REVIEWED
By Mike Buchanan at 10:22 am, Mar 11, 2024

February 14, 2022

NMOCD, District 3
1000 Rio Brazos Drive
Aztec, New Mexico 87410

Review of the 2021 Annual Groundwater Monitoring Report for McCoy Gas Com D 1E: **Content Satisfactory**
1. Continue to collect samples on quarterly basis until eight (8) consecutive samples are below the NM WQCC standards.
2. Continue remediation efforts for recovering LNAPL.
3. Submit the next annual report as scheduled by April 1, 2024.

Subject: **2021 Annual Groundwater Monitoring Report**
McCoy Gas Com D 1E
NMOCD Incident #: NCS2105634419
San Juan County, New Mexico

To Whom It May Concern,

WSP USA Inc. (WSP) presents this 2021 Annual Groundwater Monitoring Report on behalf of Hilcorp Energy Company (Hilcorp) to the New Mexico Oil Conservation Division (NMOCD) to document groundwater monitoring activities conducted at the McCoy Gas Com D 1E natural gas production well (Site) during 2021. The Site is located within Unit Letter E of Section 28 within Township 30 North and Range 12 West, San Juan County, New Mexico (Figure 1).

In the 2019 and 2020 *Annual Groundwater Reports* submitted to NMOCD, it was recommended that the site be moved from a semi-annual sampling schedule to a quarterly sampling schedule. Hilcorp did not receive a response from the NMOCD on these recommendations until December of 2021. Therefore, during 2020 the Site was sampled semi-annually and during 2021, the Site was sampled in the first, second, and fourth quarters. During these monitoring events, one monitoring well (MW-1R) is sampled. This report presents the results of 2021 monitoring events.

SITE BACKGROUND

In February 2006, while the former operator, XTO, was removing a 95-barrel separator pit tank, impacted soil was exposed from a former earthen separator pit. Prior to XTO, Amoco originally assessed the impacted soil from the former pit with test holes in 1992, as detailed in an Envirotech, Inc. *Site Assessment*, included in the *2020 Annual Groundwater Report* that was submitted to the NMOCD on February 17, 2021, and approved by the NMOCD on December 28, 2021. Impacted soil was excavated by XTO to a depth of approximately 23 feet below ground surface (bgs), and an estimated 750 cubic yards of impacted soil were removed. A Blagg Engineering, Inc. field report detailing the excavation was also included in the *2020 Annual Groundwater Report*. The floor of the excavation was sampled, and no groundwater was encountered.

In September 2006, monitoring well MW-1 was installed in the location of the former excavation and sampled in October 2006. In May 2011 the top of the casing of monitoring well MW-1 was cut down 1.55 feet and re-designated as MW-1R. Laboratory results for groundwater samples from monitoring well MW-1R indicated benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations exceeded the New Mexico Water Quality Control Commission (NMWQCC) standards.

In the *2006 Annual Groundwater Report*, XTO proposed the installation of two downgradient monitoring wells to further delineate impact to groundwater. In May 2007, XTO installed and sampled monitoring wells MW-2 and MW-3. Groundwater analytical results indicated elevated BTEX concentrations were present in the sample from monitoring well MW-1R (source area), but BTEX concentrations were not detected above the laboratory detection limits in samples from monitoring wells MW-2 and MW-3.

In a remediation work plan submitted to the NMOCD on October 31, 2007, XTO proposed installing Oxygen Release Compound® (ORC®) socks in monitoring well MW-1R. In November 2007, a ORC® sock, which produces a controlled release of oxygen into the groundwater for up to 12 months, was installed in monitoring well MW-1R across the water column. From 2007 to 2009, XTO maintained ORC socks in monitoring well MW-1R, sampled existing monitoring wells regularly to monitor BTEX concentrations, verified dissolved oxygen concentrations in monitoring well MW-1R, monitored for potential downgradient dissolved phase hydrocarbon plume migration in monitoring wells MW-2 and MW-3, and assessed groundwater flow behavior. In January 2009, the NMOCD requested XTO sample monitoring well MW-1R while an NMOCD representative collected a duplicate sample. This was completed on January 21, 2009.

WSP USA
848 EAST 2ND AVENUE
DURANGO CO 81301

Tel.: 970-385-1096
wsp.com

The *2010 Annual Groundwater Report* recommended the continued use of ORC socks in monitoring well MW-1R. Additionally, XTO proposed to conduct a specific capacity test on monitoring well MW-1R during the irrigation season (summer months) associated with th Halford Independent Irrigation Ditch, which runs directly south of the site, to determine a flow rate and assess remediation options for the groundwater. The *2011 Annual Groundwater Report* indicated the specific capacity test was not conducted as XTO did not receive approval. XTO continued using ORC socks and monitoring of BTEX concentrations in monitoring well MW-1R as well as monitoring of groundwater elevations in the existing monitoring wells through 2012.

In March 2012, free-phase product was detected in monitoring well MW-1R and the ORC socks were removed from the monitoring well. XTO installed oil-absorbent socks in the monitoring well to recover free product. From February 2013 through June 2013, the oil-absorbent socks were monitored every other week. When greater than 50 percent (%) saturation was observed, the oil-absorbent socks were replaced. The used oil-absorbent socks were wrung out and the recovered liquid was discarded in an on-site below grade tank. Due to an observed decreased in saturation of the oil-absorbent socks, XTO permanently removed the product recovery socks in September 2013. No free-phase product has been detected in monitoring well MW-1R since December 2012.

Quarterly groundwater elevation of monitoring wells MW-1R, MW-2, and MW-3 and quarterly groundwater sampling of MW-1R occurred at this Site between 2012 and 2016. In 2016 the groundwater elevations and sample frequency were reduced to semi-annual and continued on this schedule through 2018.

In December of 2017, Hilcorp acquired the site from XTO and continued semi-annual groundwater elevation measurements of monitoring wells MW-1R, MW-2, and MW-3 and semi-annual sampling of MW-1R. A summary of groundwater elevations and laboratory analytical results from historical and current groundwater monitoring are presented in Tables 1 and 2, respectively.

GROUNDWATER SAMPLING ACTIVITIES AND RESULTS

In 2021, depth to groundwater was measured in monitoring wells MW-1R, MW-2, and MW-3 in January 26, June 22, and October 27, 2021. Groundwater samples were collected from monitoring well MW-1R and submitted to Pace Analytical (Pace) in Mount Juliet, Tennessee, in January 2021 for analysis of BTEX by United States Environmental Protection Agency (EPA) method 8260B. Samples from MW-1R from June and October 2021 were submitted to Hall Environmental Analytical Laboratory (HEAL) in Albuquerque, New Mexico, for laboratory analysis of BTEX by EPA Method 8260.

GROUNDWATER-LEVEL MEASUREMENTS

Prior to collection of groundwater samples from monitoring well MW-1R, depth to groundwater in all Site wells was measured using a Keck oil/water interface probe. Groundwater elevations are detailed in Table 1. Presence of any free-phase petroleum hydrocarbons was investigated using the interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with distilled water prior to each measurement to prevent cross-contamination.

GROUNDWATER SAMPLING

The volume of groundwater in monitoring well MW-1R was calculated, and a minimum of three well casing volumes of groundwater was purged (unless the well purged dry) using a new disposable polyvinyl chloride (PVC) bailer or a dedicated PVC bailer. All purge groundwater was disposed of into Hilcorp tanks. Once the monitoring well was purged, groundwater samples were collected by filling a minimum of two 40-milliliter (mL) glass vials. The laboratory-supplied vials were filled and capped with zero headspace to prevent degradation of the samples. Samples were labeled with the date and time of collection, well designation, project name, sample collector's name, and parameters to be analyzed. The samples were immediately sealed, packed on ice, and shipped to Pace or hand delivered to HEAL. 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. Laboratory analytical reports for 2021 are included as Enclosure A and the 2021 groundwater sample collection forms semi-annual monitoring events are included as Enclosure B

GROUNDWATER ELEVATION RESULTS

Groundwater elevations measured in monitoring wells during January, June, and October 2021 were used to draft groundwater potentiometric surface maps (Figures 2, 3, and 4). Contours were inferred based on groundwater elevations and observation of physical characteristics (topography, proximity to irrigation ditches, etc.) at the Site. Groundwater elevation data are summarized in Table 1.

Groundwater elevations measured during 2021 Site monitoring activities indicate the groundwater flow direction varies, flowing away from the irrigation ditch when the ditch contains water and towards the irrigation ditch when the ditch is dry, which is consistent with historical monitoring events.

GROUNDWATER ANALYTICAL RESULTS

During 2021, laboratory analytical results indicated BTEX concentrations in groundwater samples from monitoring well MW-1R did not exceed the NMWQCC standards during the three sampling events in 2021. Benzene was detected in January at a concentration of 2.13 micrograms per liter (µg/L). Ethylbenzene concentrations ranged from 184 µg/L in January to 39 µg/L in October, and Total xylenes concentrations ranged from 305 µg/L in January to 17 µg/L in June. Laboratory analytical results are summarized in Table 2. Figures 2, 3, and 4 depict groundwater analytical results for the January, June, and October 2021 monitoring events.

Concentrations of BTEX in groundwater in monitoring well MW-1R have been in compliance with NMWQCC standards for the past seven sampling events, spanning three years. The removal of free product via adsorbent socks and biodegradation of dissolved phase hydrocarbon via natural attenuation appears to have effectively remediated groundwater impacts at the Site.

CONCLUSIONS AND RECOMMENDATIONS

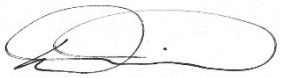
Laboratory analytical results indicated BTEX concentrations detected in groundwater sampled from MW-1 were compliant with NMWQCC standards in all three sampling events during 2021. The varying direction of groundwater flow and depth to groundwater at the site are caused by the presence or absence of water in the adjacent Halford Independent Irrigation Ditch.

Concentrations of BTEX in groundwater in monitoring well MW-1R have been in compliance with NMWQCC standards for the past seven sampling events, spanning three years. The removal of free product via adsorbent socks and biodegradation of dissolved phase hydrocarbon via natural attenuation appears to have effectively remediated groundwater impacts at the Site. As such, seven additional groundwater sampling events appears warranted to verify there are at least eight consecutive quarters of sampling that indicate no free product is present and dissolved phase BTEX concentrations are in compliance with NMWQCC standards. At that time, Hilcorp will respectively request no further action (NFA) and closure of the Site.

Hilcorp proposes to continue quarterly sampling for monitoring well MW-1R to monitor BTEX concentrations in groundwater. If BTEX concentrations are below NMWQCC standards for eight consecutive quarters, Hilcorp will request closure of the site. Depth to groundwater in monitoring wells MW-1R, MW-2, and MW-3 will be measured quarterly in 2022.

WSP appreciates the opportunity to provide this report to you. If you have any questions or comments regarding this report, do not hesitate to contact Mr. Josh Adams at (970) 385-1096 or at josh.adams@wsp.com, or Mr. Mitch Killough at mkillough@hilcorp.com.

Kind regards,



Josh Adams, P.G.
Consultant, Geologist

Daniel R. Moir, P.G.
Senior Lead Consultant, Geologist

Enclosed:

Figure 1: Site Location Map
Figure 2: Groundwater Elevation and Analytical Results- January 2021
Figure 3: Groundwater Elevation and Analytical Results- June 2021
Figure 4: Groundwater Elevation and Analytical Results- October 2021

Table 1: Groundwater Elevation Summary
Table 2: Groundwater Analytical Results

Enclosure A: 2021 Laboratory Analytical Reports
Enclosure B: 2021 Groundwater Sample Collection Forms

FIGURES

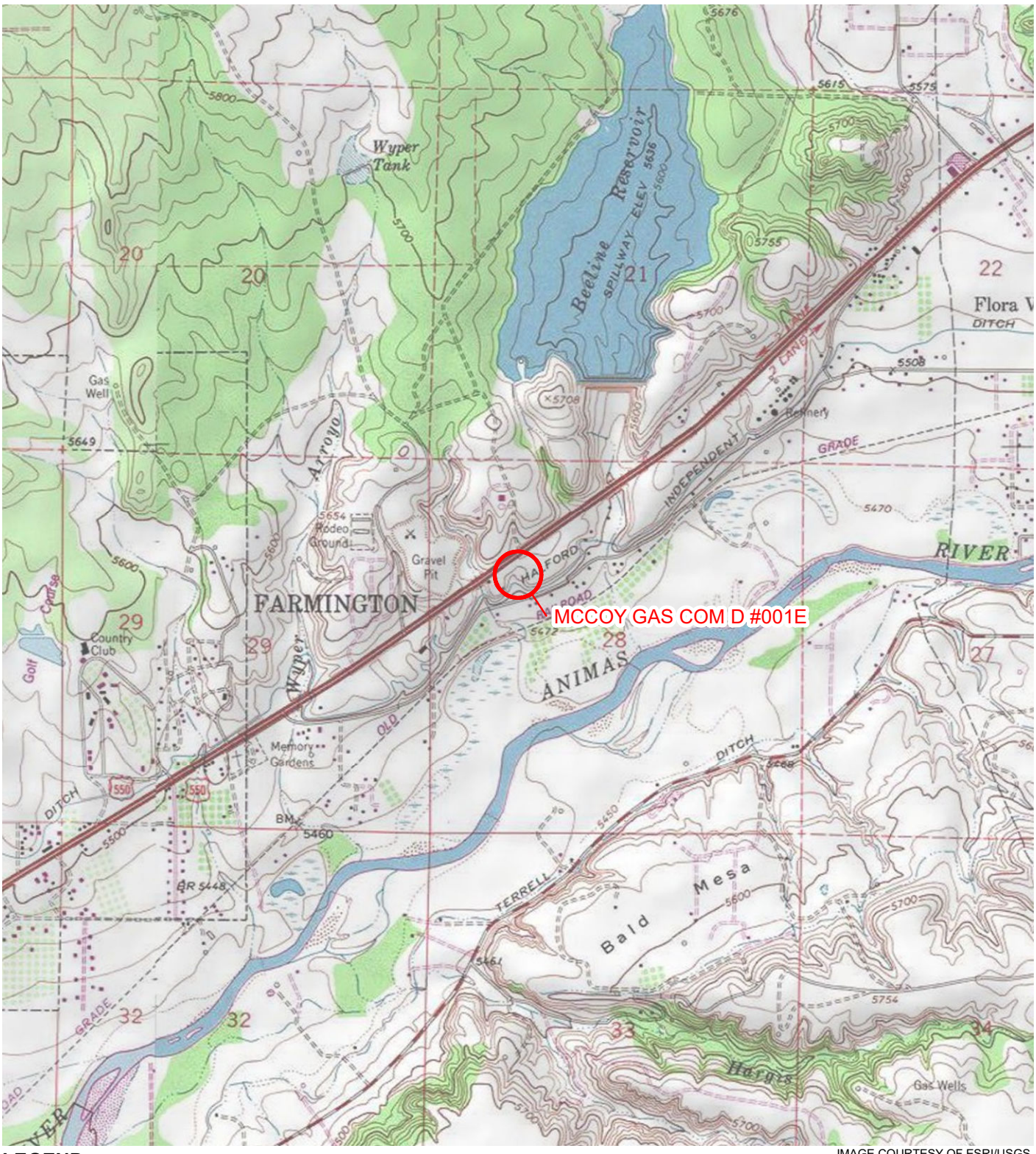


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
MCCOY GAS COM D #001E
SWNW SEC 28 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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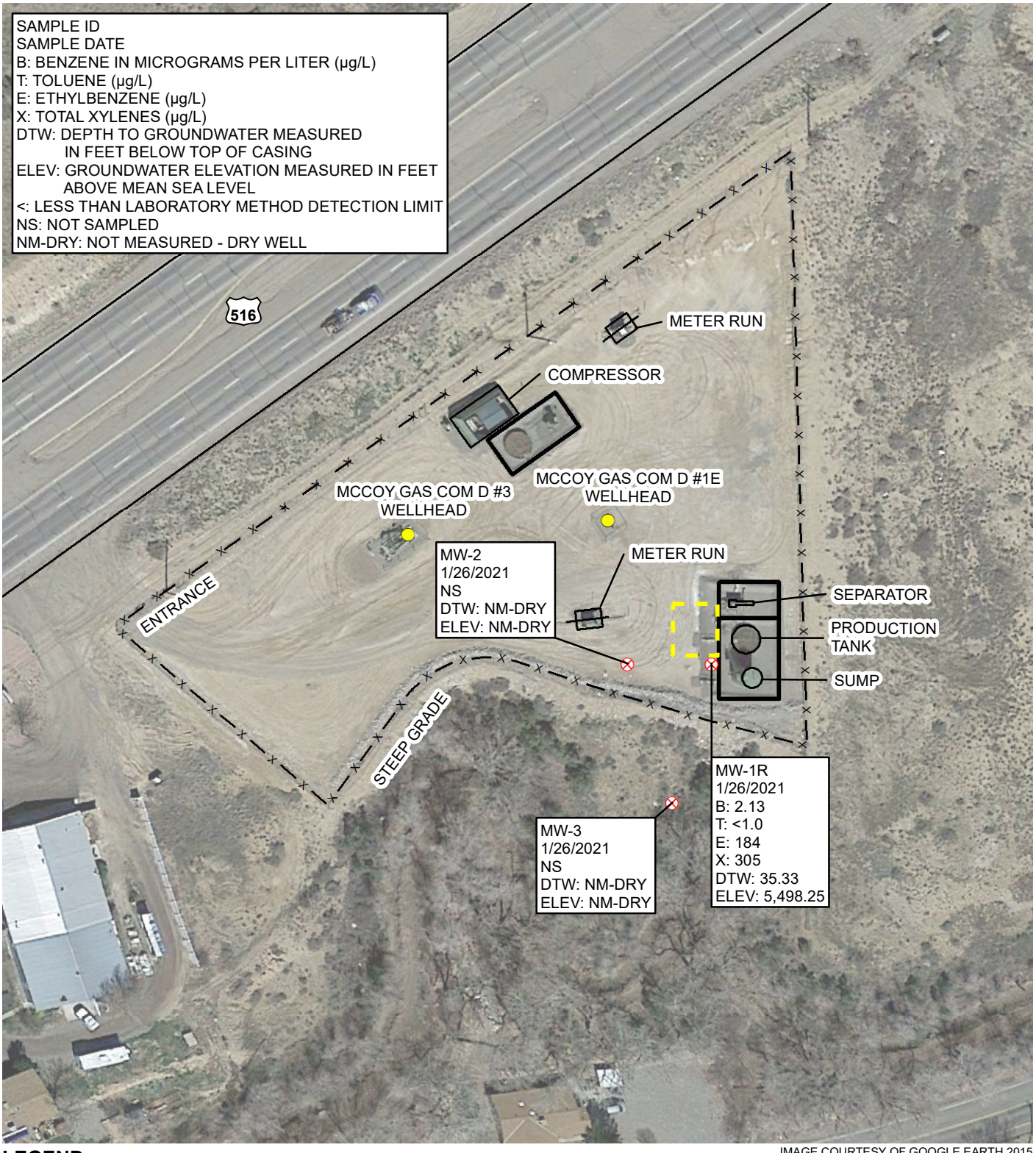

FIGURE 2
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS (JANUARY 2021)
MCCOY GAS COM D #1E
SWNW SEC 28 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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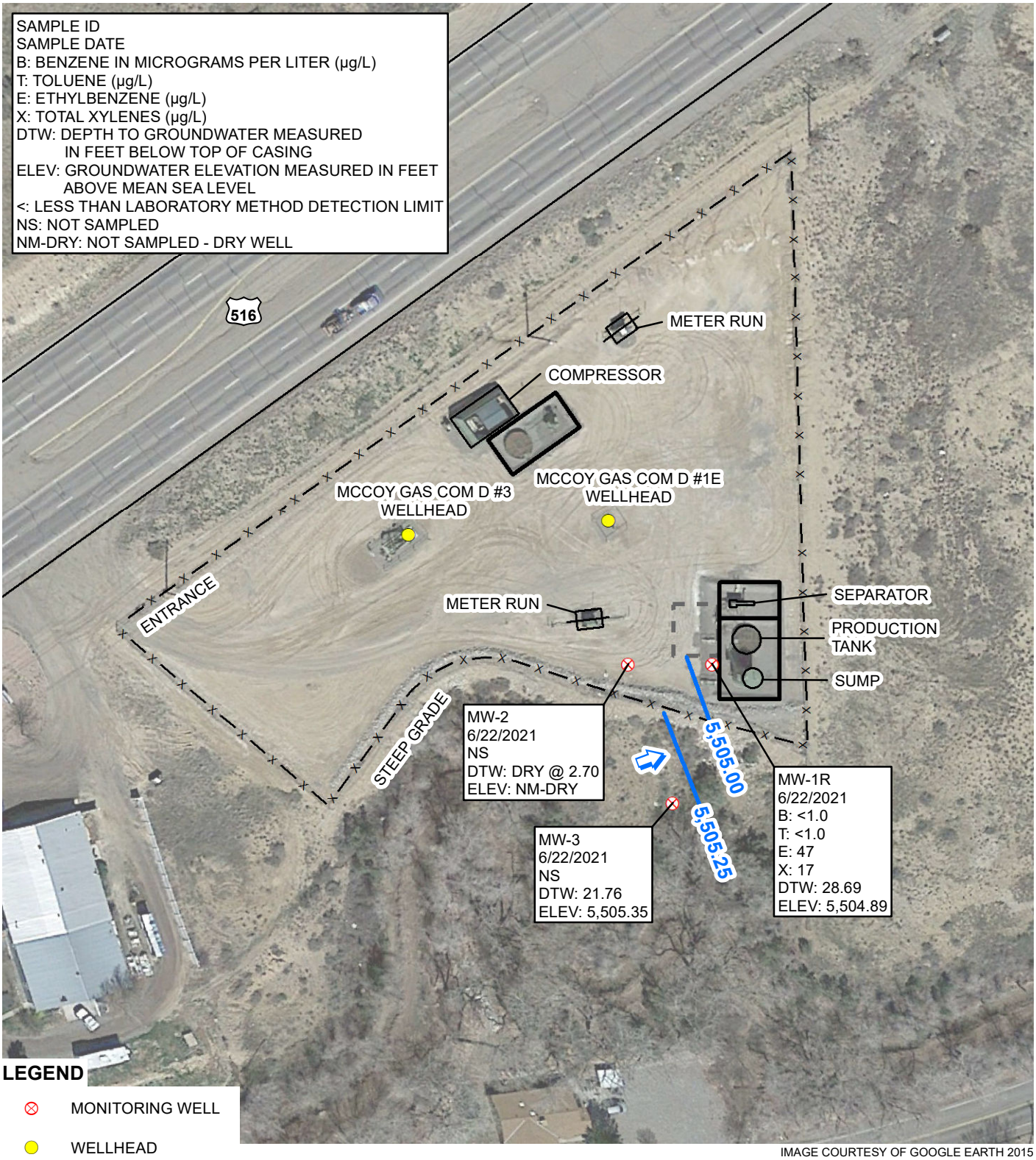

FIGURE 3
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS (JUNE 2021)
MCCOY GAS COM D #1E
SWNW SEC 28 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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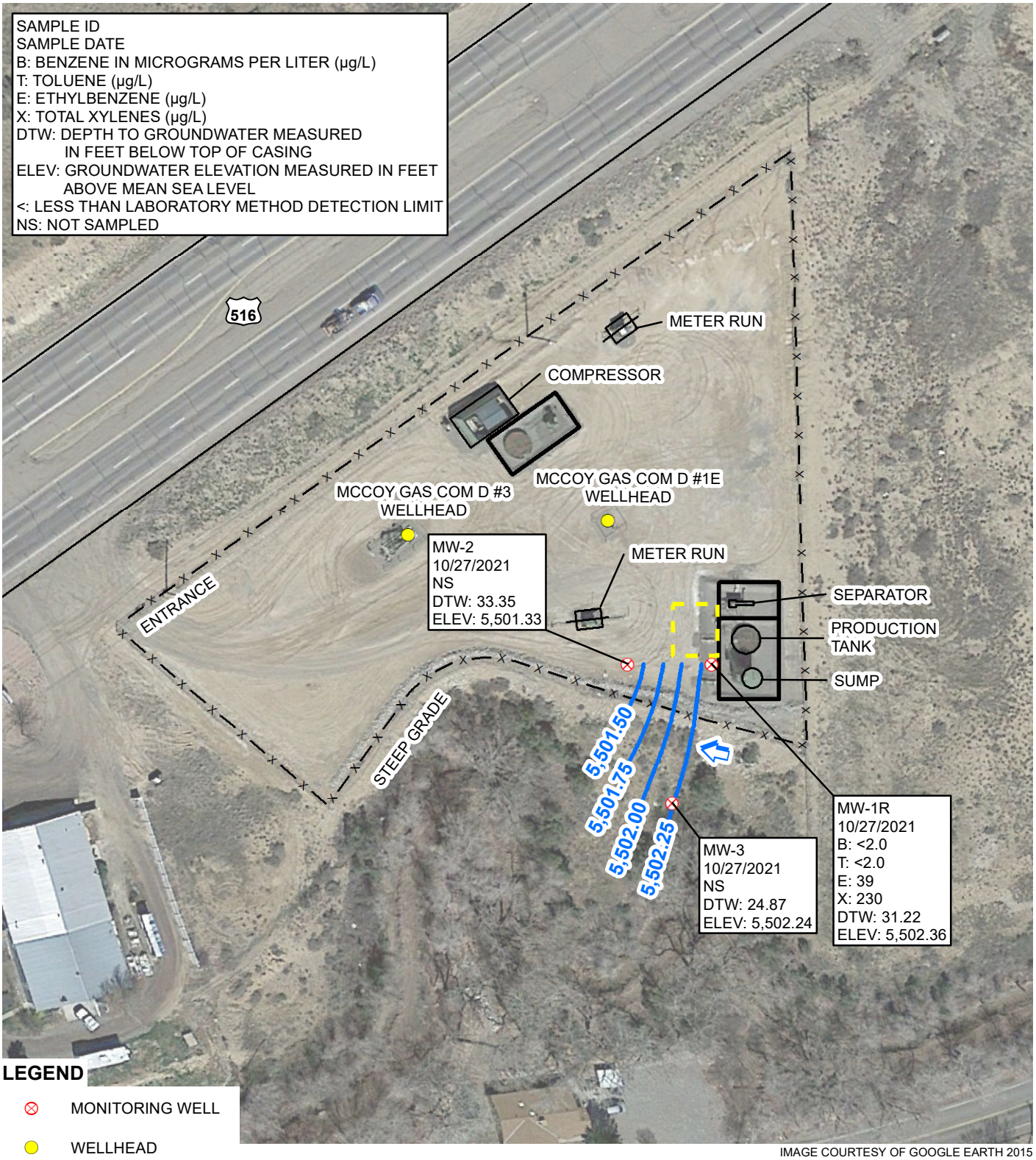

FIGURE 4
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS (OCTOBER 2021)
MCCOY GAS COM D #1E
SWNW SEC 28 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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TABLES

TABLE 1
GROUNDWATER ELEVATION SUMMARY

MCCOY GAS COM D #1E
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-1	10/16/2006	NP	32.86	0.00	5,502.27
MW-1	5/16/2007	NP	30.69	0.00	5,504.44
MW-1	7/23/2007	NP	30.57	0.00	5,504.56
MW-1	9/27/2007	NP	32.01	0.00	5,503.12
MW-1	11/27/2007	NP	34.60	0.00	5,500.53
MW-1	5/13/2008	NP	31.97	0.00	5,503.16
MW-1	1/21/2009	NP	36.88	0.00	5,498.25
MW-1	5/26/2009	NP	30.68	0.00	5,504.45
MW-1	5/25/2010	NP	30.13	0.00	5,505.00
MW-1	8/12/2010	NP	30.87	0.00	5,504.26
MW-1	11/17/2010	NP	33.96	0.00	5,501.17
MW-1	2/14/2011	NP	37.27	0.00	5,497.86
MW-1R *	5/17/2011	NP	29.31	0.00	5,504.27
MW-1R	8/9/2011	NP	29.04	0.00	5,504.54
MW-1R	11/9/2011	NP	31.51	0.00	5,502.07
MW-1R **	3/8/2012	37.07	37.41	0.34	5,496.44
MW-1R **	6/14/2012	28.29	28.39	0.10	5,505.27
MW-1R	9/12/2012	NP	29.89	0.00	5,503.69
MW-1R **	12/21/2012	34.19	34.22	0.03	5,499.38
MW-1R	3/14/2013	NP	38.31	0.00	5,495.27
MW-1R	6/17/2013	NP	28.05	0.00	5,505.53
MW-1R	9/11/2013	NP	29.11	0.00	5,504.47
MW-1R	12/16/2013	NP	34.61	0.00	5,498.97
MW-1R	3/12/2014	NP	35.78	0.00	5,497.80
MW-1R	6/11/2014	NP	28.05	0.00	5,505.53
MW-1R	9/22/2014	NP	29.25	0.00	5,504.33
MW-1R	12/9/2014	NP	34.61	0.00	5,498.97
MW-1R	3/12/2015	NP	35.55	0.00	5,498.03
MW-1R	6/11/2015	NP	28.35	0.00	5,505.23
MW-1R	9/21/2015	NP	29.20	0.00	5,504.38
MW-1R	12/21/2015	NP	34.20	0.00	5,499.38
MW-1R	6/20/2016	NP	29.20	0.00	5,504.38
MW-1R	12/14/2016	NP	34.22	0.00	5,499.36
MW-1R	6/26/2017	NP	28.95	0.00	5,504.63
MW-1R	12/12/2017	NP	34.03	0.00	5,499.55
MW-1R	6/28/2018	NP	28.42	0.00	5,505.16
MW-1R	12/10/2018	NP	33.67	0.00	5,499.91
MW-1R	6/20/2019	NP	29.59	0.00	5,503.99
MW-1R	12/9/2019	NP	34.12	0.00	5,499.46
MW-1R	3/18/2020	NP	38.79	0.00	5,494.79

TABLE 1
GROUNDWATER ELEVATION SUMMARY

MCCOY GAS COM D #1E
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-1R	6/22/2020	NP	28.78	0.00	5,504.80
MW-1R	1/26/2021	NP	35.33	0.00	5,498.25
MW-1R	6/22/2021	NP	28.69	0.00	5,504.89
MW-1R	10/27/2021	NP	31.22	0.00	5,502.36
MW-2	5/17/2007	NP	30.56	0.00	5,505.12
MW-2	7/23/2007	NP	31.98	0.00	5,503.70
MW-2	9/27/2007	NP	32.44	0.00	5,503.24
MW-2	11/27/2007	NP	35.29	0.00	5,500.39
MW-2	5/13/2008	NP	31.98	0.00	5,503.70
MW-2	5/26/2009	NP	36.46	0.00	5,499.22
MW-2	5/25/2010	NP	29.88	0.00	5,505.80
MW-2	8/12/2010	NP	31.30	0.00	5,504.38
MW-2	11/17/2010	NP	34.61	0.00	5,501.07
MW-2	2/14/2011	NP	Dry	Dry	Dry
MW-2	5/17/2011	NP	30.60	0.00	5,505.08
MW-2	8/9/2011	NP	31.22	0.00	5,504.46
MW-2	11/9/2011	NP	33.70	0.00	5,501.98
MW-2	3/8/2012	NP	Dry	Dry	Dry
MW-2	6/14/2012	NP	29.66	0.00	5,506.02
MW-2	9/12/2012	NP	31.77	0.00	5,503.91
MW-2	12/21/2012	NP	36.44	0.00	5,499.24
MW-2	3/14/2013	NP	Dry	Dry	Dry
MW-2	6/17/2013	NP	29.45	0.00	5,506.23
MW-2	9/11/2013	NP	31.11	0.00	5,504.57
MW-2	12/16/2013	OBS	OBS	OBS	OBS
MW-2	3/12/2014	OBS	OBS	OBS	OBS
MW-2	6/11/2014	NP	30.26	0.00	5,505.42
MW-2	9/22/2014	NP	31.11	0.00	5,504.57
MW-2	12/9/2014	NP	34.31	0.00	5,501.37
MW-2	3/12/2015	NP	Dry	0.00	Dry
MW-2	6/11/2015	NP	30.00	0.00	5,505.68
MW-2	9/21/2015	NP	30.96	0.00	5,504.72
MW-2	12/21/2015	NP	Dry	0.00	Dry
MW-2	6/20/2016	NP	31.63	0.00	5,504.05
MW-2	12/14/2016	NP	Dry	0.00	Dry
MW-2	6/26/2017	NP	30.63	0.00	5,505.05
MW-2	12/12/2017	NP	Dry	0.00	Dry
MW-2	6/28/2018	NP	30.10	0.00	5,505.58
MW-2	12/10/2018	NP	Dry @ 34.37	0.00	Dry @ 34.37

TABLE 1
GROUNDWATER ELEVATION SUMMARY

MCCOY GAS COM D #1E
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-2	6/20/2019	NP	31.57	0.00	5,504.11
MW-2	12/9/2019	NP	Dry @ 34.33	0.00	Dry
MW-2	3/18/2020	NP	Dry/OBS @ 2.69	0.00	Dry
MW-2	6/22/2020	NP	30.37	0.00	5,505.31
MW-2	1/26/2021	NP	Dry @ 34.35	0.00	Dry
MW-2	6/22/2021	NP	Dry/OBS @ 2.70	0.00	Dry
MW-2	10/27/2021	NP	33.35	0.00	5,501.33
MW-3	5/17/2007	NP	21.55	0.00	5,505.56
MW-3	7/23/2007	NP	30.65	0.00	5,496.46
MW-3	9/27/2007	NP	24.02	0.00	5,503.09
MW-3	11/27/2007	NP	28.94	0.00	5,498.17
MW-3	5/12/2008	NP	22.55	0.00	5,504.56
MW-3	5/26/2009	NP	21.37	0.00	5,505.74
MW-3	5/25/2010	NP	20.99	0.00	5,506.12
MW-3	8/12/2010	NP	23.03	0.00	5,504.08
MW-3	11/17/2010	NP	26.85	0.00	5,500.26
MW-3	2/14/2011	NP	Dry	Dry	Dry
MW-3	5/17/2011	NP	21.49	0.00	5,505.62
MW-3	8/9/2011	NP	22.12	0.00	5,504.99
MW-3	11/9/2011	NP	25.69	0.00	5,501.42
MW-3	3/8/2012	NP	Dry	Dry	Dry
MW-3	6/14/2012	NP	20.97	0.00	5,506.14
MW-3	9/12/2012	NP	23.31	0.00	5,503.80
MW-3	12/21/2012	NP	30.61	0.00	5,496.50
MW-3	3/14/2013	NP	Dry	Dry	Dry
MW-3	6/17/2013	NP	20.80	0.00	5,506.31
MW-3	9/11/2013	NP	22.75	0.00	5,504.36
MW-3	12/16/2013	NP	31.95	0.00	5,495.16
MW-3	3/12/2014	NP	Dry	Dry	Dry
MW-3	6/11/2014	NP	20.93	0.00	5,506.18
MW-3	9/22/2014	NP	22.62	0.00	5,504.49
MW-3	12/9/2014	NP	29.24	0.00	5,497.87
MW-3	3/12/2015	NP	32.60	0.00	5,494.51
MW-3	6/11/2015	NP	21.30	0.00	5,505.81
MW-3	9/21/2015	NP	22.13	0.00	5,504.98
MW-3	12/21/2015	NP	30.65	0.00	5,496.46
MW-3	6/20/2016	NP	22.33	0.00	5,504.78
MW-3	12/14/2016	NP	31.10	0.00	5,496.01
MW-3	6/26/2017	NP	21.97	0.00	5,505.14

TABLE 1
GROUNDWATER ELEVATION SUMMARY

MCCOY GAS COM D #1E
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-3	12/12/2017	NP	30.44	0.00	5,496.67
MW-3	6/28/2018	NP	21.63	0.00	5,505.48
MW-3	12/10/2018	NP	29.65	0.00	5,497.46
MW-3	6/20/2019	NP	22.92	0.00	5,504.19
MW-3	12/9/2019	NP	30.79	0.00	5,496.32
MW-3	3/18/2020	NP	Dry	0.00	Dry
MW-3	6/22/2020	NP	21.72	0.00	5,505.39
MW-3	1/26/2021	NP	Dry	0.00	Dry
MW-3	6/22/2021	NP	21.76	0.00	5,505.35
MW-3	10/27/2021	NP	24.87	0.00	5,502.24

Notes:

AMSL - Above Mean Sea Level

BTOC - Below Top of Casing

NP - No Product

OBS - Obstruction in well

* - New Top of Casing Elevation; Casing Cut Off 1.55 Feet to Remove ORC Socks in May 2011, well designation changed to MW-1R

** - Groundwater elevation calculation: (Top of Casing Elevaton - Depth to Water) + (Product Thickness * 0.8)

TABLE 2
GROUNDWATER ANALYTICAL RESULTS SUMMARY

MCCOY GAS COM D #1E
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Groundwater Standard		**5**	**1,000**	**700**	**620**
MW-1	10/16/2006	**22**	**2,500**	**2,700**	**19,000**
MW-1	5/16/2007	**30**	760	**1,700**	**24,000**
MW-1	5/13/2008	<10	640	540	**11,000**
MW-1	1/21/2009	<100	**1,200**	**1,100**	**12,000**
MW-1	5/26/2009	<10	620	640	**11,000**
MW-1	5/25/2010	**130**	160	430	**7,100**
MW-1	8/12/2010	**120**	<120	260	**6,700**
MW-1	11/17/2010	**360**	<2,500	**1,400**	**16,000**
MW-1	2/14/2011	**16**	1,000	**870**	**13,000**
MW-1R*	5/17/2011	**300**	290	**850**	**13,000**
MW-1R	8/9/2011	<5	53.6	19.3	**6,220**
MW-1R	11/9/2011	**11**	<50	<5	**1,600**
MW-1R	3/8/2012	NS	NS	NS	NS
MW-1R	6/14/2012	**120**	110	**750**	**5,000**
MW-1R	9/12/2012	**78**	<250	120	**4,600**
MW-1R	12/21/2012	<25	<250	280	**7,400**
MW-1R	3/21/2013	**98**	<250	<25.0	**7,100**
MW-1R	6/17/2013	**66**	<250	94	**4,500**
MW-1R	9/11/2013	**33**	<25	76	**840**
MW-1R	12/13/2013	**52**	<100	160	**2,000**
MW-1R	3/12/2014	**100**	<120	680	**8,800**
MW-1R	6/11/2014	**36**	<25	430	**4,100**
MW-1R	9/22/2014	2.7	<25	490	**1,400**
MW-1R	12/9/2014	<9.5	<250	**840**	**8,500**
MW-1R	3/12/2015	**96**	<25	**860**	**8,900**
MW-1R	6/11/2015	<25	<250	610	**5,700**
MW-1R	9/21/2015	**24.8**	<5	525	**4,340**
MW-1R	12/21/2015	**92.9**	<250	**765**	**7,850**
MW-1R	6/20/2016	**55.5**	<25.0	617	**5,370**

TABLE 2
GROUNDWATER ANALYTICAL RESULTS SUMMARY

MCCOY GAS COM D #1E
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Groundwater Standard		**5**	**1,000**	**700**	**620**
MW-1R	12/14/2016	<25.0	<50.0	**961**	**9,700**
MW-1R	6/26/2017	<12.5	<25.0	457	**3,890**
MW-1R	12/3/2017	**108**	<100	**790**	**8,050**
MW-1R	6/28/2018	<5.0	<5.0	430	**3,200**
MW-1R	12/10/2018	<5.0	<5.0	**730**	**6,400**
MW-1R	6/19/2019	<2.5	<2.5	4.3	<5.0
MW-1R	12/9/2019	<1.0	<1.0	20	<2.0
MW-1R	3/18/2020	<1.0	<1.0	130	110
MW-1R	6/22/2020	<2.0	<2.0	21	12
MW-1R	1/26/2021	2.13	<1.0	184	305
MW-1R	6/22/2021	<1.0	<1.0	47	17
MW-1R	10/27/2021	<2.0	<2.0	39	230
MW-2	5/17/2007	<1.0	<1.0	<1.0	3.10
MW-2	5/13/2008	<1.0	<1.0	<1.0	<2.0
MW-2	5/25/2010	<1.0	<1.0	<1.0	<2.0
MW-3	5/17/2007	<1.0	<1.0	<1.0	<2.0
MW-3	5/12/2008	<1.0	<1.0	<1.0	<2.0
MW-3	5/25/2010	<1.0	<1.0	<1.0	<2.0

Notes:
µg/L - micrograms per liter
NMWQCC - New Mexico Water Quality Control Commission
NS - Not Sampled
MDL - Method Detection Limit
BOLD indicates the result exceeds the NMWQCC Standard
< indicates result is less than the stated laboratory method detection limit
* Casing Cut Off 1.55 Feet to Remove ORC Socks in May 2011, well designation changed to MW-1R

* The Laboratory was unable to report benzene any lower due to the high amount of xylenes present. This would cause the internal standard/surrogate to fail. Analytes were evaluated down to the MDL and they have been given a U (evaluated to the MDL and were not detected).

ENCLOSURE A – 2021 LABORATORY ANALYTICAL REPORTS

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

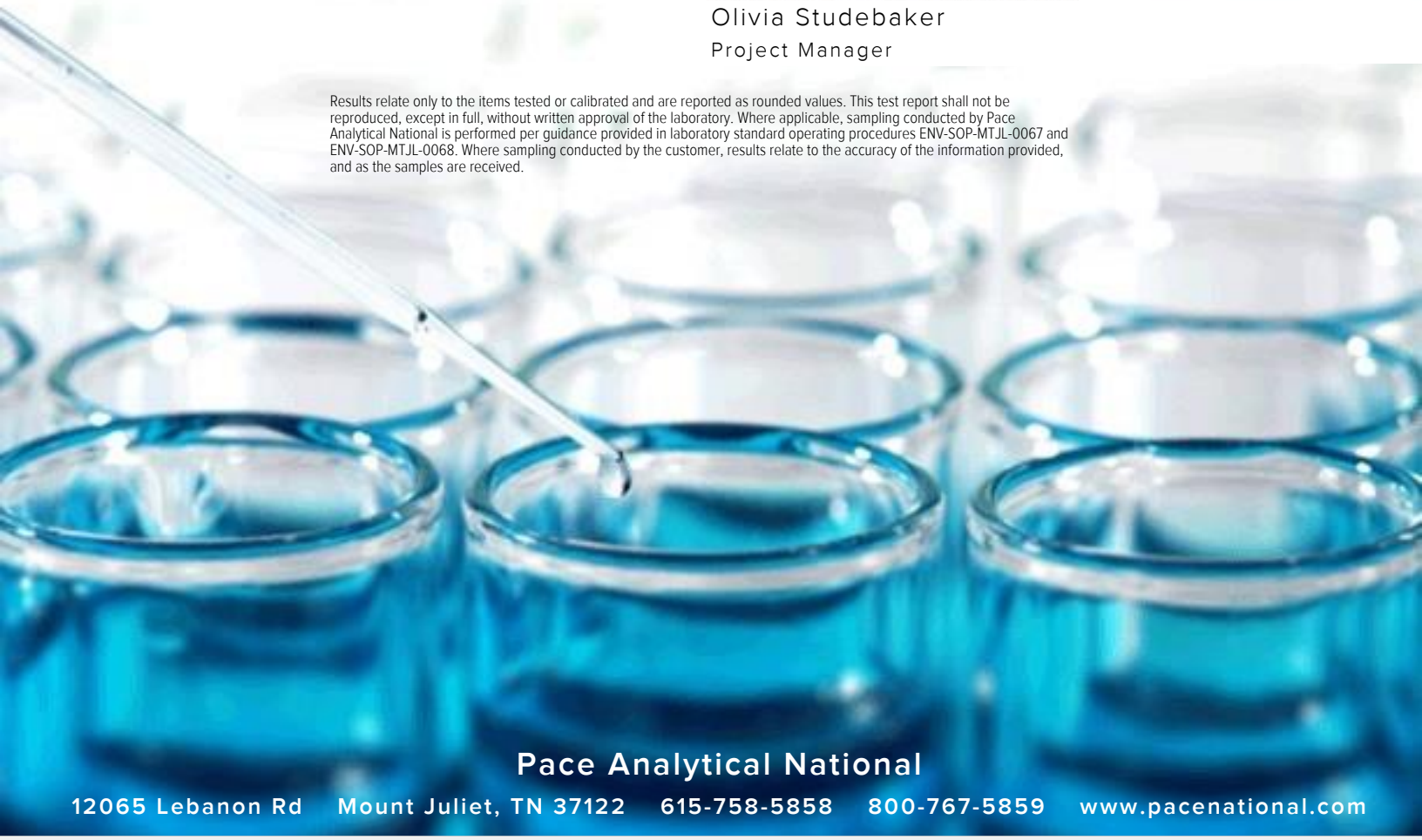
February 02, 2021

HilCorp-Farmington, NM

Sample Delivery Group:	L1310637
Samples Received:	01/27/2021
Project Number:	
Description:	McCoy Gas Com D 1E
Site:	MCCOY GAS COM D 1E
Report To:	Kurt Hoekstra 382 Road 3100 Aztec, NM 87410

Entire Report Reviewed By:

Olivia Studebaker
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1
Tc: Table of Contents 2
Ss: Sample Summary 3
Cn: Case Narrative 4
Sr: Sample Results 5
MW1R L1310637-01 5
Qc: Quality Control Summary 6
Volatile Organic Compounds (GC/MS) by Method 8260B 6
Gl: Glossary of Terms 7
Al: Accreditations & Locations 8
Sc: Sample Chain of Custody 9

SAMPLE SUMMARY

MW1R L1310637-01 GW

			Collected by	Collected date/time	Received date/time
			Kurt	01/26/21 10:52	01/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1612755	1	01/28/21 13:42	01/28/21 13:42	JHH	Mt. Juliet, TN

CASE NARRATIVE

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

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00213		0.00100	1	01/28/2021 13:42	WG1612755
Toluene	ND		0.00100	1	01/28/2021 13:42	WG1612755
Ethylbenzene	0.184		0.00100	1	01/28/2021 13:42	WG1612755
Total Xylenes	0.305		0.00300	1	01/28/2021 13:42	WG1612755
(S) Toluene-d8	*91.3*		*80.0-120*		*01/28/2021 13:42*	WG1612755
(S) 4-Bromofluorobenzene	*112*		*77.0-126*		*01/28/2021 13:42*	WG1612755
(S) 1,2-Dichloroethane-d4	*97.1*		*70.0-130*		*01/28/2021 13:42*	WG1612755

Method Blank (MB)

(MB) R3616994-3 01/28/21 09:08

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
Toluene	U		0.000278	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*101*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*98.4*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3616994-1 01/28/21 08:11 • (LCSD) R3616994-2 01/28/21 08:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	0.00549	0.00505	110	101	70.0-123			8.35	20
Ethylbenzene	0.00500	0.00521	0.00477	104	95.4	79.0-123			8.82	20
Toluene	0.00500	0.00535	0.00495	107	99.0	79.0-120			7.77	20
Xylenes, Total	0.0150	0.0159	0.0144	106	96.0	79.0-123			9.90	20
(S) Toluene-d8				*99.8*	*100*	*80.0-120*				
(S) 4-Bromofluorobenzene				*98.4*	*102*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*100*	*103*	*70.0-130*				

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.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

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	LA000356
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

Pace Analytical National 1606 E. Brazos Street Suite D Victoria, TX, 77901

Texas	T104704328-20-18

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

HilCorp-Farmington, NM

382 Road 3100
Aztec, NM 87410

Billing Information:
Clara Cardoza
PO Box 61529
Houston, TX 77208

Pres Chk

Report to: Kurt Hoekstra

Email To: jdeal@hilcorp.com;khoekstra@hilcorp.com

Project Description: McCoy Gas Com D 1E

City/State Collected:

Please Circle: PT MT CT ET

Phone: 505-486-9543

Client Project #

Lab Project # HILCORANM-MCCOY GAS

Collected by (print): KURT

Collected by (signature): Kurt Hoekstra

Immediately Packed on Ice N ___ Y X

Site/Facility ID # MCCOY GAS COM D 1E

P.O. #

Quote #

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Analysis / Container / Preservative

V8260BTEX 40mlAmb-HCl

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1310677

J088

Acctnum: HILCORANM
Template: T170511
Prelogin: P816024
PM: 823 - Olivia Studebaker
PB: CS 12/9/2020

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260BTEX 40mlAmb-HCl	Remarks	Sample # (lab only)
MW1R		GW		1-26	10:52	3	X		-01

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ___

Remarks:

pH ___ Temp ___

Flow ___ Other ___

Samples returned via: ___ UPS ✓ FedEx ___ Courier ___

Tracking # 9348 1611 2412

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y	N
COC Signed/Accurate:		Y	N
Bottles arrive intact:		Y	N
Correct bottles used:		Y	N
Sufficient volume sent:		X	N
If Applicable			
VOA Zero Headspace:		Y	N
Preservation Correct/Checked:		Y	N
RAD Screen <0.5 mR/hr:		Y	N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Kurt Hoekstra	1-26-21	1:55		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.2-1=.1 °C Bottles Received: 3
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Patricia Michael	Date: 1-27-21 Time: 0930

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 02, 2021

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

RE: McCoy OrderNo.: 2106B96

Dear Jennifer Deal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/23/2021 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2106B96**
Date Reported: **7/2/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW 1R
Project: McCoy **Collection Date:** 6/22/2021 12:05:00 PM
Lab ID: 2106B96-001 **Matrix:** GROUNDWA **Received Date:** 6/23/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	1.0		µg/L	1	6/23/2021 8:53:00 PM
Toluene	ND	1.0		µg/L	1	6/23/2021 8:53:00 PM
Ethylbenzene	47	1.0		µg/L	1	6/23/2021 8:53:00 PM
Xylenes, Total	17	1.5		µg/L	1	6/23/2021 8:53:00 PM
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	6/23/2021 8:53:00 PM
Surr: Dibromofluoromethane	98.0	70-130		%Rec	1	6/23/2021 8:53:00 PM
Surr: Toluene-d8	96.1	70-130		%Rec	1	6/23/2021 8:53:00 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative 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

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: **2106B96** RcptNo: 1

Received By: **Scott Anderson** **6/23/2021 8:45:00 AM** SPL

Completed By: **Desiree Dominguez** **6/23/2021 10:00:55 AM** DD

Reviewed By: JO 6.23.21

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° 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: KPG 6/23/21

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	1.2	Good				

Chain-of-Custody Record

Client: Hilcorp Energy

Mailing Address: Jennifer Deal

Phone #:

email or Fax#: Jdeal@hilcorp.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☒ EDD (Type) PDF

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: McCoy

Project #: TED178 2000G

Project Manager: Josh Adams

Sampler: Travis Short

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.3-0.1=1.2 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2106896	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6/22	1205	GW	MW1R	3(VOA)	HCl	-001	X									

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/22	1340		Natasha Deal		6/22/21	1340
6/22/21	1541		SPA CDO	6-23-21		8:45

Remarks:
Please cc' Josh.adams@WSP.com

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

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

November 08, 2021

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

RE: McCoy Gas Com D 1E OrderNo.: 2110D07

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/27/2021 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2110D07**
Date Reported: **11/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-1R
Project: McCoy Gas Com D 1E **Collection Date:** 10/27/2021 2:55:00 PM
Lab ID: 2110D07-001 **Matrix:** AQUEOUS **Received Date:** 10/27/2021 3:45:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **CCM**
Benzene	ND	2.0	D	µg/L	2	10/30/2021 3:44:00 PM
Toluene	ND	2.0	D	µg/L	2	10/30/2021 3:44:00 PM
Ethylbenzene	39	2.0	D	µg/L	2	10/30/2021 3:44:00 PM
Xylenes, Total	230	3.0	D	µg/L	2	10/30/2021 3:44:00 PM
Surr: 1,2-Dichloroethane-d4	93.5	70-130	D	%Rec	2	10/30/2021 3:44:00 PM
Surr: 4-Bromofluorobenzene	87.6	70-130	D	%Rec	2	10/30/2021 3:44:00 PM
Surr: Dibromofluoromethane	94.0	70-130	D	%Rec	2	10/30/2021 3:44:00 PM
Surr: Toluene-d8	98.6	70-130	D	%Rec	2	10/30/2021 3:44:00 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2110D07**

08-Nov-21

Client: HILCORP ENERGY

Project: McCoy Gas Com D 1E

Sample ID: **100NG 8260 LCS** SampType: **LCS** TestCode: **EPA Method 8260: Volatiles Short List**

Client ID: **LCSW** Batch ID: **R82467** RunNo: **82467**

Prep Date: Analysis Date: **10/30/2021** SeqNo: **2927912** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130			
Toluene	19	1.0	20.00	0	97.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.8	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.5	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130			
Surr: Toluene-d8	9.3		10.00		92.8	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 8260: Volatiles Short List**

Client ID: **PBW** Batch ID: **R82467** RunNo: **82467**

Prep Date: Analysis Date: **10/30/2021** SeqNo: **2927913** 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								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.5	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.6	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.2	70	130			
Surr: Toluene-d8	9.4		10.00		93.5	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
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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Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2110D07 RcptNo: 1

Received By: Cheyenne Cason 10/27/2021 3:45:00 PM

Completed By: Isaiah Ortiz 10/28/2021 9:53:19 AM

Reviewed By: MRG 10/28/21

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° 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: 10.28.21

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	1.6	Good	Not Present			

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: mkillough@hilcorp.com

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other_____

☐ EDD (Type) _____

Turn-Around Time:

X Standard ☐ Rush_____

Project Name: McCoy Gas Com D 1E

Project #:

Project Manager: Mitch Killough

Sampler: Kurt Hoekstra

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.6 - 0 = 1.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2110D07	BTEX Method 8260
10-27	2:55	Water	MW-1R	(3) 40ml VOA	HCL	001	X
				2			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10-27	1545	Kurt Hoekstra	Chris Ward		10/27/21	1545
10/27/21	1753	Chris Ward	Chris Ward	Courier	10/28/21	0700

Remarks: Special Pricing See Andy

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.

ENCLOSURE B – 2021 GROUNDWATER SAMPLE COLLECTION FORMS

Groundwater Sample Collection Form

Project Name:
Project Number:
Project Location: McCoy Gas Com D # 1E
Sampler: Kurt

Sample ID: MW # 1R
Sample Date: 1/26/2021
Laboratory: Pace
Analyses: BTEX 8021
Matrix: GW
Sample Time: 10:57
Shipping Method: Fed Ex

Depth to Water: 35.33
Time:
Total Depth of Well: 38.75
Depth to Product:

Vol. of Water to Purge: 1.67 (height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols
Method of Purging: Bailer
Method of Sampling: Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. (F)	Conductivity (us or ms)	Comments
10:57		1 gal	6.43	16.3	0.98 ms	

Comments:

Describe Deviations from SOP:

Signature: Kurt Hoekstra
Date: 1/26/2021

WSP USA Inc.
848 E. 2nd Ave.
Durango, Colorado 81301
T 970.385.1096

Groundwater Sample Collection Form

Project Name: Semi-Annual Groundwater Monitoring
Project Number:
Project Location: McCoy GC D#1E
Sampler: Travis Short

Sample ID: MW1R
Sample Date: 6/22/2021
Laboratory: Hall Environmental
Analyses: BTEX 8021
Matrix: Groundwater
Sample Time: 1265
Shipping Method: Hand Delivery

Depth to Water: 28.69
Time: 1150
Total Depth of Well: 38.83
Depth to Product: -

Vol. of Water to Purge: 5 gal (height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols
Method of Purging: PVC Bailer
Method of Sampling: PVC Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. (F) C	Conductivity (us or ms)	Comments
1152	0.25	0.25	7.01	17.9	7.41	clear, Slight HC odor
1154	0.25	0.5	7.01	17.7	7.32	↓
1156	0.25	0.75	7.01	17.7	7.31	
1158	0.25	1	7.01	17.6	7.31	

Comments: bailed dry @ 1 gal

Describe Deviations from SOP: None

Signature: [signature] Date: 6/22/2021

Groundwater Sample Collection Form

Project Name: _____ Project Location: McCoy Gas Com D # 1E
Project Number: _____ Sampler: Kurt

Sample ID: MW # 1R Matrix: GW
Sample Date: 10/27/2021 Sample Time: 2:55
Laboratory: Hall Shipping Method: _____
Analyses: BTEX 8021

Depth to Water: 31.22 Total Depth of Well: 38.75
Time: _____ Depth to Product: _____

Vol. of Water to Purge: 3.68 (height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols
Method of Purging: Bailer
Method of Sampling: Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. (C)	Conductivity (ms)	Comments
2:55		3.75 gal	6.29	15.8	0.65	

Comments: _____

Describe Deviations from SOP: _____

Signature: Kurt Hoekstra **Date:** 10/27/2021

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 87139

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 87139
	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 McCoy Gas Com D 1E: Content Satisfactory 1. Continue to collect samples on quarterly basis until eight (8) consecutive samples are below the NM WQCC standards. 2. Continue remediation efforts for recovering LNAPL. 3. Submit the next annual report as scheduled by April 1, 2024.	3/11/2024