ID: **HS23091305-02DUP** Units: **pH Units** Analysis Date: **22-Sep-2023 16:37**
Client ID: **BS-26** Run ID: **Skalar 03_447160** SeqNo: **7562116** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.09	0.100					7.05	0.566	10	
Temp Deg C @pH	21	0					21.1	0.475	10	

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09	HS23091305-10	HS23091305-11	HS23091305-12
HS23091305-13	HS23091305-14	HS23091305-15	HS23091305-16
HS23091305-17	HS23091305-18	HS23091305-19	

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447178 (0) **Instrument: WetChem_HS** **Method: HYDROGEN SULFIDE BY E376.1**

MBLK Sample ID: **MBLK-R447178** Units: **mg/L** Analysis Date: **25-Sep-2023 09:59**
Client ID: Run ID: **WetChem_HS_447178** SeqNo: **7562641** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	U	1.00								

LCS Sample ID: **LCS-R447178** Units: **mg/L** Analysis Date: **25-Sep-2023 09:59**
Client ID: Run ID: **WetChem_HS_447178** SeqNo: **7562640** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	23.29	1.00	25	0	93.2	80 - 120				

LCSD Sample ID: **LCSD-R447178** Units: **mg/L** Analysis Date: **25-Sep-2023 09:59**
Client ID: Run ID: **WetChem_HS_447178** SeqNo: **7562639** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	23.5	1.00	25	0	94.0	80 - 120	23.29	0.908	20	

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09	HS23091305-10	HS23091305-11	HS23091305-12

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447363 (0) **Instrument: WetChem_HS** **Method: SULFIDE BY SM4500 S2-F-2011**

MBLK Sample ID: **MBLK-R447363** Units: **mg/L** Analysis Date: **26-Sep-2023 15:09**
Client ID: Run ID: **WetChem_HS_447363** SeqNo: **7565613** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	U	2.00								

LCS Sample ID: **LCS-R447363** Units: **mg/L** Analysis Date: **26-Sep-2023 15:09**
Client ID: Run ID: **WetChem_HS_447363** SeqNo: **7565612** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.92	2.00	25	0	87.7	85 - 115				

LCSD Sample ID: **LCSD-R447363** Units: **mg/L** Analysis Date: **26-Sep-2023 15:09**
Client ID: Run ID: **WetChem_HS_447363** SeqNo: **7565611** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.72	2.00	25	0	86.9	85 - 115	21.92	0.917	20	

MS Sample ID: **HS23091305-13MS** Units: **mg/L** Analysis Date: **26-Sep-2023 15:09**
Client ID: **19-580** Run ID: **WetChem_HS_447363** SeqNo: **7565614** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.72	2.00	25	-3.68	102	80 - 120				

The following samples were analyzed in this batch:

HS23091305-13	HS23091305-14	HS23091305-15	HS23091305-16
HS23091305-17	HS23091305-18	HS23091305-19	

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447366 (0) **Instrument: WetChem_HS** **Method: HYDROGEN SULFIDE BY E376.1**

MBLK Sample ID: **MBLK-R447366** Units: **mg/L** Analysis Date: **26-Sep-2023 15:27**
Client ID: Run ID: **WetChem_HS_447366** SeqNo: **7565669** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	U	1.00								

LCS Sample ID: **LCS-R447366** Units: **mg/L** Analysis Date: **26-Sep-2023 15:27**
Client ID: Run ID: **WetChem_HS_447366** SeqNo: **7565668** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	23.29	1.00	25	0	93.2	80 - 120				

LCSD Sample ID: **LCSD-R447366** Units: **mg/L** Analysis Date: **26-Sep-2023 15:27**
Client ID: Run ID: **WetChem_HS_447366** SeqNo: **7565667** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Hydrogen Sulfide	23.08	1.00	25	0	92.3	80 - 120	23.29	0.917	20	

The following samples were analyzed in this batch: HS23091305-13 HS23091305-14 HS23091305-15 HS23091305-16 HS23091305-17 HS23091305-18 HS23091305-19

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447371 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-09252023** Units: **mg/L** Analysis Date: **25-Sep-2023 15:33**
Client ID: Run ID: **Balance1_447371** SeqNo: **7565722** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	U	10.0								

LCS Sample ID: **WLCS-09252023** Units: **mg/L** Analysis Date: **25-Sep-2023 15:33**
Client ID: Run ID: **Balance1_447371** SeqNo: **7565721** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1060	10.0	1000	0	106	85 - 115				

DUP Sample ID: **HS23091305-02DUP** Units: **mg/L** Analysis Date: **25-Sep-2023 15:33**
Client ID: **BS-26** Run ID: **Balance1_447371** SeqNo: **7565719** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	124	10.0					120	3.28	20	

DUP Sample ID: **HS23091223-05DUP** Units: **mg/L** Analysis Date: **25-Sep-2023 15:33**
Client ID: Run ID: **Balance1_447371** SeqNo: **7565714** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	176	10.0					174	1.14	20	

The following samples were analyzed in this batch: HS23091305-01 HS23091305-02 HS23091305-03

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447443 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-09262023** Units: **mg/L** Analysis Date: **26-Sep-2023 14:00**
Client ID: Run ID: **Balance1_447443** SeqNo: **7567082** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	U	10.0								

LCS Sample ID: **WLCS-09262023** Units: **mg/L** Analysis Date: **26-Sep-2023 14:00**
Client ID: Run ID: **Balance1_447443** SeqNo: **7567081** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1000	10.0	1000	0	100.0	85 - 115				

DUP Sample ID: **HS23091305-19DUP** Units: **mg/L** Analysis Date: **26-Sep-2023 14:00**
Client ID: **BS-12** Run ID: **Balance1_447443** SeqNo: **7567071** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	2200	10.0					2210	0.454	20	

DUP Sample ID: **HS23091305-08DUP** Units: **mg/L** Analysis Date: **26-Sep-2023 14:00**
Client ID: **BS-22** Run ID: **Balance1_447443** SeqNo: **7567047** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	2290	10.0					2300	0.436	20	

The following samples were analyzed in this batch:

HS23091305-04	HS23091305-05	HS23091305-06	HS23091305-07
HS23091305-08	HS23091305-09	HS23091305-10	HS23091305-11
HS23091305-12	HS23091305-19		

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R447589 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-09272023** Units: **mg/L** Analysis Date: **27-Sep-2023 14:29**
Client ID: Run ID: **Balance1_447589** SeqNo: **7570952** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	U	10.0								

LCS Sample ID: **WLCS-09272023** Units: **mg/L** Analysis Date: **27-Sep-2023 14:29**
Client ID: Run ID: **Balance1_447589** SeqNo: **7570951** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1044	10.0	1000	0	104	85 - 115				

DUP Sample ID: **HS23091354-01DUP** Units: **mg/L** Analysis Date: **27-Sep-2023 14:29**
Client ID: Run ID: **Balance1_447589** SeqNo: **7570947** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	12740	10.0					12720	0.157	20	

DUP Sample ID: **HS23091195-04DUP** Units: **mg/L** Analysis Date: **27-Sep-2023 14:29**
Client ID: Run ID: **Balance1_447589** SeqNo: **7570932** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	544	10.0					544	0	20	

The following samples were analyzed in this batch: HS23091305-13 HS23091305-14 HS23091305-15 HS23091305-16 HS23091305-17 HS23091305-18

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: HS23091305

QC BATCH REPORT

Batch ID: R448196 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **04-Oct-2023 23:27**
Client ID: Run ID: **ICS-Integrion_448196** SeqNo: **7586038** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	U	0.100								
Chloride	U	0.500								
Sulfate	U	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **04-Oct-2023 23:38**
Client ID: Run ID: **ICS-Integrion_448196** SeqNo: **7586039** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.652	0.100	4	0	91.3	80 - 120				
Chloride	20.78	0.500	20	0	104	80 - 120				
Sulfate	20.04	0.500	20	0	100	80 - 120				

MS Sample ID: **HS23091305-02MS** Units: **mg/L** Analysis Date: **05-Oct-2023 00:07**
Client ID: **BS-26** Run ID: **ICS-Integrion_448196** SeqNo: **7586043** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.7461	0.100	2	0	37.3	80 - 120				S
Chloride	46.64	0.500	10	37.81	88.3	80 - 120				
Sulfate	24.84	0.500	10	16.61	82.3	80 - 120				

MSD Sample ID: **HS23091305-02MSD** Units: **mg/L** Analysis Date: **05-Oct-2023 00:13**
Client ID: **BS-26** Run ID: **ICS-Integrion_448196** SeqNo: **7586044** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.7782	0.100	2	0	38.9	80 - 120	0.7461	4.21	20	S
Chloride	46.63	0.500	10	37.81	88.2	80 - 120	46.64	0.0322	20	
Sulfate	24.87	0.500	10	16.61	82.6	80 - 120	24.84	0.102	20	

The following samples were analyzed in this batch:

HS23091305-01	HS23091305-02	HS23091305-03	HS23091305-04
HS23091305-05	HS23091305-06	HS23091305-07	HS23091305-08
HS23091305-09	HS23091305-10	HS23091305-11	HS23091305-12
HS23091305-13	HS23091305-14	HS23091305-15	HS23091305-16
HS23091305-17	HS23091305-18	HS23091305-19	

Client: Environmental Resources Mgmt.
Project: Sulphur Dome
WorkOrder: **HS23091305**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID: HS23091305 **Date/Time Received:** **21-Sep-2023 12:05**

Client Name: ERMSW-HOU **Received by:** **Corey Grandits**

Completed By:	/S/ Nelson D. Dusara	22-Sep-2023 00:55	**Reviewed by:**	/S/ Bernadette A. Fini	22-Sep-2023 10:50
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **WATER** Carrier name: **Client**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:307764,307763
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	3.0/2.9,2.7/2.6,2.1/2.0,2.4/2.3,4.6/4.0,3.0/2.9,3.3/3.2,2.0/1.9 C UC/C	IR 31
Cooler(s)/Kit(s):	51389,BLUE,48127,51385,50781,50173,50782,50962	
Date/Time sample(s) sent to storage:	09/21/2023 18:00	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes: Sample BS-12 was received however is not listed on the COC. Proceeded to login for analysis.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 2

COC ID: 307764

HS23091305

Environmental Resources Mgmt.
Sulphur Dome

ALS Project Manager:

Customer Information		Project Information		
Purchase Order		Project Name		A
Work Order		Project Number		B
Company Name		Bill To Company		C
Send Report To		Invoice Attn		D
Address		Address		E
				F
City/State/Zip		City/State/Zip		G
Phone		Phone		H
Fax		Fax		I
e-Mail Address		e-Mail Address		J

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BS-3	9/18/23 ~~9/20/23~~	1200	Water	1,4,2,8	12	X	X	X	X	X	X	X	X	X	X	
2	BS-26	9/18/23	1400														
3	BW-7A-BS	9/18/23	1545														
4	BS-8	9/19/23	745														
5	BS-7		915														
6	BS-6		930														
7	BS-23		945														
8	BS-22		1120														
9	BS-21		1145														
10	BS-5		1330														

Sampler(s) Please Print & Sign: David Sanguinetti / DS Aaron Mathews

Shipment Method:

Required Turnaround Time: (Check Box) ☒ ☐ ☐ ☐

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
DS	9/21/23	1205	
Relinquished by:	Date:	Time:	Received by (Laboratory):
			CA 9-21-23 1205
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
10291	
51385	2.4
51389	3.0
None	2.7
54782	3.3

QC Package: (Check One Box Below)

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 2 of 2

COC ID: 307763

HS23091305

Environmental Resources Mgmt.

Sulphur Dome

ALS Project Manager:

Customer Information		Project Information		
Purchase Order		Project Name		A
Work Order		Project Number		B
Company Name		Bill To Company		C
Send Report To		Invoice Attn		D
Address		Address		E
				F
City/State/Zip		City/State/Zip		G
Phone		Phone		H
Fax		Fax		I
e-Mail Address		e-Mail Address		J

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BS-18	9/19/23	1350	Water	1,2,4,8	12	X	X	X	X	X	X	X	X	X	X	
2	19-1605	9/19/23	1515														
3	19-580	9/20/23	745														
4	BS-17	9/20/23	825														
5	BS-25	9/20/23	840														
6	19-582	9/20/23	1410														
7	19-1055	9/20/23	1430														
8	Cottages Well	9/20/23	1550														
9																	
10																	

Sampler(s) Please Print & Sign: David Sanguinetti / [signature]

Shipment Method:

Required Turnaround Time: (Check Box) ☒ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible]

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
[signature] Aaron Martinez	9/21/23	1245	
Relinquished by:	Date:	Time:	Received by (Laboratory):
			9/21/23 1209
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: Sulphur Dome

Cooler ID	Cooler Temp.
5082	3.3
5073	3.0
5086	2.0
4827	3.1

QC Package: (Check One Box Below)

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	881836	Job #:	55326	IS-102884	Co. Job#:
Sample Name:	BS-26				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur, LA				
Formation/Depth:					
Sampling Point:					
Date Sampled:	7/17/2023 10:00	Date Received:	7/19/2023	Date Reported:	9/29/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	1.46					
Oxygen	18.56					
Nitrogen	66.42					
Carbon Dioxide	7.87					
Methane	5.68	-48.74	-242		1.2	0.80
Ethane	0.0076				0.0017	0.0021
Ethylene	nd					
Propane	nd				< 0.0002	< 0.0003
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0025					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.88
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
dD of methane data obtained online via GC-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	881837	Job #:	55326	IS-102884	Co. Job#:
Sample Name:	Cottages				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur, LA				
Formation/Depth:					
Sampling Point:					
Date Sampled:	7/17/2023	11:15	Date Received:	7/19/2023	Date Reported: 9/29/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	1.50					
Oxygen	16.60					
Nitrogen	70.87					
Carbon Dioxide	9.69					
Methane	1.34	-78.3			0.34	0.23
Ethane	nd				< 0.0002	< 0.0002
Ethylene	nd					
Propane	nd				< 0.0002	< 0.0003
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0019					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.84
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
d13C of methane data obtained online via GC-IRMS.
Insufficient methane concentration for dD analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Reset Form

SEND DATA TO:

Name: Scott Himes
Company: ERM
Address: 840 W Sam Houston Pkwy N
Ste. 600
Houston, TX 77024
Phone: 832-209-8811
Email: scott.himes@erm.com
Project: 0688077
PO #: Sulphur Dome
Location: Sulphur, LA
Sampled By: Taylar Brown

SEND INVOICE TO (if different from SEND DATA TO):

Name:
Company:
Address:

Phone:
Email:

Standard ◉
Priority ○
Rush ○

Analysis Requested

Sample Description

Container Number	Sample Identification	Date Sampled	Time	DG-N				Comments
1	BS-25	7/17/23	10:00	X				
1	Cottages	7/17/23	11:15	X				

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	Taylar Brown	ERM	7/18/23	12:00
Received by	Les Schlater / SR Isotech		7-19-23	1250
Relinquished by				
Received by				
Relinquished by				
Received by				

Weatherford LABORATORIES

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	889162	Job #:	55994	IS-102884	Co. Job#:
Sample Name:	189416-1300				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	VOA Vial				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur, LA				
Formation/Depth:					
Sampling Point:					
Date Sampled:	8/28/2023 17:30	Date Received:	9/15/2023	Date Reported:	10/05/2023

δD of water	----------	-11.8 ‰ relative to VSMOW
δ^{18}O of water	----------	1.06 ‰ relative to VSMOW
Tritium content of water	----------	na
δ^{13}C of DIC	----------	na
^{14}C content of DIC	----------	na
δ^{15}N of nitrate	----------	na
δ^{18}O of nitrate	----------	na
δ^{34}S of sulfate	----------	na
δ^{18}O of sulfate	----------	na
Vacuum Distilled? *	----------	Yes

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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Lab #:	889163	Job #:	55994	IS-102884	Co. Job#:
Sample Name:	189416-2700				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	VOA Vial				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur, LA				
Formation/Depth:					
Sampling Point:					
Date Sampled:	8/28/2023 16:00	Date Received:	9/15/2023	Date Reported:	10/05/2023

δD of water	----------	-12.8 ‰ relative to VSMOW
δ^{18}O of water	----------	1.04 ‰ relative to VSMOW
Tritium content of water	----------	na
δ^{13}C of DIC	----------	na
^{14}C content of DIC	----------	na
δ^{15}N of nitrate	----------	na
δ^{18}O of nitrate	----------	na
δ^{34}S of sulfate	----------	na
δ^{18}O of sulfate	----------	na
Vacuum Distilled? *	----------	Yes

Remarks:

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

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ISOTECH LABORATORIES INC
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Reset Form

SEND DATA TO:

Name: Scott Himes
Company: ERM
Address: 840 West Sam Houston Pkwy N
Ste. 600
Houston, Tx 77024
Phone: 832-209-8811
Email: scott.himes@erm.com
Project: Sulphur Dome
PO #: 0701093
Location: Sulphur, LA
Sampled By: Westlake

SEND INVOICE TO (if different from SEND DATA TO):

Name:
Company: SAME
Address:
Phone:
Email:

Standard ◉
Priority ○
Rush ○

Analysis Requested

Sample Description

Container Number	Sample Identification	Date Sampled	Time	STW				Comments
	189416 - 1300	8/28/23	1730	X				only D&T + 180+
	189416 - 2700	8/28/23	1600	+				NO 13C

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	DSyA	ERM	9/14/23	1330
Received by	Les Schluter / SR Isotech		9-15-23	9:15
Relinquished by				
Received by				
Relinquished by				
Received by				

Weatherford LABORATORIES

ISOTECH
a Stratum Reservoir brand
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Lab #:	890388	Job #:	56085	IS-102884	Co. Job#:
Sample Name:	BW-2				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	9/18/2023 11:20	Date Received:	9/22/2023	Date Reported:	10/03/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	0.0483			
Argon	0.0547			
Oxygen	0.64			
Nitrogen	12.99			
Carbon Dioxide	2.78			
Methane	82.76	-34.49	-143.8	
Ethane	0.300			
Ethylene	nd			
Propane	0.0558			
Propylene	nd			
Iso-butane	0.0260			
N-butane	0.0955			
Iso-pentane	0.0548			
N-pentane	0.0752			
Hexanes +	0.117			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 861

Specific gravity, calculated: 0.647

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	890389	Job #:	56085	IS-102884	Co. Job#:
Sample Name:	BS-3				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	9/18/2023 12:00	Date Received:	9/22/2023	Date Reported:	10/03/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.917			
Oxygen	20.38			
Nitrogen	77.10			
Carbon Dioxide	0.089			
Methane	1.49	-31.24	-138.7	
Ethane	0.0108			
Ethylene	0.0003			
Propane	0.0036			
Propylene	nd			
Iso-butane	0.0013			
N-butane	0.0016			
Iso-pentane	0.0009			
N-pentane	0.0008			
Hexanes +	0.0020			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 16

Specific gravity, calculated: 0.994

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	890390	Job #:	56085	IS-102884	Co. Job#:
Sample Name:	Cavern 4				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	9/20/2023 14:55	Date Received:	9/22/2023	Date Reported:	10/03/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	0.0560			
Argon	0.150			
Oxygen	0.88			
Nitrogen	65.43			
Carbon Dioxide	0.28			
Methane	32.05	-34.15	-140.8	
Ethane	0.173			
Ethylene	nd			
Propane	0.198			
Propylene	nd			
Iso-butane	0.0719			
N-butane	0.254			
Iso-pentane	0.115			
N-pentane	0.152			
Hexanes +	0.191			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 363
Specific gravity, calculated: 0.850

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	890391	Job #:	56085	IS-102884	Co. Job#:
Sample Name:	BS-5				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	9/20/2023 13:10	Date Received:	9/22/2023	Date Reported:	10/03/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.540			
Oxygen	11.11			
Nitrogen	40.07			
Carbon Dioxide	0.52			
Methane	46.82	-37.16	-147.9	
Ethane	0.579			
Ethylene	0.0874			
Propane	0.159			
Propylene	nd			
Iso-butane	0.0406			
N-butane	0.0387			
Iso-pentane	0.0133			
N-pentane	0.0092			
Hexanes +	0.0148			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 494

Specific gravity, calculated: 0.797

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	890392	Job #:	56085	IS-102884	Co. Job#:
Sample Name:	BS-1				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	9/20/2023 13:30	Date Received:	9/22/2023	Date Reported:	10/03/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0053			
Hydrogen	nd			
Argon	0.0612			
Oxygen	0.96			
Nitrogen	4.41			
Carbon Dioxide	2.57			
Methane	89.73	-39.25	-158.6	
Ethane	1.50			
Ethylene	0.0006			
Propane	0.414			
Propylene	nd			
Iso-butane	0.0977			
N-butane	0.106			
Iso-pentane	0.0410			
N-pentane	0.0308			
Hexanes +	0.0685			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 960
Specific gravity, calculated: 0.620

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
a Stratum Reservoir brand
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Lab #:	890393	Job #:	56085	IS-102884	Co. Job#:
Sample Name:	Brine Well 7A BS				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	9/20/2023 14:30	Date Received:	9/22/2023	Date Reported:	10/03/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.754			
Oxygen	15.34			
Nitrogen	61.16			
Carbon Dioxide	0.39			
Methane	22.05	-33.32	-141.4	
Ethane	0.216			
Ethylene	nd			
Propane	0.0607			
Propylene	nd			
Iso-butane	0.0207			
N-butane	0.0080			
Iso-pentane	0.0018			
N-pentane	0.0005			
Hexanes +	0.0018			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 230

Specific gravity, calculated: 0.903

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	890394	Job #:	56085	IS-102884	Co. Job#:
Sample Name:	SN 110159 BS-10				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	9/20/2023 15:10	Date Received:	9/22/2023	Date Reported:	10/03/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.910			
Oxygen	16.81			
Nitrogen	75.02			
Carbon Dioxide	1.69			
Methane	5.56	-22.20	-103.2	
Ethane	0.0030			
Ethylene	nd			
Propane	0.0004			
Propylene	nd			
Iso-butane	0.0009			
N-butane	0.0002			
Iso-pentane	0.0002			
N-pentane	0.0001			
Hexanes +	0.0006			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 56

Specific gravity, calculated: 0.980

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	890395	Job #:	56085	IS-102884	Co. Job#:
Sample Name:	BS-4				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	9/20/2023 16:00	Date Received:	9/22/2023	Date Reported:	10/03/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.550			
Oxygen	8.93			
Nitrogen	41.87			
Carbon Dioxide	1.55			
Methane	46.17	-37.03	-145.0	
Ethane	0.638			
Ethylene	0.0223			
Propane	0.144			
Propylene	nd			
Iso-butane	0.0408			
N-butane	0.0372			
Iso-pentane	0.0158			
N-pentane	0.0111			
Hexanes +	0.0173			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 487

Specific gravity, calculated: 0.802

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	890396	Job #:	56085	IS-102884	Co. Job#:
Sample Name:	BS-24				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	9/20/2023 16:05	Date Received:	9/22/2023	Date Reported:	10/03/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.210			
Oxygen	4.05			
Nitrogen	16.04			
Carbon Dioxide	2.35			
Methane	76.08	-35.52	-145.7	
Ethane	0.729			
Ethylene	0.110			
Propane	0.214			
Propylene	nd			
Iso-butane	0.0663			
N-butane	0.0623			
Iso-pentane	0.0282			
N-pentane	0.0214			
Hexanes +	0.0378			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 799

Specific gravity, calculated: 0.677

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Reset Form

SEND DATA TO:

Name: Scott Himes

Company: ERM

Address: 840 W. Sam Houston Pkwy N.
Ste 600
Houston, TX 77024

Phone: 832-209-8811

Email: scott.himes@erm.com

Project: Sulphur Dome

PO #: 0701093

Location: Sulphur Louisiana

Sampled By: Scott Himes, David Sanguinetti

SEND INVOICE TO (if different from SEND DATA TO):

Name:

Company:

Address:

Phone:

Email:

Standard ○ Priority ○ Rush ◉

Analysis Requested

Sample Description

Container Number	Sample Identification	Date Sampled	Time	NG-1				Comments
1	BW-2	Sep-18-23	11:20 am	X				
1	BS-3	Sep-18-23	12:00 pm	X				
1	Cavern 4	Sep-20-23	2:55 pm	X				
1	BS-5	Sep-20-23	1:10 pm	X				
1	BS-1	Sep-20-23	1:30 pm	X				
1	Brine Well 7A BS	Sep-20-23	2:30 pm	X				
1	SN 110159 BS-10	Sep-20-23	3:10 pm	X				
1	BS-4	Sep-20-23	4:00 pm	X				

Chain-of-Custody Record

Signature	Company	Date	Time
Relinquished by	ERM	Sep-21-23	5:00 pm
Received by Les Schluter / SR Isotech		9-7-23	9:00
Relinquished by			
Received by			
Relinquished by			
Received by			

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Reset Form

SEND DATA TO:

Name: Scott Himes

Company: ERM

Address: 840 W. Sam Houston Pkwy N.
Ste 600
Houston, TX 77024

Phone: 832-209-8811

Email: scott.himes@erm.com

Project: Sulphur Dome

PO #: 0701093

Location: Sulphur Louisiana

Sampled By: Scott Himes, David Sanguinetti

SEND INVOICE TO (if different from SEND DATA TO):

Name:

Company:

Address:

Phone:

Email:

Standard ○ Priority ○ Rush ◉

Analysis Requested

Sample Description

Container Number	Sample Identification	Date Sampled	Time	NG-1				Comments
1	BS-24	Sep-20-23	4:05 pm	X				

Chain-of-Custody Record

Signature	Company	Date	Time
Relinquished by	ERM	Sep-21-23	5:00 pm
Received by Les Schluter / SR Isotech		9-22-23	9:00
Relinquished by			
Received by			
Relinquished by			
Received by			

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Lab #:	872432	Job #:	54722	IS-102884	Co. Job#:
Sample Name:	BS-4				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur, Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	5/22/2023 10:34	Date Received:	5/24/2023	Date Reported:	8/18/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0360			
Oxygen	0.16			
Nitrogen	1.87			
Carbon Dioxide	1.56			
Methane	94.48	-38.05	-151.3	
Ethane	1.30			
Ethylene	0.0540			
Propane	0.294			
Propylene	nd			
Iso-butane	0.0819			
N-butane	0.0757			
Iso-pentane	0.0318			
N-pentane	0.0220			
Hexanes +	0.0341			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 998

Specific gravity, calculated: 0.591

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	872433	Job #:	54722	IS-102884	Co. Job#:
Sample Name:	BS-24				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur, Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	5/22/2023 11:15	Date Received:	5/24/2023	Date Reported:	8/18/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0271			
Oxygen	0.13			
Nitrogen	1.37			
Carbon Dioxide	2.26			
Methane	94.64	-35.92	-146.8	
Ethane	0.884			
Ethylene	0.150			
Propane	0.270			
Propylene	nd			
Iso-butane	0.0828			
N-butane	0.0784			
Iso-pentane	0.0347			
N-pentane	0.0259			
Hexanes +	0.0460			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 995

Specific gravity, calculated: 0.595

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	872434	Job #:	54722	IS-102884	Co. Job#:
Sample Name:	BS-3				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur, Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	5/22/2023 11:50	Date Received:	5/24/2023	Date Reported:	8/18/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0448			
Oxygen	0.086			
Nitrogen	2.11			
Carbon Dioxide	2.14			
Methane	94.46	-34.66	-141.0	
Ethane	0.673			
Ethylene	0.0286			
Propane	0.198			
Propylene	nd			
Iso-butane	0.0751			
N-butane	0.0647			
Iso-pentane	0.0356			
N-pentane	0.0262			
Hexanes +	0.0548			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 985

Specific gravity, calculated: 0.594

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	872435	Job #:	54722	IS-102884	Co. Job#:
Sample Name:	Brine Well 2				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur, Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	5/22/2023 14:45	Date Received:	5/24/2023	Date Reported:	8/18/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	0.0466			
Argon	0.0341			
Oxygen	0.21			
Nitrogen	10.90			
Carbon Dioxide	3.88			
Methane	84.12	-34.64	-144.9	
Ethane	0.339			
Ethylene	nd			
Propane	0.0587			
Propylene	nd			
Iso-butane	0.0321			
N-butane	0.123			
Iso-pentane	0.0643			
N-pentane	0.0837			
Hexanes +	0.105			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 877

Specific gravity, calculated: 0.648

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	872436	Job #:	54722	IS-102884	Co. Job#:
Sample Name:	110159				Co. Lab#:
Company:	Environmental Resources Management (ERM)				
API/Well:					
Container:	IsoBag				
Field/Site Name:	Sulphur Dome				
Location:	Sulphur, Louisiana				
Formation:					
Sampling Point:					
Date Sampled:	5/22/2023 15:15	Date Received:	5/24/2023	Date Reported:	8/18/2023

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.970			
Oxygen	21.72			
Nitrogen	77.00			
Carbon Dioxide	0.062			
Methane	0.247	-25.78	-107	
Ethane	0.0004			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	0.0001			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 3
Specific gravity, calculated: 1.000

Remarks: Methane hydrogen isotopes obtained online via GC-P-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Reset Form

ISOTECH
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SEND DATA TO:

Name: Scott Himes
Company: ERM
Address: 840 W. Sam Houston Pkwy N.
Ste 600
Houston, TX 77024

Phone: 832-209-8811
Email: scott.himes@erm.com
Project: Sulphur Dome
PO #: 0688077
Location: Sulphur Louisiana
Sampled By: Taylar Brown, Scott Himes

SEND INVOICE TO (if different from SEND DATA TO):

Name:
Company:
Address:

Phone:
Email:

Standard ◉ Priority ○ Rush ○

Analysis Requested

Sample Description

Container Number	Sample Identification	Date Sampled	Time	NG-1	DG-1			Comments
1	BS-4	May-22-23	10:34 am	X				
1	BS-24	May-22-23	11:15 am	X				
1	BS-3	May-22-23	11:50 am	X				
1	019-580	May-22-23	1:40 pm		X			
1	019-582	May-22-23	2:00 pm		X			
1	019-995	May-22-23	2:20 pm		X			
1	Brine Well 2	May-22-23	2:45 pm	X				
1	110159	May-22-23	3:15 pm	X				

Chain-of-Custody Record

Signature		Company	Date	Time
Relinquished by		ERM	May-23-23	4:00 pm
Received by	Les Schluter / SR Isotech		5-24-23	9:45
Relinquished by				
Received by				
Relinquished by				
Received by				

ISOTECH

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Lab #: 890811 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-26 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/18/2023 14:00 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.063					
Helium	na					
Hydrogen	nd					
Argon	1.29					
Oxygen	17.19					
Nitrogen	75.71					
Carbon Dioxide	3.62					
Methane	2.12	-40.8	-157		0.77	0.51
Ethane	0.0116				0.0045	0.0056
Ethylene	nd					
Propane	0.0009				0.00034	0.00062
Propylene	nd					
Iso-butane	0.0006					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0027					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.79
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Methane isotopes obtained online via GC-C-IRMS/GC-P-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890812 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BW-7~~A~~B (SAH, 10/9/2023) **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/18/2023 15:45 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	0.969					
Oxygen	19.27					
Nitrogen	79.45					
Carbon Dioxide	0.30					
Methane	0.0036				0.0056	0.0037
Ethane	0.0001				0.00024	0.00029
Ethylene	nd					
Propane	0.0013				0.0021	0.0038
Propylene	nd					
Iso-butane	0.0007					
N-butane	0.0012					
Iso-pentane	0.0003					
N-pentane	0.0002					
Hexanes +	0.0009					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.22
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Insufficient hydrocarbon concentrations for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890813 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: 19-1603 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/19/2023 15:15 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	1.12					
Oxygen	15.46					
Nitrogen	78.53					
Carbon Dioxide	4.25					
Methane	0.641	-60.3	-125		0.52	0.35
Ethane	0.0014				0.0012	0.0015
Ethylene	nd					
Propane	nd				<0.0002	<0.0004
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0012					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.58
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Methane isotopes obtained online via GC-C-IRMS/GC-P-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890814 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: 19-580 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 07:45 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	1.66					
Oxygen	6.23					
Nitrogen	80.38					
Carbon Dioxide	11.30					
Methane	0.433	-56.2			0.10	0.068
Ethane	nd				<0.0002	<0.0002
Ethylene	nd					
Propane	nd				<0.0001	<0.0003
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0031					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.84
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Methane isotopes obtained online via GC-C-IRMS.
Insufficient methane concentration for dD analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890815 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-8 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 10:35 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.16					
Helium	na					
Hydrogen	nd					
Argon	1.19					
Oxygen	27.26					
Nitrogen	71.03					
Carbon Dioxide	0.28					
Methane	0.0769				0.030	0.020
Ethane	0.0020				0.00086	0.0011
Ethylene	nd					
Propane	0.0007				0.00030	0.00054
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0031					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.81
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Insufficient hydrocarbon concentrations for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890816 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-12 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 10:40 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.13					
Helium	na					
Hydrogen	nd					
Argon	1.12					
Oxygen	24.67					
Nitrogen	73.77					
Carbon Dioxide	0.24					
Methane	0.0650				0.035	0.023
Ethane	0.0015				0.00086	0.0011
Ethylene	nd					
Propane	0.0004				0.00022	0.00041
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0023					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.75
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Insufficient hydrocarbon concentrations for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890817 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-7 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 10:45 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.15					
Helium	na					
Hydrogen	nd					
Argon	1.20					
Oxygen	24.65					
Nitrogen	73.16					
Carbon Dioxide	0.40					
Methane	0.427	-39.5			0.17	0.11
Ethane	0.0100				0.0043	0.0054
Ethylene	nd					
Propane	0.0013				0.00054	0.00099
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0024					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.79
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Methane isotopes obtained online via GC-C-IRMS.
Insufficient methane concentration for dD analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890818 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-25 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 10:50 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.20					
Helium	na					
Hydrogen	nd					
Argon	1.30					
Oxygen	28.32					
Nitrogen	69.58					
Carbon Dioxide	0.40					
Methane	0.195				0.060	0.040
Ethane	0.0027				0.00088	0.0011
Ethylene	nd					
Propane	nd				<0.0002	<0.0004
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0038					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.85
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Insufficient hydrocarbon concentrations for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890819 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-6 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 10:55 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.093					
Helium	na					
Hydrogen	nd					
Argon	1.06					
Oxygen	23.75					
Nitrogen	73.08					
Carbon Dioxide	0.15					
Methane	1.84	-34.8	-144		1.1	0.75
Ethane	0.0112				0.0073	0.0091
Ethylene	0.0007					
Propane	0.0041				0.0026	0.0047
Propylene	nd					
Iso-butane	0.0014					
N-butane	0.0010					
Iso-pentane	0.0003					
N-pentane	nd					
Hexanes +	0.0018					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.65
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Methane isotopes obtained online via GC-C-IRMS/GC-P-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890820 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-23 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 11:00 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.24					
Helium	na					
Hydrogen	nd					
Argon	1.40					
Oxygen	30.67					
Nitrogen	65.61					
Carbon Dioxide	0.45					
Methane	1.61	-37.6			0.36	0.24
Ethane	0.0131				0.0032	0.0040
Ethylene	nd					
Propane	0.0036				0.00084	0.0015
Propylene	nd					
Iso-butane	0.0011					
N-butane	0.0008					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0038					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.87
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Insufficient methane concentration for dD analysis.

Methane isotopes obtained online via GC-C-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890821 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-22 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 12:45 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.30					
Helium	na					
Hydrogen	nd					
Argon	1.33					
Oxygen	32.90					
Nitrogen	62.91					
Carbon Dioxide	0.47					
Methane	2.06	-37.0			0.49	0.33
Ethane	0.0253				0.0064	0.0080
Ethylene	nd					
Propane	0.0045				0.0011	0.0020
Propylene	nd					
Iso-butane	0.0012					
N-butane	0.0010					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0073					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.89
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Insufficient methane concentration for dD analysis.
Methane isotopes obtained online via GC-C-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890822 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-21 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 12:50 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.12					
Helium	na					
Hydrogen	nd					
Argon	1.09					
Oxygen	26.85					
Nitrogen	69.78					
Carbon Dioxide	0.16					
Methane	1.97	-38.0	-150		0.97	0.65
Ethane	0.0194				0.010	0.013
Ethylene	nd					
Propane	0.0032				0.0016	0.0029
Propylene	nd					
Iso-butane	0.0010					
N-butane	0.0005					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0017					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.73
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Methane isotopes obtained online via GC-C-IRMS/GC-P-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890823 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-18 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 12:55 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.27					
Helium	na					
Hydrogen	nd					
Argon	1.28					
Oxygen	34.44					
Nitrogen	61.19					
Carbon Dioxide	0.30					
Methane	2.49	-37.5	-145		0.62	0.42
Ethane	0.0208				0.0055	0.0069
Ethylene	nd					
Propane	0.0052				0.0013	0.0025
Propylene	nd					
Iso-butane	0.0015					
N-butane	0.0012					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0045					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.88
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Methane isotopes obtained online via GC-C-IRMS/GC-P-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890824 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: BS-17 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 13:00 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.30					
Helium	na					
Hydrogen	nd					
Argon	1.13					
Oxygen	31.25					
Nitrogen	50.78					
Carbon Dioxide	0.70					
Methane	15.57	-40.39	-161.9		3.9	2.6
Ethane	0.225				0.060	0.075
Ethylene	nd					
Propane	0.0279				0.0072	0.013
Propylene	nd					
Iso-butane	0.0071					
N-butane	0.0049					
Iso-pentane	0.0015					
N-pentane	0.0009					
Hexanes +	0.0052					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.88
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890825 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: 19-582 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 14:10 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	1.72					
Oxygen	3.50					
Nitrogen	79.67					
Carbon Dioxide	13.90					
Methane	1.21	-57.9			0.29	0.19
Ethane	0.0029				0.00074	0.00092
Ethylene	nd					
Propane	nd				<0.0002	<0.0003
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0034					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.87
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Insufficient methane concentration for dD analysis.

Methane isotopes obtained online via GC-C-IRMS.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890826 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: 19-1055 **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 14:30 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	1.66					
Oxygen	4.65					
Nitrogen	77.74					
Carbon Dioxide	15.52					
Methane	0.423	-52.8			0.081	0.054
Ethane	0.0021				0.00044	0.00055
Ethylene	nd					
Propane	nd				<0.0002	<0.0003
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0036					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.88
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Methane isotopes obtained online via GC-C-IRMS.
Insufficient methane concentration for dD analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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Lab #: 890827 **Job #:** 56116 IS-102884 **Co. Job#:**

Sample Name: Cottages Well **Co. Lab#:**

Company: Environmental Resources Management (ERM) **Cylinder:**

API/Well: **Stratum ID:**

Container: IsoFlask

Field/Site Name: Sulphur Dome

Location: Sulphur, LA

Formation/Depth:

Sampling Point:

Date Sampled: 09/20/2023 15:30 **Date Received:** 09/22/2023 **Date Reported:** 10/09/2023

Component	Chemical mol%	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	0.071					
Helium	na					
Hydrogen	nd					
Argon	1.35					
Oxygen	10.78					
Nitrogen	77.25					
Carbon Dioxide	9.41					
Methane	1.14	-80.2			0.42	0.28
Ethane	0.0017				0.00066	0.00082
Ethylene	nd					
Propane	0.0009				0.00032	0.00060
Propylene	nd					
Iso-butane	nd					
N-butane	nd					
Iso-pentane	nd					
N-pentane	nd					
Hexanes +	0.0026					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.81
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Methane isotopes obtained online via GC-C-IRMS.
Insufficient methane concentration for dD analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calcuations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol % is approvimately equal to vol. %.

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SEND DATA TO:

Name: Scott Himes
Company: ERM
Address: 840 W. Sam Houston Pkwy N Suite 600
City/State Houston, TX
Phone: 281-600-1000
Email: SCOTT.HIMES@ERM.com

SEND INVOICE TO: (if different from SEND DATA TO:)

Name: SAME
Company:
Address:
City/State
Phone:
Email:

Project: Sulphur Dome
Location: Sulphur, LA
Purchase Order #: 0701093
Sampled By: David Sanguinetti

Select One: ☑ Standard ☐ Priority ☐ Rush

Sample Description

Container Number	Sample Identification	Date Sampled	Time	Analyses Requested: DG-1	Comments
	BS-24B	9/18/23	1400	X	
	BW-7A-BS	9/18/23	1545		BW-7B-BS (SAH, 10/9/2023)
	19-1603	9/19/23	1515		
	19-580	9/20/23	745		
	BS-8		1035		
	BS-12		1040		
	BS-7		1045		
	BS-25		1050		
	BS-6		1055		
	BS-23		1100		

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature]	ERM	9/21/23	
Received by	Les Schluter / SR Isotech		9-22-23	9:00
Relinquished by				
Received by				
Relinquished by				
Received by				

1 - 2

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www.isotechlabs.com

Address: 1308 Parkland Court Champaign, IL 61821-1826 Phone: 217-398-3490

SEND DATA TO:

Name: SCOTT HIMES
Company: ERM
Address: 840 W SAM HOUSTON PKWY N SUITE 600
City/State HOUSTON, TX
Phone: 281-600-1000
Email: SCOTT.HIMES@ERM.COM

SEND INVOICE TO: (if different from SEND DATA TO:)

Name: SAME
Company:
Address:
City/State
Phone:
Email:

Project: Sulphur Dome
Location: SULPHUR, LA
Purchase Order #: 0701093
Sampled By: David Sanguinetti

Select One: ☑ *Standard* ☐ *Priority* ☐ *Rush*

Sample Description

Container Number	Sample Identification	Date Sampled	Time	Analyses Requested: ASI	Comments
	BS-22	9/20/23	1245	X	
	BS-21		1250		
	BS-18		1255		
	BS-17		1300		
	19-582		1410		
	19-1055		1480		
	Cottages Well		1530		

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	DS	ERM	9/20/23	
Received by	Les Schluter / SR Isotech		9-22-23	9:00
Relinquished by				
Received by				
Relinquished by				
Received by				

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