


REVIEWED

By Mike Buchanan at 10:43 am, May 17, 2024

March 8, 2022

New Mexico Energy, Minerals and Natural Resources Department
 New Mexico Oil Conservation Division
 1000 Rio Brazos
 Aztec, New Mexico 87410

**Subject: 2021 Annual Groundwater Monitoring Report
 State Com J #6
 San Juan County, New Mexico
 NMOCD Incident Number: NJK1326741691
 NMOCD Administrative Order: 3RP-468**

To Whom it May Concern:

WSP USA Inc. (WSP), on behalf of Hilcorp Energy Company (Hilcorp), presents this 2021 Annual Groundwater Monitoring Report to the New Mexico Oil Conservation Division (NMOCD) to document groundwater monitoring activities conducted at the State Com J #6 natural gas production site (Site) during 2021. The Site is located on land owned by the New Mexico State Land Office in Unit L, Section 36, Township 31N, Range 9W, San Juan County, New Mexico.

SITE BACKGROUND

In 2013, the previous Site operator, ConocoPhillips Company, discovered a release of produced water and condensate originating from the San Juan C4 gas pipeline at a point that crossed an ephemeral wash (pipe line shown on Figure 2). Upon discovery, the production wells associated with the pipeline were immediately shut in and the release location was bermed to prevent surface migration. Initial actions included excavation and trenching of the pipeline and surrounding areas to remove obvious-impacted soils. During their work, groundwater was encountered at the bottom of the excavation. In total, 275 cubic yards of impacted soil during the excavation work in addition to 60 barrels of hydrocarbon impacted water removed from the bottom of the excavation. Depth to groundwater during the excavation was approximately 5 feet below ground surface (bgs).

After initial delineation activities were conducted using a hand auger, four groundwater recovery wells (RW-1 through RW-4) and one monitoring well (MW-1) were installed at the Site in 2014. The Site recovery wells were used to remove light non-aqueous phase liquids (LNAPLs) or PSH (as referenced in this report) and dissolved phase hydrocarbons present. Mobile dual-phase extraction (MDPE) events were subsequently conducted in August and November 2014, April 2015, and November 2017 to recover hydrocarbons from the release area. In total, 777 gallons of PSH was recovered from the four events. Upon request from the NMOCD, two additional monitoring wells were installed at the Site in 2016 located in down-gradient and cross-gradient locations (MW-2 and MW-3, respectively).

Since 2016, wells at the Site have continuously been gauged and sampled on a quarterly basis. Since 2017, PSH has also been removed from recovery wells RW-1 through RW-4 by hand bailing and/or absorbent socks when present during the quarterly-sampling events. In addition, GHD (former environmental consultant for the Site) used a vacuum truck to remove approximately 40 barrels of PSH and impacted water from wells RW-1 through RW-4 during the fourth quarter of 2019. As presented in the 2019 Annual Groundwater Monitoring Report prepared by GHD (dated March 3, 2020), a minimum of 0.11 gallons of PSH was removed during this event.

SITE GROUNDWATER CLEANUP STANDARDS

NMOCD requires groundwater-quality standards presented by the New Mexico Water Quality Control Commission (NMWQCC) in 20.6.2.3103 of the New Mexico Administrative Code (NMAC) be met. The following standards are presented for the constituents of concern at the Site in milligrams per liter (mg/L).

WSP USA
 848 EAST 2ND AVENUE
 DURANGO CO 81301

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 wsp.com



ANALYTE	LIMIT
Benzene	0.005 mg/L
Toluene	1.0 mg/L
Ethylbenzene	0.70 mg/L
Total Xylenes	0.62 mg/L
Total Naphthalene	0.03 mg/L

In addition, NMWQCC standards state that LNAPL/PSH shall not be present floating on the groundwater.

GROUNDWATER SAMPLING ACTIVITIES AND RESULTS

Groundwater-level measurements and samples were collected in January, April, September, and November 2021 from all on-Site wells. Samples were not collected for laboratory analysis from wells RW-1, RW-3, or RW-4 during the September 2021 sampling event due to the presence of PSH. The following sections summarize the sampling procedures and results gathered during these events.

GROUNDWATER-LEVEL MEASUREMENTS

Static groundwater-level monitoring included recording depth-to-groundwater and depth-to-PSH measurements of each monitoring well using a Keck oil/water interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with distilled water prior to each measurement to prevent cross-contamination. Groundwater elevations measured in monitoring wells during the 2021 sampling events are presented in Table 1 and were used to develop groundwater potentiometric surface maps (Figures 3, 4, 5, and 6). The inferred groundwater flow direction is to the southwest.

GROUNDWATER SAMPLING

Groundwater was purged and sampled using a disposable bailer. Purging was accomplished by removing stagnant groundwater from the monitoring well prior to collecting a sample. Field measurements of groundwater quality parameters, including temperature, pH, total dissolved solids, electrical conductivity, dissolved oxygen, and oxidation-reduction potential, were collected during the purging process and are presented in Table 2. Groundwater quality parameters indicate that reducing conditions (negative oxidation-reduction potential values) are generally present throughout the Site with the exception of MW-1 and RW-3.

Following well purging, groundwater samples were placed directly into laboratory-provided vials and labeled with the date and time of collection, well designation, project name, sample collector's name, and parameters to be analyzed. They were immediately sealed and packed on ice to preserve samples. Samples from January were submitted to Pace Analytical for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), and naphthalene by Environmental Protection Agency (EPA) Method 8260B. Samples from April, September, and November 2021 were submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico, for analysis of BTEX and naphthalene by EPA method 8260B. Proper chain-of-custody (COC) procedures were followed documenting the date and time sampled, sample number, type of sample, sample collector's name, preservative used, analyses required, and sample collector's signature. Analytical laboratory reports from the sampling events are included as Enclosure A.

GROUNDWATER ANALYTICAL RESULTS

During the 2021 quarterly sampling events, benzene, toluene, total xylenes, and total naphthalene concentrations in groundwater exceeding the NMWQCC standards were detected during one or more quarters from wells RW-1, RW-3, and RW-4. Toluene was not detected above the NMWQCC standard in any of these wells during the 2021 sampling events. Additionally, BTEX and total naphthalene concentrations were not detected above laboratory reporting limits and/or NMWQCC standards during any of the 2021 quarterly sampling events in wells MW-1, MW-2, MW-3, and RW-2.

A summary of analytical results are presented in Table 3 and on Figure 7.

PHASE SEPARATED HYDROCARBON RECOVERY

Wells RW-1, RW-2, RW-3, and RW-4 all have absorbent socks in them which are replaced quarterly. During the 2021 sampling events, PSH recovered from RW-1 ranged from 10 to 13 ounces, PSH recovered from RW-3 ranged from 8 to 30 ounces, and PSH recovered from RW-4 ranged from 28 to 124 ounces. No product was detected or recovered from RW-2.



CONCLUSIONS AND RECOMMENDATIONS

Overall, the presence/concentrations of PSH, BTEX, and naphthalene concentrations in groundwater have decreased over time at the Site. Benzene, ethylbenzene, total naphthalene, and toluene concentrations have not been detected above laboratory reporting limits and/or NMWQCC standards in more than nine consecutive quarters in wells MW-1, MW-2, MW-3, and RW-2. Additionally, total xylenes have not been detected above laboratory reporting limits and/or the NMWQCC standard in more than seven consecutive quarters in well RW-2. Although still present in wells RW-1, RW-3, and RW-4, PSH, BTEX, total naphthalene appear to be stable and reducing in magnitude. Furthermore, historical sampling of down and cross-gradient wells at the Site indicate the plume has not migrated downgradient from the original release location.

Based on current and historical data gathered at the Site, WSP/Hilcorp recommend the following actions:

- Reduce sampling frequency of all on-Site wells to annual. Once the presence of PSH diminishes and BTEX/naphthalene concentrations indicate compliance with NMWQCC standards, sampling frequency will again be increased to quarterly events.
- Gauge all Site wells for depth-to-groundwater and depth-to-PSH measurements on a quarterly basis.
- Continue PSH removal via absorbent socks and hand bailing on a quarterly basis.

WSP appreciates the opportunity to provide these environmental services to Hilcorp. Please contact either of the undersigned with any questions at (970) 385-1096.

Kind regards,

A handwritten signature in black ink, appearing to read 'Stuart'.

Stuart Hyde, L.G.
Senior Geologist

A handwritten signature in black ink, appearing to read 'Daniel Moir'.

Daniel Moir, P.G.
Sr. Lead Consultant, Geologist

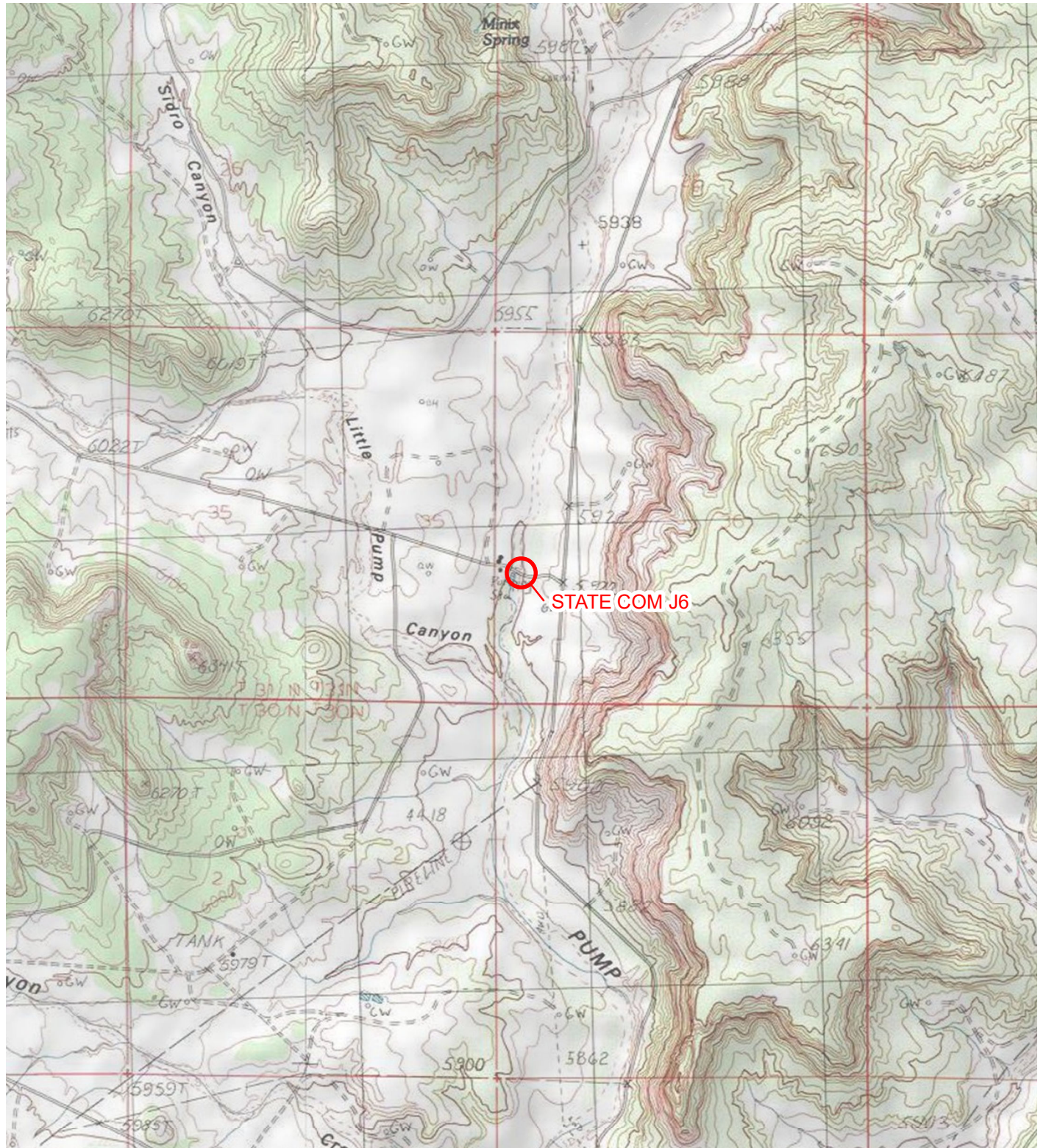
Enclosed:

Figure 1: Site Location Map
Figure 2: Site Map
Figure 3: Q1 Groundwater Elevation Map
Figure 4: Q2 Groundwater Elevation Map
Figure 5: Q3 Groundwater Elevation Map
Figure 6: Q4 Groundwater Elevation Map
Figure 7: Annual Groundwater Analytical Results

Table 1: Well Construction Information and Groundwater Elevations
Table 2: Field Parameter Results
Table 3: Petroleum Hydrocarbon Groundwater Analytical Results

Enclosure A: Analytical Laboratory Reports

FIGURES

**LEGEND**

 SITE LOCATION

0 2,000 4,000
Feet



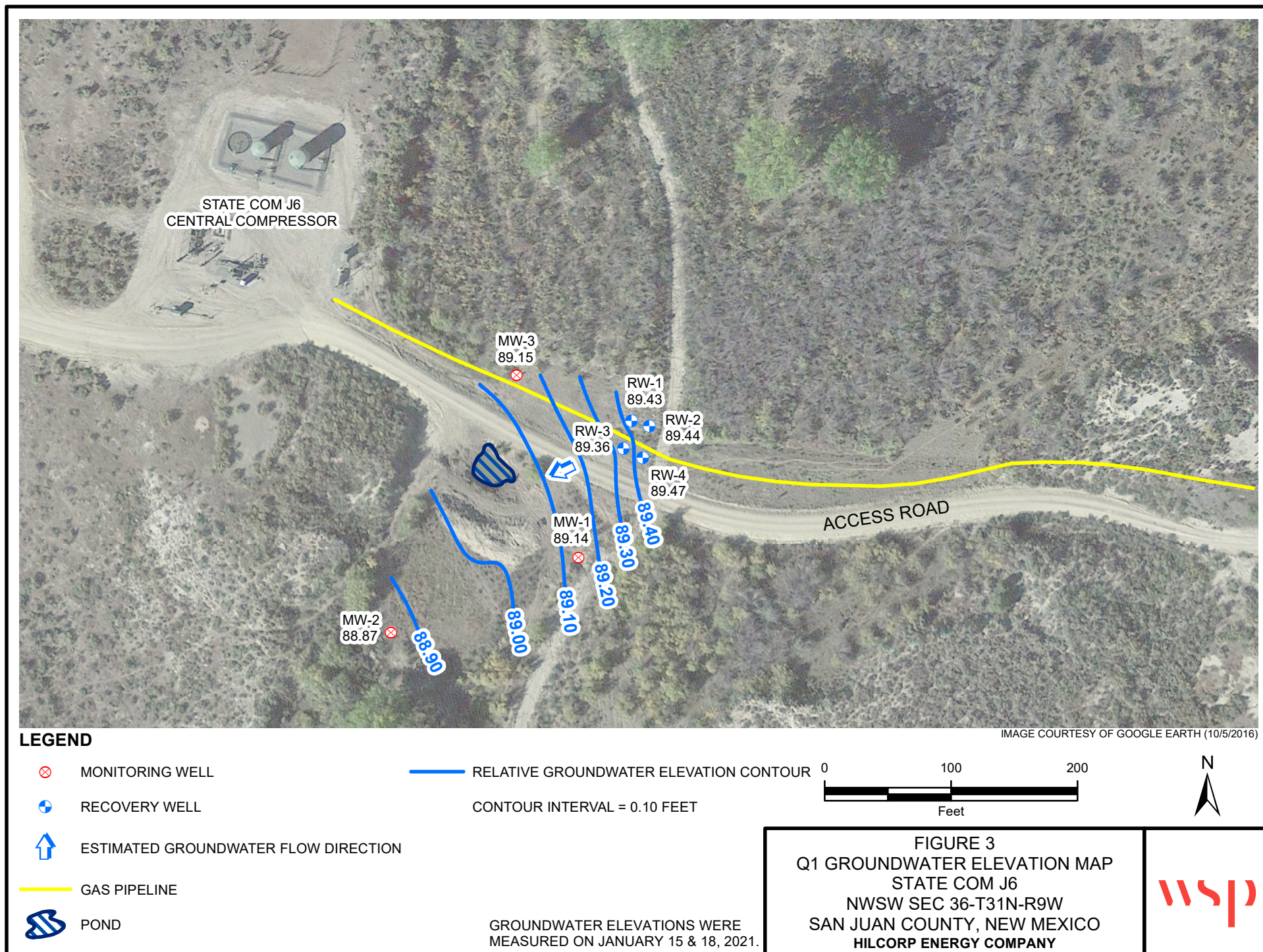
NEW
MEXICO

FIGURE 1
SITE LOCATION MAP
STATE COM J6
NWSW SEC 36-T31N-R9W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

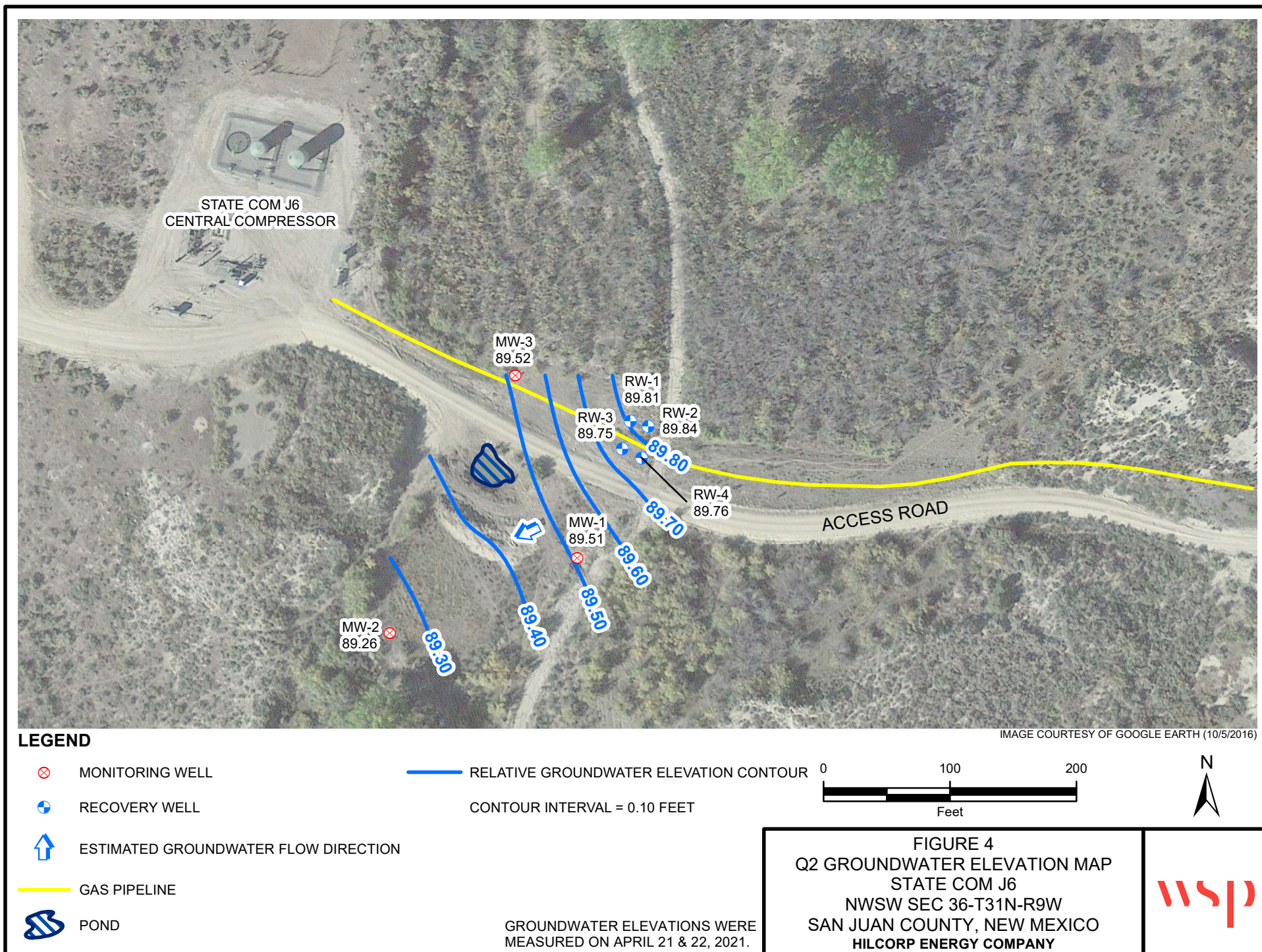




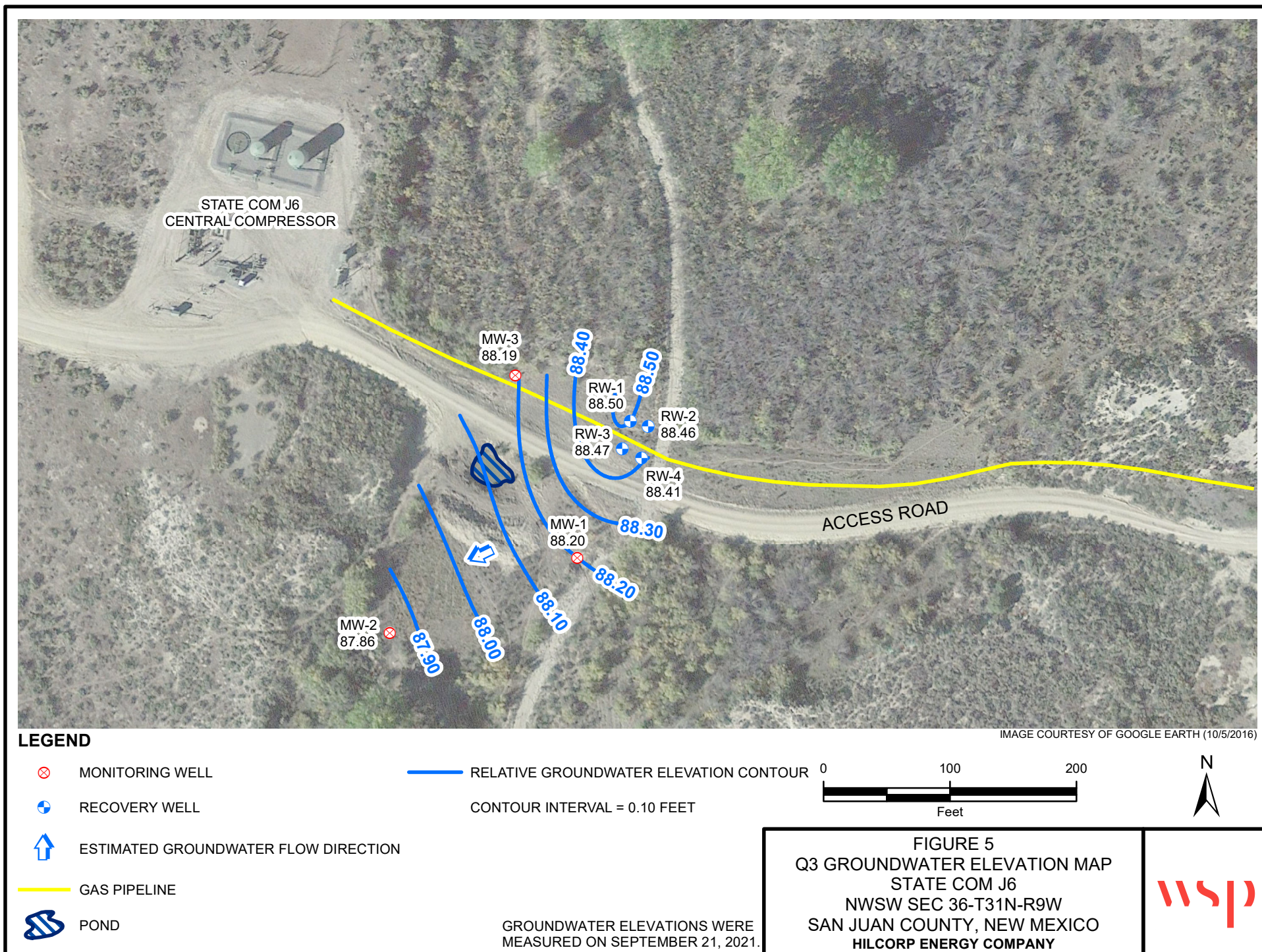
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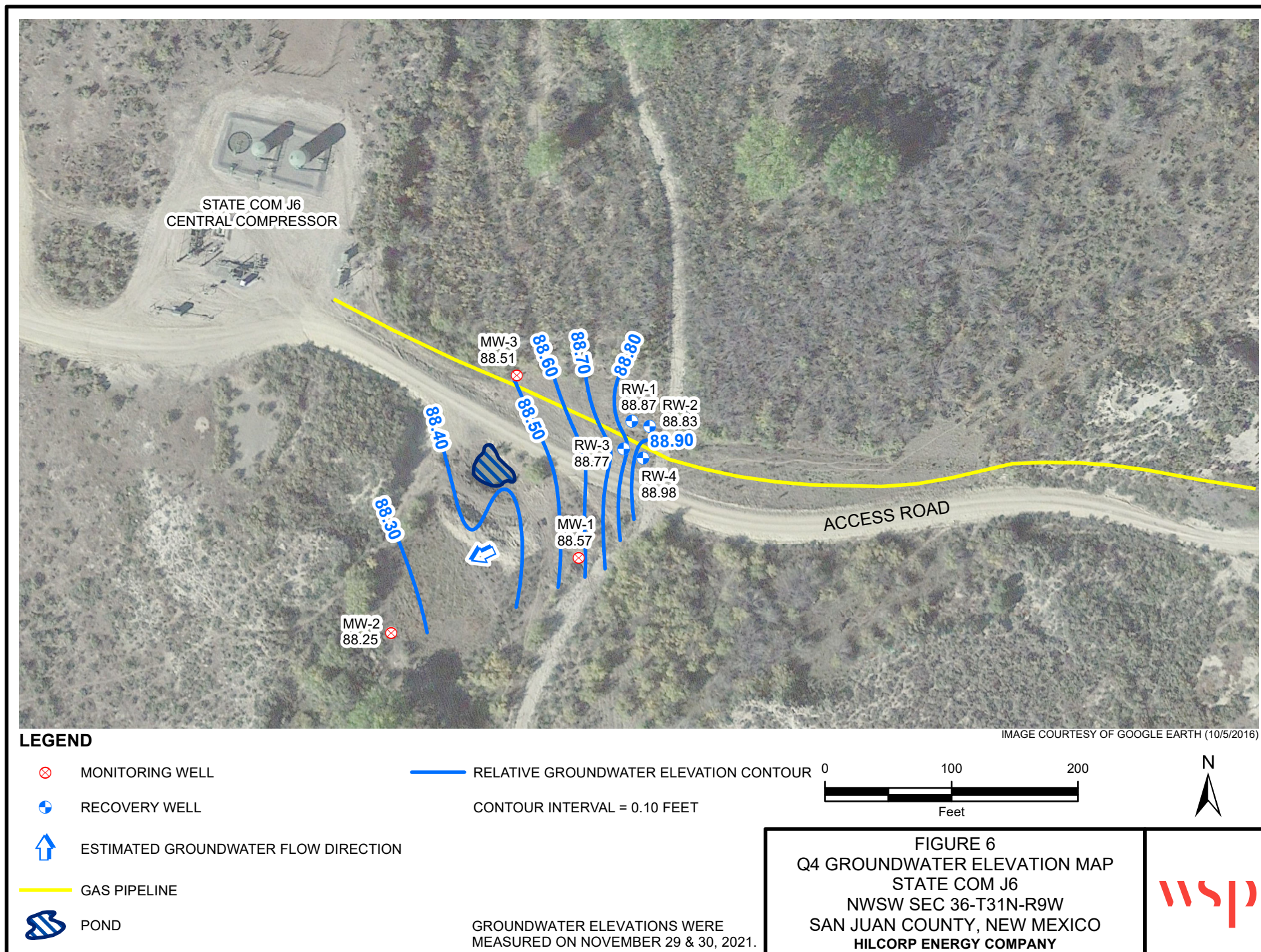
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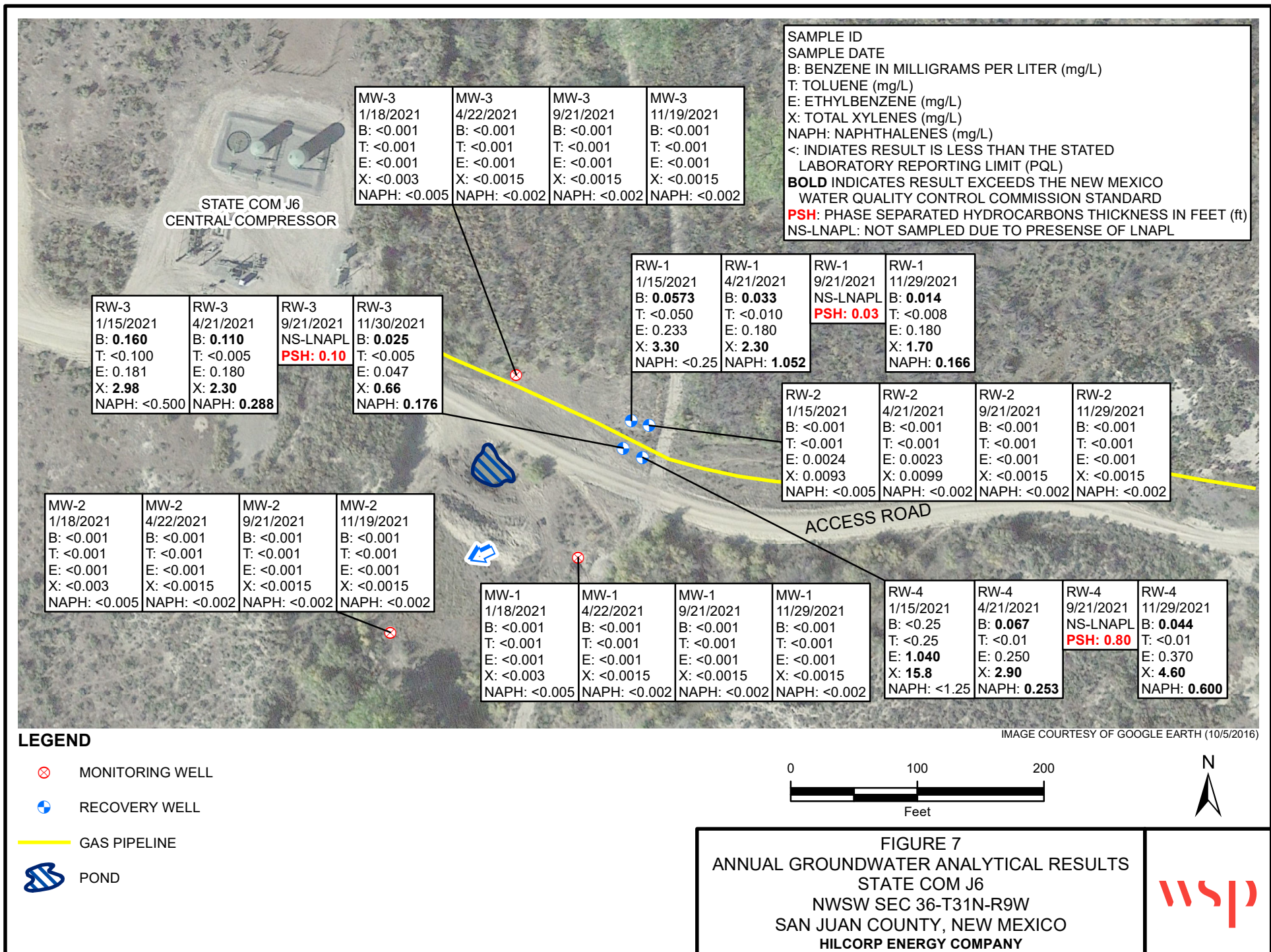
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TABLES

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

STATE COM J #6
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
MW-1	100.00	5/12/2014	--	7.98	--	92.02
		5/20/2014	--	8.14	--	91.86
		5/27/2014	--	8.10	--	91.90
		12/17/2014	--	8.53	--	91.47
		4/21/2015	--	8.20	--	91.80
		5/14/2015	--	8.18	--	91.82
		9/22/2015	--	8.43	--	91.57
		12/2/2015	--	8.29	--	91.71
		3/30/2016	--	7.92	--	92.08
		9/8/2016	--	9.55	--	90.45
		12/1/2016	--	8.96	--	91.04
		3/9/2017	--	8.09	--	91.91
		6/15/2017	--	8.54	--	91.46
		9/27/2017	--	9.97	--	90.03
		12/6/2017	--	9.25	--	90.75
		3/15/2018	--	8.91	--	91.09
		6/27/2018	--	9.78	--	90.22
		9/5/2018	--	10.43	--	89.57
		12/20/2018	--	9.97	--	90.03
		3/9/2019	--	9.33	--	90.67
		5/29/2019	--	8.82	--	91.18
		8/21/2019	--	10.53	--	89.47
		11/21/2019	--	10.41	--	89.59
		3/28/2020	--	9.81	--	90.19
		6/3/2020	--	10.09	--	89.91
		7/28/2020	--	11.03	--	88.97
		10/9/2020	--	11.46	--	88.54
		1/18/2021	--	10.86	--	89.14
		4/22/2021	--	10.49	--	89.51
		9/21/2021	--	11.80	--	88.20
		11/29/2021	--	11.43	--	88.57
MW-2	99.36	12/1/2016	--	8.57	--	90.79
		3/9/2017	--	7.73	--	91.63
		6/15/2017	--	8.27	--	91.09
		9/27/2017	--	9.70	--	89.66

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Well ID	Top of Casing Elevation (1)	Sample Date	Depth to PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
MW-2	99.36	12/6/2017	--	8.90	--	90.46
		3/15/2018	--	8.54	--	90.82
		6/27/2018	--	9.49	--	89.87
		9/5/2018	--	10.17	--	89.19
		12/20/2018	--	9.59	--	89.77
		3/9/2019	--	8.95	--	90.41
		5/29/2019	--	8.46	--	90.90
		8/21/2019	--	10.24	--	89.12
		11/21/2019	--	10.05	--	89.31
		3/27/2020	--	9.43	--	89.93
		6/3/2020	--	10.09	--	89.27
		7/27/2020	--	10.74	--	88.62
		10/9/2020	--	11.15	--	88.21
		1/18/2021	--	10.49	--	88.87
		4/22/2021	--	10.10	--	89.26
		9/21/2021	--	11.50	--	87.86
		11/19/2021	--	11.11	--	88.25
MW-3	99.59	12/1/2016	--	8.51	--	91.08
		3/9/2017	--	7.64	--	91.95
		6/15/2017	--	8.05	--	91.54
		9/27/2017	--	9.51	--	90.08
		12/6/2017	--	8.80	--	90.79
		3/15/2018	--	8.47	--	91.12
		6/27/2018	--	9.31	--	90.28
		9/5/2018	--	9.99	--	89.60
		12/20/2018	--	9.51	--	90.08
		3/9/2019	--	8.95	--	90.64
		5/29/2019	--	8.36	--	91.23
		8/21/2019	--	10.07	--	89.52
		11/20/2019	--	9.98	--	89.61
		3/27/2020	--	9.38	--	90.21
		6/2/2020	--	9.63	--	89.96
		7/27/2020	--	10.59	--	89.00
		10/9/2020	--	11.03	--	88.56
		1/18/2021	--	10.44	--	89.15

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Well ID	Top of Casing Elevation (1)	Sample Date	Depth to PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
MW-3	99.59	4/22/2021	--	10.07	--	89.52
		9/21/2021	--	11.40	--	88.19
		11/19/2021	--	11.08	--	88.51
RW-1	100.3	5/12/2014	--	7.80	--	92.50
		5/20/2014	--	7.85	--	92.45
		5/27/2014	7.89	7.90	0.01	92.41
		12/17/2014	8.33	8.72	0.39	91.89
		5/14/2015	--	7.99	--	92.31
		6/17/2015	7.96	7.98	0.02	92.34
		9/22/2015	8.57	8.72	0.15	91.70
		12/2/2015	8.17	8.19	0.02	92.13
		9/14/2016	9.11	10.10	0.99	90.99
		12/1/2016	--	--	--	Dry
		3/9/2017	--	8.01	--	92.29
		6/15/2017	8.35	8.50	0.15	91.92
		9/27/2017	9.60	10.82	1.22	90.46
		12/6/2017	9.09	9.59	0.50	91.11
		3/15/2018	8.83	8.98	0.15	91.44
		6/27/2018	9.52	10.11	0.59	90.66
		9/5/2018	10.18	11.01	0.83	89.95
		1/4/2019	9.77	10.12	0.35	90.46
		3/9/2019	--	9.32	--	90.98
		5/28/2019	--	8.72	--	91.58
		8/21/2019	--	--	--	--
		11/12/2019	--	--	--	--
		3/31/2020	--	9.81	--	90.49
		6/1/2020	--	9.97	--	90.33
		7/29/2020	10.87	11.42	0.55	89.32
		10/9/2020	--	11.36	--	88.94
		1/15/2021	--	10.87	--	89.43
		4/21/2021	--	10.49	--	89.81
		9/21/2021	11.79	11.82	0.03	88.50
		11/29/2021	--	11.43	--	88.87
RW-2	99.96	5/12/2014	7.44	7.45	0.01	92.52
		5/20/2014	7.66	7.67	0.01	92.30

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RW-2	99.96	5/27/2014	--	7.56	--	92.40
		12/17/2014	7.98	8.39	0.41	91.90
		5/14/2015	--	7.65	--	92.31
		6/17/2015	--	7.61	--	92.35
		9/22/2015	--	8.25	--	91.71
		12/2/2015	--	7.82	--	92.14
		9/14/2016	8.77	9.68	0.91	91.01
		12/1/2016	8.51	8.65	--	91.31
		3/9/2017	--	7.74	--	92.22
		6/15/2017	--	8.03	--	91.93
		9/27/2017	9.33	10.14	0.81	90.47
		12/6/2017	8.72	9.22	0.50	91.14
		3/15/2018	8.46	8.55	0.09	91.48
		6/27/2017	9.25	9.59	0.34	90.64
		9/5/2018	9.90	10.36	0.46	89.97
		1/4/2019	--	9.51	--	90.45
		3/9/2019	--	8.95	--	91.01
		5/28/2019	--	8.39	--	91.57
		8/21/2019	--	10.08	--	89.88
		11/12/2019	--	10.08	--	89.88
		3/31/2020	--	9.43	--	90.53
		6/1/2020	--	9.66	--	90.30
		7/29/2020	--	10.60	--	89.36
		10/12/2020	--	11.06	--	88.90
		1/15/2021	--	10.52	--	89.44
		4/21/2021	--	10.12	--	89.84
		9/21/2021	--	11.50	--	88.46
		11/29/2021	--	11.13	--	88.83
RW-3	99.84	5/12/2014	--	7.46	--	92.38
		5/20/2014	--	7.66	--	92.18
		5/27/2014	--	7.59	--	92.25
		8/26/2014	8.70	10.43	1.73	90.79
		11/11/2014	8.22	8.64	0.42	91.54
		12/17/2014	7.94	8.55	0.61	91.78
		5/14/2015	7.63	7.63	0.00	92.21

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RW-3	99.84	6/17/2015	7.58	7.76	0.18	92.22
		9/22/2015	8.20	8.45	0.25	91.59
		12/2/2015	7.74	8.11	0.37	92.03
		9/14/2016	8.71	9.94	1.23	90.88
		12/1/2016	8.46	8.98	0.52	91.28
		3/9/2017	7.70	7.73	0.03	92.13
		6/15/2017	--	7.95	--	91.89
		9/27/2017	9.22	10.50	1.28	90.36
		12/6/2017	8.69	9.28	0.59	91.03
		3/15/2018	8.40	8.77	0.37	91.37
		6/27/2018	9.14	9.73	0.59	90.58
		9/5/2018	9.69	10.94	1.25	89.90
		1/4/2019	--	9.39	--	90.45
		3/9/2019	--	8.90	--	90.94
		5/28/2019	--	8.39	--	91.45
		8/21/2019	--	--	--	--
		11/12/2019	--	--	--	--
		3/31/2020	--	9.38	--	90.46
		6/2/2020	--	9.56	--	90.28
		7/29/2020	10.40	10.41	0.01	89.44
		10/12/2020	--	10.67	--	89.17
		1/15/2021	10.48	10.50	0.02	89.36
		4/21/2021	--	10.09	--	89.75
		9/21/2021	11.35	11.45	0.10	88.47
		11/30/2021	--	11.07	--	88.77
RW-4	99.67	5/12/2014	7.29	7.30	0.01	92.38
		5/20/2014	7.26	8.12	0.86	92.24
		5/27/2014	7.22	7.98	0.76	92.30
		8/25/2014	8.47	9.80	1.33	90.93
		11/10/2014	7.94	8.15	0.21	91.69
		12/17/2014	7.84	8.10	0.26	91.78
		4/20/2015	7.36	7.61	0.25	92.26
		5/14/2015	--	7.46	--	92.21
		6/17/2015	7.43	7.48	0.05	92.23
		9/22/2015	8.04	8.17	0.13	91.60

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Well ID	Top of Casing Elevation (1)	Sample Date	Depth to PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
RW-4	99.67	12/2/2015	7.65	7.70	0.05	92.01
		9/14/2016	8.53	9.75	1.22	90.90
		12/1/2016	8.46	8.66	0.20	91.17
		3/9/2017	7.47	7.54	0.07	92.19
		6/15/2017	--	7.69	--	91.98
		9/27/2017	9.04	10.33	1.29	90.37
		12/6/2017	8.59	8.82	0.23	91.03
		3/15/2018	8.29	8.30	0.01	91.38
		6/27/2018	8.91	9.86	0.95	90.57
		9/5/2018	9.50	10.59	1.09	89.95
		1/4/2019	--	9.19	--	90.48
		3/9/2019	--	8.70	--	90.97
		5/28/2019	--	8.15	--	91.52
		8/21/2019	--	--	--	--
		11/12/2019	--	--	--	--
		3/31/2020	--	9.22	--	90.45
		6/2/2020	--	9.30	--	90.37
		7/29/2020	--	10.21	--	89.46
		10/12/2020	--	10.67	--	89.00
		1/15/2021	10.20	10.22	0.02	89.47
		4/21/2021	--	9.91	--	89.76
		9/21/2021	11.10	11.90	0.80	88.41
		11/30/2021	--	10.69	--	88.98

Notes:

(1) - surface elevation based on an arbitrary datum of 100 feet based on top of casing of MW-1

(2) - when PSH is present, groundwater elevation is adjusted using a PSH density correction factor of 0.8

bgs - below ground surface

BTOC - below top of casing

ft = feet

-- - Not measured/Not detected

PSH - phase separated hydrocarbons

TABLE 2
FIELD PARAMETER RESULTS

STATE COM J #6
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample Date	Temperature (°C)	pH	TDS (mg/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-1	5/14/2015	11.68	7.52	3,221	4,976	--	-205.0	1.50
	5/14/2015	11.32	7.35	3,309	5,096	2.83	-205.0	1.75
	5/14/2015	11.34	7.28	3,341	5,139	1.66	-204.0	2.25
	9/22/2015	16.41	7.01	1,164	1,792	9.11	-117.5	3.00
	9/22/2015	16.42	6.98	1,177	1,811	2.96	-117.6	3.50
	9/22/2015	16.43	6.99	1,152	1,771	2.48	-117.0	4.00
	3/30/2016	10.36	7.48	1,200	1,920	5.62	-104.0	4.25
	9/8/2016	16.10	7.10	877	1,353	1.52	-91.1	3.50
	12/1/2016	12.55	7.49	--	1,664	2.64	-110.6	3.50
	3/9/2017	8.45	7.31	1,403	2,157	1.81	-158.2	4.25
	6/15/2017	11.52	7.27	1,390	2,125	0.74	-203.1	4.50
	9/27/2017	15.35	6.93	--	1,790	--	--	3.50
	12/6/2017	12.14	7.00	1,318	2,022	2.15	-69.5	3.50
	3/15/2018	9.90	7.35	--	1,790	0.62	-112.6	3.50
	6/27/2018	16.73	6.97	--	1,959	1.04	-96.4	3.25
	9/5/2018	17.10	7.46	--	1,898	4.17	-109.1	3.00
	3/9/2019	11.20	7.16	1,020	2,050	--	-24.3	3.00
	5/29/2019	15.50	7.01	1,060	2,120	--	-17.5	3.00
	8/21/2019	23.90	6.74	1,070	2,140	--	-15.4	3.00
	11/20/2019	10.30	6.35	920	1,830	--	-21.9	--
	3/28/2020	10.40	6.49	1,000	1,980	5.13	-9.3	--
	6/3/2020	20.40	6.60	--	2,020	1.00	-7.0	--
	7/28/2020	20.70	6.79	1,070	2,140	1.03	-9.4	--
	10/9/2020	20.60	6.55	1,010	2,020	2.68	-1.2	--
	1/18/2021	12.30	6.58	960	1,910	0.98	7.4	--
	4/22/2021	13.20	6.70	980	1,970	8.66	4.3	--
	9/21/2021	18.00	6.99	--	5,750	--	--	2.00
	11/29/2021	11.70	6.23	--	1,850	--	--	2.25
MW-2	12/1/2016	9.75	8.11	--	1,980	6.29	-128.8	4.25
	3/9/2017	7.58	7.24	1,812	2,788	1.72	-144.7	4.75
	6/15/2017	10.24	7.64	1,494	2,298	4.09	-148.3	4.50
	9/27/2017	13.76	7.12	--	2,009	--	--	4.00
	12/6/2017	11.09	6.96	1,394	2,145	4.22	-63.1	4.00
	3/15/2018	8.19	7.32	--	2,302	0.13	-75.6	4.25
	6/27/2018	12.49	7.17	--	2,104	0.57	-41.9	4.00
	9/5/2018	16.74	7.52	--	1,954	4.76	-13.1	3.50
	3/9/2019	9.80	7.24	1,090	2,180	--	-27.9	3.50
	5/29/2019	14.40	7.11	1,160	2,330	--	-17.4	3.50
	8/21/2019	22.40	7.26	1,110	2,220	--	-15.1	--
	11/20/2019	11.20	6.32	1,030	2,530	--	-26.6	--
	3/27/2020	9.90	6.92	1,110	2,220	9.36	-15.8	--
	6/3/2020	18.20	6.31	--	2,180	1.11	-17.4	--
	7/27/2020	24.20	6.99	1,050	2,100	1.77	-18.6	--
	10/9/2020	18.20	6.51	1,010	2,010	3.33	-11.0	--
	1/18/2021	9.10	6.85	960	1,940	1.23	-1.4	--
	4/22/2021	11.80	7.04	1,000	1,980	0.39	-2.7	--
	9/21/2021	15.70	6.90	--	6,060	--	--	3.00
	11/19/2021	13.10	6.53	--	1,920	--	--	3.00

TABLE 2
FIELD PARAMETER RESULTS

STATE COM J #6
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample Date	Temperature (°C)	pH	TDS (mg/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-3	12/1/2016	12.09	7.39	--	2,200	2.30	-53.7	4.50
	3/9/2017	7.48	7.42	1,709	2,614	3.58	-124.2	5.00
	6/15/2017	10.06	7.41	1,407	2,164	2.53	-149.4	4.75
	9/27/2017	12.76	7.39	--	1,914	--	--	4.00
	12/6/2017	10.06	6.93	1,339	2,060	1.74	-58.2	4.25
	3/15/2018	8.10	7.23	--	2,142	0.75	18.0	--
	6/27/2018	12.49	7.17	--	2,104	0.57	-41.9	4.00
	9/5/2018	14.22	7.46	--	2,064	1.17	-4.3	4.00
	3/9/2019	7.60	7.28	1,130	2,260	--	-20.6	3.00
	5/29/2019	13.10	7.03	1,300	2,590	--	-15.6	3.00
	8/21/2019	7.05	--	1,130	2,250	--	-26.0	--
	11/20/2019	12.80	6.31	1,300	2,390	--	-26.6	--
	3/27/2020	10.10	6.54	1,140	2,300	8.22	-16.7	--
	6/2/2020	19.50	6.35	1,130	2,270	1.13	-11.9	--
	7/27/2020	19.40	6.47	1,110	2,380	1.30	-14.7	--
	10/9/2020	16.90	6.55	1,030	1,910	3.46	-17.6	--
	1/18/2021	10.40	6.92	1,000	2,000	1.19	-13.2	--
	4/22/2021	13.30	7.00	1,060	2,130	7.72	-11.2	--
	9/21/2021	13.50	6.86	--	6,370	--	--	3.00
	11/19/2021	14.20	6.46	--	2,050	--	--	3.00
RW-1	3/31/2020	14.40	6.19	1,010	2,080	6.10	2.8	--
	6/1/2020	19.60	6.12	--	2,000	0.98	-10.1	--
	7/29/2020	--	--	--	--	--	--	0.28
	10/12/2020	16.20	6.70	930	1,850	3.91	-28.9	0.13
	1/15/2021	10.20	6.77	920	1,840	1.06	-37.7	--
	4/21/2021	13.40	6.71	1,000	2,000	--	-27.3	--
	9/21/2021	--	--	--	--	--	--	--
	11/29/2021	14.50	6.73	--	1,690	--	--	10.50
RW-2	3/31/2020	13.50	6.35	1,060	2,120	6.24	2.3	--
	6/2/2020	17.80	--	1,050	2,090	1.05	-1.3	--
	7/29/2020	19.40	6.72	1,070	2,120	1.13	-13.3	--
	10/12/2020	17.40	6.73	980	1,970	3.99	-6.0	0.09
	1/15/2021	10.40	7.02	960	1,930	0.99	-1.3	--
	4/21/2021	13.20	6.86	1,000	1,990	--	1.8	--
	9/21/2021	20.20	7.09	--	5,450	--	--	12.90
	11/29/2021	14.40	6.62	--	1,870	--	--	13.50
RW-3	3/31/2020	14.10	6.16	1,080	2,130	7.24	6.4	--
	6/2/2020	19.50	6.38	--	2,130	1.06	2.6	--
	7/29/2020	--	--	--	--	--	--	0.61
	10/12/2020	21.90	6.49	970	1,930	3.64	12.3	0.55
	1/15/2021	13.30	6.72	950	1,900	0.99	12.3	--
	4/21/2021	15.20	6.67	970	1,960	8.78	9.8	--
	9/21/2021	--	--	--	--	--	--	--
	11/30/2021	15.40	6.57	--	1,530	--	--	10.50

TABLE 2
FIELD PARAMETER RESULTS

STATE COM J #6
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample Date	Temperature (°C)	pH	TDS (mg/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
RW-4	3/31/2020	13.40	6.28	970	1,940	6.98	-21.5	--
	6/2/2020	--	--	--	--	--	--	--
	7/29/2020	--	--	--	--	--	--	0.03
	10/12/2020	20.90	6.68	950	1,910	2.96	-34.2	0.55
	1/15/2021	11.20	6.68	940	1,880	1.02	-38.4	--
	4/21/2021	12.40	6.85	930	1,860	1.30	-35.2	--
	9/21/2021	--	--	--	--	--	--	--
	11/30/2021	16.20	6.53	-	1,480	--	--	11.50

Notes:

mg/L - milligrams per liter

uS/cm - microsiemens per centimeter

°C - degrees Celcius

DO - dissolved oxygen

mV - millivolts

ORP - oxidation-reduction potential

TDS - total dissolved solids

-- - data not collected

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

STATE COM J #6
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Naphthalenes (mg/L)
NMWQCC Standards			0.005	1.00	0.70	0.62	0.03
MW-1	GW-081773-051214-MW-1	5/12/2014	0.0134	0.0304	0.0152	0.228	0.0017
	GW-081773-092314-CB-MW-1	9/23/2014	0.01	< 0.001	0.0033	0.0233	< 0.0005
	GW-081773-121714-JW-MW-1	12/17/2014	0.0252	< 0.001	0.0121	0.0488	0.00085
	GW-081773-051415-CB-MW-1	5/14/2015	0.0041	< 0.001	0.0056	0.0121	< 0.00045
	GW-081773-092215-CB-MW-1	9/22/2015	0.0463	< 0.001	0.0214	0.115	0.0012
	GW-081773-090816-SP-MW-1	9/8/2016	0.0121	< 0.001	0.0124	0.0817	0.001
	GW-081773-120116-JK-MW-1	12/1/2016	<0.001	<0.001	<0.001	<0.003	<0.0005
	GW-081773-031917-CNMW-1	3/9/2017	0.0028	<0.001	<0.001	<0.003	--
	WT-081773-06152017-CN-MW1	6/15/2017	0.0431	<0.001	0.0022	0.0038	--
	GW-11145955-092717-SP-MW-1	9/27/2017	0.0067	<0.001	0.0056	0.0338	--
	GW-11145955-120617-SP-MW-1	12/6/2017	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-031518-JW-MW-1	3/15/2018	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-062718-CM-MW-1	6/27/2018	0.0043	<0.001	0.005	0.0123	--
	GW-11145955-090518-CN-MW-1	9/5/2018	<0.001	<0.001	<0.001	<0.003	--
	MW-1	12/20/2018	<0.001	<0.001	<0.001	<0.003	--
	MW-1	3/15/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-1	5/29/2019	0.0083	<0.001	0.0017	0.0051	<0.005
	MW-1	8/21/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-1	11/21/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-1	3/31/2020	<0.001	<0.001	<0.001	<0.003	<0.00025
	MW-1	6/3/2020	<0.001	<0.001	<0.001	<0.003	--
	MW-1	7/28/2020	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-1	10/9/2020	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-1	1/18/2021	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-1	4/22/2021	<0.001	<0.001	<0.001	<0.0015	<0.002
	MW-1	9/21/2021	<0.001	<0.001	<0.001	<0.0015	<0.002
	MW-1	11/29/2021	<0.001	<0.001	<0.001	<0.0015	<0.002
MW-2	GW-081773-092616-JW-MW-2	9/26/2016	<0.001	<0.001	<0.001	<0.003	<0.0005
	GW-081773-120116-JK-MW-2	12/1/2016	<0.001	<0.001	<0.001	<0.003	<0.0005
	GW-081773-031917-CNMW-2	3/9/2017	<0.001	<0.001	<0.001	<0.003	--
	WT-081773-061517-CNMW-2	6/15/2017	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-092717-SP-MW-2	9/27/2017	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-120617-SP-MW-2	12/6/2017	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-031518-JW-MW-2	3/15/2018	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-062718-CM-MW-2	6/27/2018	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-090518-CN-MW-2	9/5/2018	<0.001	<0.001	<0.001	<0.003	--
	MW-2	12/20/2018	<0.001	<0.001	<0.001	<0.003	--
	MW-2	3/9/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-2	5/29/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-2	8/21/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-2	11/21/2019	<0.001	<0.001	<0.001	<0.003	--
	MW-2	3/31/2020	<0.001	<0.001	<0.001	<0.003	<0.00025
	MW-2	6/3/2020	<0.001	<0.001	<0.001	<0.003	--
	MW-2	7/27/2020	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-2	10/9/2020	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-2	1/18/2021	<0.001	<0.001	<0.001	<0.003	<0.005
MW-3	GW-081773-0916/2016-JW-MW2	9/26/2016	<0.001	<0.001	<0.001	<0.003	<0.0005
	GW-081773-120116-JK-MW-3	12/1/2016	<0.001	<0.001	<0.001	<0.003	<0.0005
	GW-081773-031917-CNMW-3	3/9/2017	<0.001	<0.001	<0.001	<0.003	--
	WT-081773-061517-CN-MW3	6/15/2017	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-092717-SP-MW-3	9/27/2017	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-120617-SP-MW-3	12/6/2017	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-031518-JW-MW-3	3/15/2018	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-062718-CM-MW-3	6/27/2018	<0.001	<0.001	<0.001	<0.003	--
	GW-11145955-090518-CN-MW-2	9/5/2018	<0.001	<0.001	<0.001	<0.003	--
	MW-3	12/20/2018	<0.001	<0.001	<0.001	<0.003	--
	MW-3	3/9/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-3	5/29/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-3	8/21/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-3	11/20/2019	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-3	3/31/2020	<0.001	<0.001	<0.001	<0.003	<0.00025
	MW-3	6/2/2020	<0.001	<0.001	<0.001	<0.003	--
	MW-3	7/27/2020	<0.001	<0.001	<0.001	<0.003	<0.005

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

STATE COM J #6
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Naphthalenes (mg/L)
NMWQCC Standards			0.005	1.00	0.70	0.62	0.03
MW-3	MW-3	10/9/2020	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-3	1/18/2021	<0.001	<0.001	<0.001	<0.003	<0.005
	MW-3	4/22/2021	<0.001	<0.001	<0.001	<0.0015	<0.002
	MW-3	9/21/2021	<0.001	<0.001	<0.001	<0.0015	<0.002
	MW-3	11/19/2021	<0.001	<0.001	<0.001	<0.0015	<0.002
RW-1	GW-081773-051214-RW-1	5/12/2014	1.88	6.27	0.567	8.96	0.109
	GW-081773-051415-CB-RW-1	5/14/2015	0.688	0.764	0.388	5.65	0.121
	RW-1	3/9/2019	--	--	--	--	--
	RW-1	5/28/2019	0.349	<0.025	0.240	5.76	0.133
	RW-1	8/21/2019	Not Sampled - PSH Present				
	RW-1	11/20/2019	Not Sampled - PSH Present				
	RW-1	3/31/2020	0.151	<0.050	0.499	6.77	0.291
	RW-1	6/3/2020	0.156	<0.050	0.511	8.73	--
	RW-1	7/29/2020	Not Sampled - PSH Present				
	RW-1	10/12/2020	0.121	<0.050	1.07	18.1	0.956
	RW-1	1/18/2021	0.0573	<0.050	0.233	3.30	<0.25
	RW-1	4/21/2021	0.033	<0.010	0.180	2.30	1.052
	RW-1	9/21/2021	Not Sampled - PSH Present				
	RW-1	11/29/2021	0.014	<0.008	0.180	1.70	0.166
RW-2	RW-2	3/9/2019	--	--	--	--	--
	RW-2	5/28/2019	0.0404	<0.01	0.096	1.05	0.056
	RW-2	9/4/2019	0.0083	<0.001	0.045	0.376	0.064
	RW-2	11/20/2019	0.0026	<0.01	0.0280	0.355	0.005
	RW-2	3/31/2020	0.003	<0.001	0.0385	0.734	0.029
	RW-2	6/1/2020	<0.010	<0.010	0.0324	0.298	--
	RW-2	7/29/2020	<0.002	<0.002	0.0095	0.109	0.013
	RW-2	10/12/2020	<0.001	<0.001	0.0016	0.0147	<0.500
	RW-2	1/18/2021	<0.001	<0.001	0.0024	0.00929	<0.005
	RW-2	4/21/2021	<0.001	<0.001	0.0023	0.0099	<0.002
	RW-2	9/21/2021	<0.001	<0.001	<0.001	<0.0015	<0.002
	RW-2	11/29/2021	<0.001	<0.001	<0.001	<0.0015	<0.002
RW-3	RW-3	5/12/2014	0.416	0.889	0.153	4.58	0.0596
	RW-3	3/9/2019	--	--	--	--	--
	RW-3	5/28/2019	0.386	<0.010	0.191	1.80	<0.500
	RW-3	8/21/2019	Not Sampled - PSH Present				
	RW-3	11/20/2019	Not Sampled - PSH Present				
	RW-3	3/31/2020	0.414	<0.100 D	0.385	6.76	0.395
	RW-3	6/2/2020	0.703	<0.100	2.490	35.7	--
	RW-3	7/29/2020	Not Sampled - PSH Present				
	RW-3	10/12/2020	1.28	<0.100	0.466	7.09	<0.500
	RW-3	1/18/2021	0.160	<0.100	0.181	2.98	<0.500
	RW-3	4/21/2021	0.110	<0.005	0.180	2.30	0.288
	RW-3	9/21/2021	Not Sampled - PSH Present				
	RW-3	11/30/2021	0.025	<0.005	0.047	0.66	0.176
RW-4	RW-4	3/9/2019	--	--	--	--	--
	RW-4	5/28/2019	0.321	<0.05	0.071	5.78	<0.250
	RW-4	8/21/2019	Not Sampled - PSH Present				
	RW-4	11/20/2019	Not Sampled - PSH Present				
	RW-4	3/31/2020	0.152	<0.100 D	0.300	5.74	0.385
	RW-4	6/2/2020	Not Sampled - PSH Present				
	RW-4	7/29/2020	Not Sampled - PSH Present				
	RW-4	10/12/2020	0.286	<0.100	3.660	4.88	3.05
	RW-4	1/18/2021	<0.25	<0.25	1.040	15.8	<1.25
	RW-4	4/22/2021	0.067	<0.01	0.250	2.90	0.253
	RW-4	9/21/2021	Not Sampled - PSH Present				
	RW-4	11/30/2021	0.044	<0.01	0.370	4.60	0.600

Notes:

D - sample diluted due to matrix interference

mg/L - milligrams per liter

Naphthalenes = this standard applies to the sum of naphthalene and monomethylnaphthalene isomers (1-methyl, 2-methyl)

NMWQCC - New Mexico Water Quality Control Commission

PSH - phase separated hydrocarbon

<0.037 - indicates result less than the stated laboratory reporting limit (PQL)

BOLD - indicates concentration exceeds the NNEPA standard

-- - not analyzed

ENCLOSURE A – ANALYTICAL LABORATORY REPORT



ANALYTICAL REPORT

January 27, 2021

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc**HilCorp-Farmington, NM**

Sample Delivery Group: L1308488
Samples Received: 01/20/2021
Project Number:
Description: State Com J6
Site: STATE COM J #6
Report To: Kurt Hoekstra
382 Road 3100
Aztec, NM 87401

Entire Report Reviewed By:

Olivia Studebaker
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
MW-1 L1308488-01	5	
MW-2 L1308488-02	6	⁴ Cn
MW-3 L1308488-03	7	⁵ Sr
RW-1 L1308488-04	8	
RW-2 L1308488-05	9	⁶ Qc
RW-3 L1308488-06	10	
RW-4 L1308488-07	11	⁷ Gl
Qc: Quality Control Summary	12	⁸ Al
Volatile Organic Compounds (GC/MS) by Method 8260B	12	
Gl: Glossary of Terms	13	⁹ Sc
Al: Accreditations & Locations	14	
Sc: Sample Chain of Custody	15	

MW-1 L1308488-01 GW

				Collected by Kurt	Collected date/time 01/18/21 13:53	Received date/time 01/20/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1609298	1	01/21/21 16:34	01/21/21 16:34	ACG	Mt. Juliet, TN

1
Cp2
Tc3
Ss

MW-2 L1308488-02 GW

				Collected by Kurt	Collected date/time 01/18/21 11:31	Received date/time 01/20/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1609298	1	01/21/21 16:58	01/21/21 16:58	ACG	Mt. Juliet, TN

4
Cn5
Sr

MW-3 L1308488-03 GW

				Collected by Kurt	Collected date/time 01/18/21 12:44	Received date/time 01/20/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1609298	1	01/21/21 17:21	01/21/21 17:21	ACG	Mt. Juliet, TN

6
Qc7
Gl

RW-1 L1308488-04 GW

				Collected by Kurt	Collected date/time 01/18/21 11:00	Received date/time 01/20/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1609298	50	01/21/21 18:55	01/21/21 18:55	ACG	Mt. Juliet, TN

8
Al9
Sc

RW-2 L1308488-05 GW

				Collected by Kurt	Collected date/time 01/18/21 12:26	Received date/time 01/20/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1609298	1	01/21/21 17:45	01/21/21 17:45	ACG	Mt. Juliet, TN

RW-3 L1308488-06 GW

				Collected by Kurt	Collected date/time 01/18/21 13:42	Received date/time 01/20/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1609298	100	01/21/21 19:19	01/21/21 19:19	ACG	Mt. Juliet, TN

RW-4 L1308488-07 GW

				Collected by Kurt	Collected date/time 01/18/21 10:09	Received date/time 01/20/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1609298	250	01/21/21 19:42	01/21/21 19:42	ACG	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Olivia Studebaker
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc

Collected date/time: 01/18/21 13:53

L1308488

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	01/21/2021 16:34	WG1609298
Ethylbenzene	ND		0.00100	1	01/21/2021 16:34	WG1609298
1-Methylnaphthalene	ND	J4	0.0100	1	01/21/2021 16:34	WG1609298
2-Methylnaphthalene	ND		0.0100	1	01/21/2021 16:34	WG1609298
Naphthalene	ND		0.00500	1	01/21/2021 16:34	WG1609298
Toluene	ND		0.00100	1	01/21/2021 16:34	WG1609298
Xylenes, Total	ND		0.00300	1	01/21/2021 16:34	WG1609298
(S) Toluene-d8	114		80.0-120		01/21/2021 16:34	WG1609298
(S) 4-Bromofluorobenzene	102		77.0-126		01/21/2021 16:34	WG1609298
(S) 1,2-Dichloroethane-d4	94.2		70.0-130		01/21/2021 16:34	WG1609298

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Collected date/time: 01/18/21 11:31

L1308488

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	01/21/2021 16:58	WG1609298
Ethylbenzene	ND		0.00100	1	01/21/2021 16:58	WG1609298
1-Methylnaphthalene	ND	J4	0.0100	1	01/21/2021 16:58	WG1609298
2-Methylnaphthalene	ND		0.0100	1	01/21/2021 16:58	WG1609298
Naphthalene	ND		0.00500	1	01/21/2021 16:58	WG1609298
Toluene	ND		0.00100	1	01/21/2021 16:58	WG1609298
Xylenes, Total	0.00339		0.00300	1	01/21/2021 16:58	WG1609298
(S) Toluene-d8	115		80.0-120		01/21/2021 16:58	WG1609298
(S) 4-Bromofluorobenzene	104		77.0-126		01/21/2021 16:58	WG1609298
(S) 1,2-Dichloroethane-d4	95.7		70.0-130		01/21/2021 16:58	WG1609298

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Collected date/time: 01/18/21 12:44

L1308488

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	01/21/2021 17:21	WG1609298
Ethylbenzene	ND		0.00100	1	01/21/2021 17:21	WG1609298
1-Methylnaphthalene	ND	J4	0.0100	1	01/21/2021 17:21	WG1609298
2-Methylnaphthalene	ND		0.0100	1	01/21/2021 17:21	WG1609298
Naphthalene	ND		0.00500	1	01/21/2021 17:21	WG1609298
Toluene	ND		0.00100	1	01/21/2021 17:21	WG1609298
Xylenes, Total	ND		0.00300	1	01/21/2021 17:21	WG1609298
(S) Toluene-d8	114		80.0-120		01/21/2021 17:21	WG1609298
(S) 4-Bromofluorobenzene	104		77.0-126		01/21/2021 17:21	WG1609298
(S) 1,2-Dichloroethane-d4	93.8		70.0-130		01/21/2021 17:21	WG1609298

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Collected date/time: 01/18/21 11:00

L1308488

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0573		0.0500	50	01/21/2021 18:55	WG1609298
Ethylbenzene	0.233		0.0500	50	01/21/2021 18:55	WG1609298
1-Methylnaphthalene	ND	J4	0.500	50	01/21/2021 18:55	WG1609298
2-Methylnaphthalene	ND		0.500	50	01/21/2021 18:55	WG1609298
Naphthalene	ND		0.250	50	01/21/2021 18:55	WG1609298
Toluene	ND		0.0500	50	01/21/2021 18:55	WG1609298
Xylenes, Total	3.30		0.150	50	01/21/2021 18:55	WG1609298
(S) Toluene-d8	113		80.0-120		01/21/2021 18:55	WG1609298
(S) 4-Bromofluorobenzene	103		77.0-126		01/21/2021 18:55	WG1609298
(S) 1,2-Dichloroethane-d4	94.4		70.0-130		01/21/2021 18:55	WG1609298

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Collected date/time: 01/18/21 12:26

L1308488

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	01/21/2021 17:45	WG1609298
Ethylbenzene	0.00244		0.00100	1	01/21/2021 17:45	WG1609298
1-Methylnaphthalene	ND	J4	0.0100	1	01/21/2021 17:45	WG1609298
2-Methylnaphthalene	ND		0.0100	1	01/21/2021 17:45	WG1609298
Naphthalene	ND		0.00500	1	01/21/2021 17:45	WG1609298
Toluene	ND		0.00100	1	01/21/2021 17:45	WG1609298
Xylenes, Total	0.00929		0.00300	1	01/21/2021 17:45	WG1609298
(S) Toluene-d8	103		80.0-120		01/21/2021 17:45	WG1609298
(S) 4-Bromofluorobenzene	98.9		77.0-126		01/21/2021 17:45	WG1609298
(S) 1,2-Dichloroethane-d4	92.0		70.0-130		01/21/2021 17:45	WG1609298

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Collected date/time: 01/18/21 13:42

L1308488

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.160		0.100	100	01/21/2021 19:19	WG1609298
Ethylbenzene	0.181		0.100	100	01/21/2021 19:19	WG1609298
1-Methylnaphthalene	ND	J4	1.00	100	01/21/2021 19:19	WG1609298
2-Methylnaphthalene	ND		1.00	100	01/21/2021 19:19	WG1609298
Naphthalene	ND		0.500	100	01/21/2021 19:19	WG1609298
Toluene	ND		0.100	100	01/21/2021 19:19	WG1609298
Xylenes, Total	2.98		0.300	100	01/21/2021 19:19	WG1609298
(S) Toluene-d8	114		80.0-120		01/21/2021 19:19	WG1609298
(S) 4-Bromofluorobenzene	103		77.0-126		01/21/2021 19:19	WG1609298
(S) 1,2-Dichloroethane-d4	95.1		70.0-130		01/21/2021 19:19	WG1609298

- 1Cp
- 2Tc
- 3Ss
- 4Cn
- 5Sr
- 6Qc
- 7Gl
- 8Al
- 9Sc

Collected date/time: 01/18/21 10:09

L1308488

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.250	250	01/21/2021 19:42	WG1609298
Ethylbenzene	1.04		0.250	250	01/21/2021 19:42	WG1609298
1-Methylnaphthalene	ND	J4	2.50	250	01/21/2021 19:42	WG1609298
2-Methylnaphthalene	ND		2.50	250	01/21/2021 19:42	WG1609298
Naphthalene	ND		1.25	250	01/21/2021 19:42	WG1609298
Toluene	ND		0.250	250	01/21/2021 19:42	WG1609298
Xylenes, Total	15.8		0.750	250	01/21/2021 19:42	WG1609298
(S) Toluene-d8	111		80.0-120		01/21/2021 19:42	WG1609298
(S) 4-Bromofluorobenzene	103		77.0-126		01/21/2021 19:42	WG1609298
(S) 1,2-Dichloroethane-d4	93.5		70.0-130		01/21/2021 19:42	WG1609298

Sample Narrative:

L1308488-07 WG1609298: Non-target compounds too high to run at a lower dilution.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

[L1308488-01,02,03,04,05,06,07](#)

Method Blank (MB)

(MB) R3614819-2 01/21/21 11:47

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Ethylbenzene	U		0.000137	0.00100
1-Methylnaphthalene	U		0.00730	0.0100
2-Methylnaphthalene	U		0.00718	0.0100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	115			80.0-120
(S) 4-Bromofluorobenzene	103			77.0-126
(S) 1,2-Dichloroethane-d4	93.6			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3614819-1 01/21/21 10:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00509	102	70.0-123	
Ethylbenzene	0.00500	0.00535	107	79.0-123	
1-Methylnaphthalene	0.00500	0.00848	170	14.0-154	J4
2-Methylnaphthalene	0.00500	0.00537	107	15.0-159	
Naphthalene	0.00500	0.00551	110	54.0-135	
Toluene	0.00500	0.00556	111	79.0-120	
Xylenes, Total	0.0150	0.0162	108	79.0-123	
(S) Toluene-d8			115	80.0-120	
(S) 4-Bromofluorobenzene			104	77.0-126	
(S) 1,2-Dichloroethane-d4			97.2	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

QualifierDescription

J4	The associated batch QC was outside the established quality control range for accuracy.
----	---

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN, 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

Pace Analytical National 1313 Point Mallard Parkway SE Suite B Decatur, AL, 35601

Alabama	40160
ANSI National Accreditation Board	L2239

Pace Analytical National 660 Bercut Dr. Ste. C Sacramento, CA, 95811

California	2961	Oregon	CA300002
Minnesota	006-999-465	Washington	C926
North Dakota	R-214		

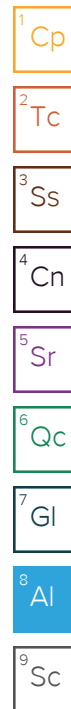
Pace Analytical National 6000 South Eastern Avenue Ste 9A Las Vegas, NV, 89119

Nevada	NV009412021-1
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Pace Analytical National 1606 E. Brazos Street Suite D Victoria, TX, 77901

Texas	T104704328-20-18
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¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable





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

April 29, 2021

Mitch Killough
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: State Com J6

OrderNo.: 2104A35

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 7 sample(s) on 4/23/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2104A35

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: MW-1

Project: State Com J6

Collection Date: 4/22/2021 2:25:00 PM

Lab ID: 2104A35-001

Matrix: AQUEOUS

Received Date: 4/23/2021 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	1.0		µg/L	1	4/24/2021 4:28:12 AM	B76934
Toluene	ND	1.0		µg/L	1	4/24/2021 4:28:12 AM	B76934
Ethylbenzene	ND	1.0		µg/L	1	4/24/2021 4:28:12 AM	B76934
Naphthalene	ND	2.0		µg/L	1	4/24/2021 4:28:12 AM	B76934
1-Methylnaphthalene	ND	4.0		µg/L	1	4/24/2021 4:28:12 AM	B76934
2-Methylnaphthalene	ND	4.0		µg/L	1	4/24/2021 4:28:12 AM	B76934
Xylenes, Total	ND	1.5		µg/L	1	4/24/2021 4:28:12 AM	B76934
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%Rec	1	4/24/2021 4:28:12 AM	B76934
Surr: 4-Bromofluorobenzene	95.8	70-130		%Rec	1	4/24/2021 4:28:12 AM	B76934
Surr: Dibromofluoromethane	103	70-130		%Rec	1	4/24/2021 4:28:12 AM	B76934
Surr: Toluene-d8	96.5	70-130		%Rec	1	4/24/2021 4:28:12 AM	B76934

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

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

Page 1 of 9

Analytical Report

Lab Order 2104A35

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: MW-3

Project: State Com J6

Collection Date: 4/22/2021 1:05:00 PM

Lab ID: 2104A35-003

Matrix: AQUEOUS

Received Date: 4/23/2021 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	1.0		µg/L	1	4/24/2021 5:25:20 AM	B76934
Toluene	ND	1.0		µg/L	1	4/24/2021 5:25:20 AM	B76934
Ethylbenzene	ND	1.0		µg/L	1	4/24/2021 5:25:20 AM	B76934
Naphthalene	ND	2.0		µg/L	1	4/24/2021 5:25:20 AM	B76934
1-Methylnaphthalene	ND	4.0		µg/L	1	4/24/2021 5:25:20 AM	B76934
2-Methylnaphthalene	ND	4.0		µg/L	1	4/24/2021 5:25:20 AM	B76934
Xylenes, Total	ND	1.5		µg/L	1	4/24/2021 5:25:20 AM	B76934
Surr: 1,2-Dichloroethane-d4	93.2	70-130		%Rec	1	4/24/2021 5:25:20 AM	B76934
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	4/24/2021 5:25:20 AM	B76934
Surr: Dibromofluoromethane	99.3	70-130		%Rec	1	4/24/2021 5:25:20 AM	B76934
Surr: Toluene-d8	97.5	70-130		%Rec	1	4/24/2021 5:25:20 AM	B76934

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

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

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Analytical Report

Lab Order **2104A35**

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: RW-1

Project: State Com J6

Collection Date: 4/21/2021 11:30:00 AM

Lab ID: 2104A35-004

Matrix: AQUEOUS

Received Date: 4/23/2021 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: JMR
Benzene	33	10		µg/L	20	4/24/2021 5:53:55 AM	B76934
Toluene	ND	10		µg/L	20	4/24/2021 5:53:55 AM	B76934
Ethylbenzene	180	10		µg/L	20	4/24/2021 5:53:55 AM	B76934
Naphthalene	72	20		µg/L	20	4/24/2021 5:53:55 AM	B76934
1-Methylnaphthalene	ND	40		µg/L	20	4/24/2021 5:53:55 AM	B76934
2-Methylnaphthalene	68	40		µg/L	20	4/24/2021 5:53:55 AM	B76934
Xylenes, Total	2300	15		µg/L	20	4/24/2021 5:53:55 AM	B76934
Surr: 1,2-Dichloroethane-d4	93.0	70-130		%Rec	20	4/24/2021 5:53:55 AM	B76934
Surr: 4-Bromofluorobenzene	98.7	70-130		%Rec	20	4/24/2021 5:53:55 AM	B76934
Surr: Dibromofluoromethane	95.8	70-130		%Rec	20	4/24/2021 5:53:55 AM	B76934
Surr: Toluene-d8	99.6	70-130		%Rec	20	4/24/2021 5:53:55 AM	B76934

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

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

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Analytical Report

Lab Order 2104A35

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: RW-2

Project: State Com J6

Collection Date: 4/21/2021 1:30:00 PM

Lab ID: 2104A35-005

Matrix: AQUEOUS

Received Date: 4/23/2021 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	1.0		µg/L	1	4/26/2021 6:48:14 PM	R76966
Toluene	ND	1.0		µg/L	1	4/26/2021 6:48:14 PM	R76966
Ethylbenzene	2.3	1.0		µg/L	1	4/26/2021 6:48:14 PM	R76966
Naphthalene	ND	2.0		µg/L	1	4/26/2021 6:48:14 PM	R76966
1-Methylnaphthalene	ND	4.0		µg/L	1	4/26/2021 6:48:14 PM	R76966
2-Methylnaphthalene	ND	4.0		µg/L	1	4/26/2021 6:48:14 PM	R76966
Xylenes, Total	9.9	1.5		µg/L	1	4/26/2021 6:48:14 PM	R76966
Surr: 1,2-Dichloroethane-d4	94.7	70-130		%Rec	1	4/26/2021 6:48:14 PM	R76966
Surr: 4-Bromofluorobenzene	81.0	70-130		%Rec	1	4/26/2021 6:48:14 PM	R76966
Surr: Dibromofluoromethane	105	70-130		%Rec	1	4/26/2021 6:48:14 PM	R76966
Surr: Toluene-d8	90.1	70-130		%Rec	1	4/26/2021 6:48:14 PM	R76966

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

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

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Analytical Report

Lab Order 2104A35

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: RW-3

Project: State Com J6

Collection Date: 4/21/2021 2:45:00 PM

Lab ID: 2104A35-006

Matrix: AQUEOUS

Received Date: 4/23/2021 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: JMR
Benzene	110	5.0		µg/L	5	4/24/2021 6:51:04 AM	B76934
Toluene	ND	5.0		µg/L	5	4/24/2021 6:51:04 AM	B76934
Ethylbenzene	180	5.0		µg/L	5	4/24/2021 6:51:04 AM	B76934
Naphthalene	110	10		µg/L	5	4/24/2021 6:51:04 AM	B76934
1-Methylnaphthalene	58	20		µg/L	5	4/24/2021 6:51:04 AM	B76934
2-Methylnaphthalene	120	20		µg/L	5	4/24/2021 6:51:04 AM	B76934
Xylenes, Total	2300	75		µg/L	50	4/26/2021 7:17:02 PM	R76966
Surr: 1,2-Dichloroethane-d4	91.8	70-130		%Rec	5	4/24/2021 6:51:04 AM	B76934
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	5	4/24/2021 6:51:04 AM	B76934
Surr: Dibromofluoromethane	98.7	70-130		%Rec	5	4/24/2021 6:51:04 AM	B76934
Surr: Toluene-d8	87.4	70-130		%Rec	5	4/24/2021 6:51:04 AM	B76934

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

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

Page 6 of 9

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2104A35

29-Apr-21

Client: HILCORP ENERGY**Project:** State Com J6

Sample ID: 100ng lcs2	SampType: LCS			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: LCSW	Batch ID: B76934			RunNo: 76934						
Prep Date:	Analysis Date: 4/24/2021			SeqNo: 2726667		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	92.6	70	130			
Toluene	20	1.0	20.00	0	99.3	70	130			
Surr: 1,2-Dichloroethane-d4	8.9		10.00		89.1	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.0	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.8		10.00		98.1	70	130			

Sample ID: mb2	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: PBW	Batch ID: B76934			RunNo: 76934						
Prep Date:	Analysis Date: 4/24/2021			SeqNo: 2726669		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.3	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.4	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.2	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Sample ID: 100ng lcs	SampType: LCS			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: LCSW	Batch ID: R76966			RunNo: 76966						
Prep Date:	Analysis Date: 4/26/2021			SeqNo: 2727923		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	9.2		10.00		92.0	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.3	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.7		10.00		97.4	70	130			

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2104A35

29-Apr-21

Client: HILCORP ENERGY

Project: State Com J6

Sample ID: mb	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: PBW	Batch ID: R76966	RunNo: 76966								
Prep Date:	Analysis Date: 4/26/2021	SeqNo: 2727924 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.2		10.00		91.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.8		10.00		98.4	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit



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

Sample Log-In Check List

Client Name: HILCORP ENERGY

Work Order Number: 2104A35

RcptNo: 1

Received By: Juan Rojas

4/23/2021 7:25:00 AM

Juan Rojas

Completed By: Desiree Dominguez

4/23/2021 8:25:53 AM

DD

Reviewed By: SPA 4.23.21

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4"$ for AQ VOA? Yes ☒ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(2 or >12 unless noted)

Adjusted?

Checked by:

30
4/23/21

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail☐ Phone☐ Fax☐ In Person

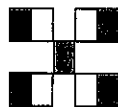
Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Yes			



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

October 11, 2021

Stuart Hyde
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX

RE: State Com J6

OrderNo.: 2109C69

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/23/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2109C69

Date Reported: 10/11/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: MW-1

Project: State Com J6

Collection Date: 9/21/2021 11:12:00 AM

Lab ID: 2109C69-001

Matrix: AQUEOUS

Received Date: 9/23/2021 7:09:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
Benzene	ND	1.0		µg/L	1	9/28/2021 3:33:00 PM
Toluene	ND	1.0		µg/L	1	9/28/2021 3:33:00 PM
Ethylbenzene	ND	1.0		µg/L	1	9/28/2021 3:33:00 PM
Naphthalene	ND	2.0		µg/L	1	9/28/2021 3:33:00 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	9/28/2021 3:33:00 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	9/28/2021 3:33:00 PM
Xylenes, Total	ND	1.5		µg/L	1	9/28/2021 3:33:00 PM
Surr: 1,2-Dichloroethane-d4	98.7	70-130		%Rec	1	9/28/2021 3:33:00 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	9/28/2021 3:33:00 PM
Surr: Dibromofluoromethane	98.6	70-130		%Rec	1	9/28/2021 3:33:00 PM
Surr: Toluene-d8	95.3	70-130		%Rec	1	9/28/2021 3:33:00 PM

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

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

Page 1 of 6

Analytical Report

Lab Order 2109C69

Date Reported: 10/11/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: MW-2

Project: State Com J6

Collection Date: 9/21/2021 10:31:00 AM

Lab ID: 2109C69-002

Matrix: AQUEOUS

Received Date: 9/23/2021 7:09:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
Benzene	ND	1.0		µg/L	1	9/28/2021 4:43:00 PM
Toluene	ND	1.0		µg/L	1	9/28/2021 4:43:00 PM
Ethylbenzene	ND	1.0		µg/L	1	9/28/2021 4:43:00 PM
Naphthalene	ND	2.0		µg/L	1	9/28/2021 4:43:00 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	9/28/2021 4:43:00 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	9/28/2021 4:43:00 PM
Xylenes, Total	ND	1.5		µg/L	1	9/28/2021 4:43:00 PM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	9/28/2021 4:43:00 PM
Surr: 4-Bromofluorobenzene	99.3	70-130		%Rec	1	9/28/2021 4:43:00 PM
Surr: Dibromofluoromethane	103	70-130		%Rec	1	9/28/2021 4:43:00 PM
Surr: Toluene-d8	95.1	70-130		%Rec	1	9/28/2021 4:43:00 PM

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

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

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Analytical Report

Lab Order 2109C69

Date Reported: 10/11/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: RW-2

Project: State Com J6

Collection Date: 9/21/2021 1:05:00 PM

Lab ID: 2109C69-003

Matrix: AQUEOUS

Received Date: 9/23/2021 7:09:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
Benzene	ND	1.0		µg/L	1	9/28/2021 5:07:00 PM
Toluene	ND	1.0		µg/L	1	9/28/2021 5:07:00 PM
Ethylbenzene	ND	1.0		µg/L	1	9/28/2021 5:07:00 PM
Naphthalene	ND	2.0		µg/L	1	9/28/2021 5:07:00 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	9/28/2021 5:07:00 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	9/28/2021 5:07:00 PM
Xylenes, Total	ND	1.5		µg/L	1	9/28/2021 5:07:00 PM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	9/28/2021 5:07:00 PM
Surr: 4-Bromofluorobenzene	97.0	70-130		%Rec	1	9/28/2021 5:07:00 PM
Surr: Dibromofluoromethane	103	70-130		%Rec	1	9/28/2021 5:07:00 PM
Surr: Toluene-d8	96.2	70-130		%Rec	1	9/28/2021 5:07:00 PM

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

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

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Analytical Report

Lab Order 2109C69

Date Reported: 10/11/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: MW-3

Project: State Com J6

Collection Date: 9/21/2021 9:50:00 AM

Lab ID: 2109C69-004

Matrix: AQUEOUS

Received Date: 9/23/2021 7:09:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: CCM
Benzene	ND	1.0		µg/L	1	9/28/2021 5:30:00 PM
Toluene	ND	1.0		µg/L	1	9/28/2021 5:30:00 PM
Ethylbenzene	ND	1.0		µg/L	1	9/28/2021 5:30:00 PM
Naphthalene	ND	2.0		µg/L	1	9/28/2021 5:30:00 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	9/28/2021 5:30:00 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	9/28/2021 5:30:00 PM
Xylenes, Total	ND	1.5		µg/L	1	9/28/2021 5:30:00 PM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	9/28/2021 5:30:00 PM
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	9/28/2021 5:30:00 PM
Surr: Dibromofluoromethane	102	70-130		%Rec	1	9/28/2021 5:30:00 PM
Surr: Toluene-d8	96.8	70-130		%Rec	1	9/28/2021 5:30:00 PM

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

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

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2109C69

11-Oct-21

Client: HILCORP ENERGY**Project:** State Com J6

Sample ID: 100ng lcs	SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: LCSW	Batch ID: SL81610		RunNo: 81610							
Prep Date:	Analysis Date: 9/28/2021		SeqNo: 2885971		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.2	70	130			
Toluene	18	1.0	20.00	0	91.1	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.6		10.00		96.4	70	130			

Sample ID: MB	SampType: MBLK		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: PBW	Batch ID: SL81610		RunNo: 81610							
Prep Date:	Analysis Date: 9/28/2021		SeqNo: 2885972		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.8	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	9.6		10.00		96.0	70	130			

Sample ID: 2109C69-001ams	SampType: MS		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: MW-1	Batch ID: SL81610		RunNo: 81610							
Prep Date:	Analysis Date: 9/28/2021		SeqNo: 2885974		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	20	1.0	20.00	0	99.2	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.6		10.00		95.6	70	130			

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2109C69

11-Oct-21

Client: HILCORP ENERGY

Project: State Com J6

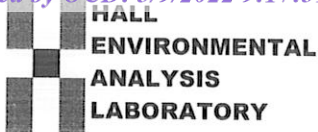
Sample ID: 2109C69-001amsd		SampType: MSD		TestCode: EPA Method 8260: Volatiles Short List						
Client ID: MW-1		Batch ID: SL81610		RunNo: 81610						
Prep Date:		Analysis Date: 9/28/2021		SeqNo: 2885975		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.5	70	130	4.19	20	
Toluene	19	1.0	20.00	0	95.8	70	130	3.41	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		100	70	130	0	0	
Surr: Toluene-d8	9.8		10.00		97.7	70	130	0	0	

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

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

Sample Log-In Check List

Client Name: **HILCORP ENERGY**Work Order Number: **2109C69**

RcptNo: 1

Received By: **Cheyenne Cason**

9/23/2021 7:09:00 AM

*Chad*Completed By: **Sean Livingston**

9/23/2021 8:55:50 AM

*Sean Livingston*Reviewed By: *CVC*

9/23/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4"$ for AQ VOA? Yes ☒ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by: *SPA 9.23.21*

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.8	Good				

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Project Manager: STUART HIDE

Sampler: DANTON BENNER
On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
of Coolers: 1
Cooler Temp (including CF): $4.0, 9.0 - 0.1 = 4.8$ (°C)

Container Type and #	Preservative Type	HEAL No.
340ML VOA		2109C09
		001
		002
		003
		004

[illegible]

Received by:	Via:	Date	Time
Christopher Walters		9/22/21	1458
Received by:	Via:	Date	Time
phs - covvier		9/23/21	0709

email or Fax#: MKELLOUGH@HILCORP.COM

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other _____

☐ EDD (Type) _____

Date	Time	Matrix	Sample Name
9-21-22	11:12	W	MW-1
	10:31		MW-2
	1:05		RW-2
	9:50		MW-3

Date:	9/22/21	Time:	14:58	Relinquished by:	Spencer
Date:	9/22/21	Time:	1752	Relinquished by:	Michael Wade

if necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

December 13, 2021

Mitch Killough
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: State Com J6

OrderNo.: 2112018

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 7 sample(s) on 12/1/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2112018

Date Reported: 12/13/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: MW-1

Project: State Com J6

Collection Date: 11/29/2021 10:10:00 AM

Lab ID: 2112018-001

Matrix: AQUEOUS

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: JR
Benzene	ND	1.0		µg/L	1	12/1/2021 7:58:59 PM
Toluene	ND	1.0		µg/L	1	12/1/2021 7:58:59 PM
Ethylbenzene	ND	1.0		µg/L	1	12/1/2021 7:58:59 PM
Naphthalene	ND	2.0		µg/L	1	12/1/2021 7:58:59 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	12/1/2021 7:58:59 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	12/1/2021 7:58:59 PM
Xylenes, Total	ND	1.5		µg/L	1	12/1/2021 7:58:59 PM
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	12/1/2021 7:58:59 PM
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	1	12/1/2021 7:58:59 PM
Surr: Dibromofluoromethane	98.8	70-130		%Rec	1	12/1/2021 7:58:59 PM
Surr: Toluene-d8	99.2	70-130		%Rec	1	12/1/2021 7:58:59 PM

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

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

Page 1 of 8

Analytical Report

Lab Order 2112018

Date Reported: 12/13/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: MW-2

Project: State Com J6

Collection Date: 11/19/2021 12:15:00 PM

Lab ID: 2112018-002

Matrix: AQUEOUS

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: JR
Benzene	ND	1.0		µg/L	1	12/1/2021 8:27:37 PM
Toluene	ND	1.0		µg/L	1	12/1/2021 8:27:37 PM
Ethylbenzene	ND	1.0		µg/L	1	12/1/2021 8:27:37 PM
Naphthalene	ND	2.0		µg/L	1	12/1/2021 8:27:37 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	12/1/2021 8:27:37 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	12/1/2021 8:27:37 PM
Xylenes, Total	ND	1.5		µg/L	1	12/1/2021 8:27:37 PM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	12/1/2021 8:27:37 PM
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	1	12/1/2021 8:27:37 PM
Surr: Dibromofluoromethane	99.8	70-130		%Rec	1	12/1/2021 8:27:37 PM
Surr: Toluene-d8	95.6	70-130		%Rec	1	12/1/2021 8:27:37 PM

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

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

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Analytical Report

Lab Order 2112018

Date Reported: 12/13/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: MW-3

Project: State Com J6

Collection Date: 11/19/2021 2:00:00 PM

Lab ID: 2112018-003

Matrix: AQUEOUS

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: JR
Benzene	ND	1.0		µg/L	1	12/1/2021 8:56:13 PM
Toluene	ND	1.0		µg/L	1	12/1/2021 8:56:13 PM
Ethylbenzene	ND	1.0		µg/L	1	12/1/2021 8:56:13 PM
Naphthalene	ND	2.0		µg/L	1	12/1/2021 8:56:13 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	12/1/2021 8:56:13 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	12/1/2021 8:56:13 PM
Xylenes, Total	ND	1.5		µg/L	1	12/1/2021 8:56:13 PM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	12/1/2021 8:56:13 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	12/1/2021 8:56:13 PM
Surr: Dibromofluoromethane	100	70-130		%Rec	1	12/1/2021 8:56:13 PM
Surr: Toluene-d8	97.2	70-130		%Rec	1	12/1/2021 8:56:13 PM

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

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

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Analytical Report

Lab Order 2112018

Date Reported: 12/13/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: RW-1

Project: State Com J6

Collection Date: 11/29/2021 11:30:00 AM

Lab ID: 2112018-004

Matrix: AQUEOUS

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: JR
Benzene	14	8.0	D	µg/L	20	12/1/2021 9:24:47 PM
Toluene	ND	8.0	D	µg/L	20	12/1/2021 9:24:47 PM
Ethylbenzene	180	8.0	D	µg/L	20	12/1/2021 9:24:47 PM
Naphthalene	64	40	D	µg/L	20	12/1/2021 9:24:47 PM
1-Methylnaphthalene	41	40	D	µg/L	20	12/1/2021 9:24:47 PM
2-Methylnaphthalene	61	40	D	µg/L	20	12/1/2021 9:24:47 PM
Xylenes, Total	1700	30	D	µg/L	20	12/1/2021 9:24:47 PM
Surr: 1,2-Dichloroethane-d4	97.8	70-130	D	%Rec	20	12/1/2021 9:24:47 PM
Surr: 4-Bromofluorobenzene	93.6	70-130	D	%Rec	20	12/1/2021 9:24:47 PM
Surr: Dibromofluoromethane	93.0	70-130	D	%Rec	20	12/1/2021 9:24:47 PM
Surr: Toluene-d8	98.2	70-130	D	%Rec	20	12/1/2021 9:24:47 PM

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

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

Page 4 of 8

Analytical Report

Lab Order 2112018

Date Reported: 12/13/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: RW-2

Project: State Com J6

Collection Date: 11/29/2021 1:25:00 PM

Lab ID: 2112018-005

Matrix: AQUEOUS

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: JR
Benzene	ND	1.0		µg/L	1	12/1/2021 9:53:18 PM
Toluene	ND	1.0		µg/L	1	12/1/2021 9:53:18 PM
Ethylbenzene	ND	1.0		µg/L	1	12/1/2021 9:53:18 PM
Naphthalene	ND	2.0		µg/L	1	12/1/2021 9:53:18 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	12/1/2021 9:53:18 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	12/1/2021 9:53:18 PM
Xylenes, Total	ND	1.5		µg/L	1	12/1/2021 9:53:18 PM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	12/1/2021 9:53:18 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	12/1/2021 9:53:18 PM
Surr: Dibromofluoromethane	96.2	70-130		%Rec	1	12/1/2021 9:53:18 PM
Surr: Toluene-d8	95.6	70-130		%Rec	1	12/1/2021 9:53:18 PM

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

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

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Analytical Report

Lab Order 2112018

Date Reported: 12/13/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: RW-3

Project: State Com J6

Collection Date: 11/30/2021 11:00:00 AM

Lab ID: 2112018-006

Matrix: AQUEOUS

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: JR
Benzene	25	5.0		µg/L	5	12/1/2021 10:50:36 PM
Toluene	ND	5.0		µg/L	5	12/1/2021 10:50:36 PM
Ethylbenzene	47	5.0		µg/L	5	12/1/2021 10:50:36 PM
Naphthalene	54	10		µg/L	5	12/1/2021 10:50:36 PM
1-Methylnaphthalene	44	20		µg/L	5	12/1/2021 10:50:36 PM
2-Methylnaphthalene	78	20		µg/L	5	12/1/2021 10:50:36 PM
Xylenes, Total	660	7.5		µg/L	5	12/1/2021 10:50:36 PM
Surr: 1,2-Dichloroethane-d4	92.3	70-130		%Rec	5	12/1/2021 10:50:36 PM
Surr: 4-Bromofluorobenzene	91.2	70-130		%Rec	5	12/1/2021 10:50:36 PM
Surr: Dibromofluoromethane	88.9	70-130		%Rec	5	12/1/2021 10:50:36 PM
Surr: Toluene-d8	94.9	70-130		%Rec	5	12/1/2021 10:50:36 PM

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

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

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Analytical Report

Lab Order 2112018

Date Reported: 12/13/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: RW-4

Project: State Com J6

Collection Date: 11/30/2021 12:40:00 PM

Lab ID: 2112018-007

Matrix: AQUEOUS

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: JR
Benzene	44	10		µg/L	10	12/6/2021 4:17:23 PM
Toluene	ND	10		µg/L	10	12/6/2021 4:17:23 PM
Ethylbenzene	370	10		µg/L	10	12/6/2021 4:17:23 PM
Naphthalene	280	20		µg/L	10	12/6/2021 4:17:23 PM
1-Methylnaphthalene	110	40		µg/L	10	12/6/2021 4:17:23 PM
2-Methylnaphthalene	210	40		µg/L	10	12/6/2021 4:17:23 PM
Xylenes, Total	4600	150		µg/L	100	12/6/2021 3:48:20 PM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	10	12/6/2021 4:17:23 PM
Surr: 4-Bromofluorobenzene	89.0	70-130		%Rec	10	12/6/2021 4:17:23 PM
Surr: Dibromofluoromethane	107	70-130		%Rec	10	12/6/2021 4:17:23 PM
Surr: Toluene-d8	102	70-130		%Rec	10	12/6/2021 4:17:23 PM

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

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

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2112018

13-Dec-21

Client: HILCORP ENERGY**Project:** State Com J6

Sample ID: 100ng lcs	SampType: LCS			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: LCSW	Batch ID: R83222			RunNo: 83222						
Prep Date:	Analysis Date: 12/1/2021			SeqNo: 2956772		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.7	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.5	70	130			
Surr: Toluene-d8	9.5		10.00		95.1	70	130			

Sample ID: mb	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: PBW	Batch ID: R83222			RunNo: 83222						
Prep Date:	Analysis Date: 12/1/2021			SeqNo: 2956783		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.9	70	130			
Surr: Toluene-d8	9.7		10.00		96.7	70	130			

Qualifiers:

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



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

Sample Log-In Check List

Client Name: HILCORP ENERGY

Work Order Number: 2112018

RcptNo: 1

Received By: Cheyenne Cason 12/1/2021 8:00:00 AM

Completed By: Sean Livingston 12/1/2021 9:53:49 AM

Reviewed By: *Cnc*

12/1/21

*Cnc**Sean Livingston*Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4"$ for AQ VOA? Yes ☒ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: *gn 12/1/21*

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good				

Chain-of-Custody Record

Client: Hilcorp Farmington NM

Mailing Address: 382 Road 3100 Aztec, NM 87410

Billing Address: PO Box 61529 Houston, TX 77208

Phone #: 505-486-9543

email or Fax#: khoekstra@hilcorp.com

QA/QC Package: W.K. Neaugh@hilcorp.com☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

State Com J6

Project #:

Project Manager:

Mitch Killough

Sampler: Kurt Hoekstra

On Ice: ☒ Yes ☐ No

of Coolers: (

Cooler Temp (including CF): 2.2-0.2 = 2.0

Date	Time	Matrix	Sample Name
11-29	10:10	Water	MW-1
11-29	12:15	Water	MW-2
11-29	2:00	Water	MW-3
11-29	11:30	Water	RW-1
11-29	1:25	Water	RW-2
11-30	11:00	Water	RW-3
11-30	12:40	Water	RW-4

Container Type and #

(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

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(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

(3) 40ml VOA

Relinquished by:

Date: 11-30 1430

Relinquished by:

Date: 11-30 1802

Received by:

Via:

Date: 11/30/21 1430

Received by:

Via:

Date: 11/30/21 0800

Date

Time

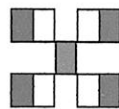
Date

Time

Remarks: Special Pricing See Andy

BTEX Method 8260

Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene

HALL ENVIRONMENTAL
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 88630

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:
	372171
	Action Number: 88630
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2021 Annual Groundwater Monitoring Report for State Com J#6: Content Satisfactory 1. Absorbent socks are not considered a remediation method for recovering LNAPL/PSH. Hilcorp may want to consider ORC socks or conducting another MDPE event, or installing a pump on wells that have the most thickness of PSH, and propose that option to OCD via next groundwater monitoring submission. 2. Groundwater sampling events are approved to be scheduled on an annual basis until analysis results begin to demonstrate public health standards below the allowable concentrations of the WQCC. 3. Submit the 2022 and 2023 Annual Reports if they have not already been submitted. 4. Submit the 2024 Groundwater Monitoring Report by April 1, 2025.	5/17/2024