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Bryan, Texas 77807
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October 29, 2021

Mr. Cory Smith, Environmental Specialist
New Mexico Oil Conservation Division – District 3
1000 Rio Brazos Road
Aztec, New Mexico 87410

Re: Status Report – 3rd Quarter 2021
Kaufman No. 1
San Juan County, New Mexico
OCD No.: AP-0138

Dear Mr. Smith,

On behalf of Hilcorp Energy Company (Hilcorp), Timberwolf Environmental, LLC (Timberwolf) prepared this letter to document the 3rd Quarter 2021 (3Q21) groundwater monitoring activities at the Kaufman No. 1 (Site). The Site is located approximately 9.1 miles north of Farmington in San Juan County, New Mexico (Figure 1).

Site Description and Environmental Setting

The Site is situated on Federal land (managed by the Bureau of Land Management (BLM)) and is immediately east of the La Plata River (Figures 2 and 3). The Site is comprised of approximately 1 acre, all of which is located within the La Plata River flood plain and adjacent to riparian zones or wetlands.

The Site was temporarily abandoned following a release in November 2018; equipment removed from service included: storage tanks, separators, and a glycol dehydrator. Other surface equipment at the Site includes a well head and gas meter.

The Site is situated in a rural area and surrounding land use is predominantly recreational and oil and gas production. According to the U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS), the Site soil consists of Walrees loam, 0 to 2 percent slope. This soil series consist of a loam underlain by stratified gravelly sand; native salinity is very slightly saline to moderately saline (2.0 to 8.0 millimhos per centimeter (mmhos/cm)).

An unnamed intermittent stream located approximately 500 feet (ft) south of the Site empties into the La Plata River flood plain and has deposited sufficient sand to form a small alluvial fan over the flood plain. The alluvial fan extends north within 100 ft of the Site and is visible on aerial photographs (e.g., Figure 3) and is characterized by sparse vegetation, with the understory most affected.

The average elevation at the Site is approximately 5,537 feet above mean sea level. Area topography is flat with a slight dip west, toward the La Plata River.

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Site History

On 11/16/18, approximately 8 barrels (bbls) of oil and 10 bbls of produced water was released from the storage tank. Enduring Resources was the operator of record at the time of the release; Hilcorp assumed operations of the Site on or about December 1, 2018.

After Hilcorp assumed operations, the well was temporarily abandoned. All surface equipment within the tank battery was removed, and impacted soil within the battery was excavated and disposed. The excavation was primarily along the eastern and southern portion of the tank battery. The excavation was approximately 50 ft by 60 ft; the excavation depth ranged from 1 ft to 5 ft. A safety fence was constructed along the perimeter of the excavation.

Six groundwater monitoring wells (i.e. MW1 – MW6) were installed in January 2019. On 07/02/19 and 07/03/19, Timberwolf conducted a wetland investigation; the purpose of the wetland investigation was to delineate the extent of the wetland features to comply with United States Army Corps of Engineers (USACE) during ongoing remedial activities.

On 10/08/19, Timberwolf conducted the initial quarterly groundwater monitoring event. The event consisted of groundwater collection, analysis, and elevation measurements to determine direction of groundwater flow. Samples were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX). Findings of the initial groundwater monitoring event are documented in the Stage 2 Abatement Plan.

On 11/06/19, Hilcorp contracted with Sierra Oilfield Services of Farmington, New Mexico to excavate impacted soil in and around the initial excavation (i.e. former tank battery). Soil exceeding soil-to-groundwater migration criteria and soil exceeding the ecological protective concentration limits (PCLs) was excavated and removed from the site. All excavation activities were completed on 11/08/19. The excavation was backfilled following confirmation samples.

On 11/19/19, Timberwolf contracted with NCE Surveys, Inc. of Farmington, New Mexico to survey the tops of casings of each monitor well and two steel rods relative to mean sea level. The perimeter of two riparian wetland features were also surveyed (as delineated on 07/02/19 and 07/03/19 with one approximately 30 ft to the north and one immediately adjacent to the south and east of the site).

In 2020 and at the request of the BLM, Threatened and Endangered Species surveys (i.e., T&E surveys) were conducted at the Site to determine the absence/presence of *Southwestern Willow Flycatcher* and *Yellow-billed Cuckoo*. Timberwolf contracted SME Environmental Consultants (SME) of Durango, Colorado, a biological consultant certified for T&E surveys, to conduct the T&E surveys at the Site. A total of six (6) T&E survey visits were conducted between 05/20/20 and 08/01/20. Findings of the T&E survey are documented in Timberwolf's *Status Report – 3rd Quarter 2020*, dated 09/20/20.

On 08/11/20, Timberwolf conducted an additional groundwater investigation at the Site. The purpose of the investigation was to determine if a residual groundwater plume was present between MW1 and MW5. To evaluate the area of concern, a groundwater sample was collected by installing a temporary sampling point in lieu of proposed MW7. Analytical results revealed that all constituents of concern (COCs) were below regulatory criteria. Findings of the additional groundwater investigation are documented in Timberwolf's *Status Report – 3rd Quarter 2020*, dated 09/20/20.



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The work conducted is documented in the following reports:

- *Site Characterization Report and Stage 1 Abatement Plan*, dated 06/18/19
- *Wetland Delineation (Revised)*, dated 10/03/19
- *Stage 2 Abatement Plan*, dated 01/03/20
- *Status Report – 1st Quarter 2020*, dated 04/28/20
- *Status Report – 2nd Quarter 2020*, dated 06/19/2020
- *Status Report – 3rd Quarter 2020*, dated 09/20/2020
- *Status Report – 4th Quarter 2020*, dated 11/25/2020
- *Status Report – 1st Quarter 2021*, dated 01/20/21
- *Status Report – 2nd Quarter 2021*, dated 07/01/21

Regulatory Criteria – Groundwater

Human health standards for usable groundwater (i.e., total dissolved solids (TDS) less than 10,000 milligrams per kilograms (mg/L)) have been established under NMAC 20.6.2§3103. Additionally, this statute provides standards for domestic water supply. These criteria provide standards for a variety of constituents, including: metals, anions, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), certain radioactive isotopes, salinity, and pH.

Based on site characterization activities conducted during the Stage 1 and Stage 2 Abatement Plans the identified constituents of concern for the Site are: benzene, toluene, ethylbenzene, and xylene (BTEX). The regulatory criteria for human health for these constituents are provided in Table 1.

Table 1. Groundwater Regulatory Criteria

Constituent	Regulatory Criteria ¹ (mg/L)
Benzene	0.01
Toluene	0.75
Ethylbenzene	0.75
Xylenes	0.62

¹New Mexico human health standard
 mg/L – milligrams per liter

3Q21 Groundwater Monitoring Event

On 09/09/21, Timberwolf conducted the 3Q21 groundwater monitoring event at the Site. Groundwater and surface water gauging, groundwater sample collection, and analytical results are documented below. Monitor well locations are shown in the attached Figure 4.

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River and Well Gauging

River elevations were not measured because recent flooding either damaged steel reference rods (i.e., North Stake and South Stake) or were inaccessible because of flood debris. Depth to water in monitor wells was measured using a water interface probe capable of measuring to the nearest one hundredth of a foot from the tops of casings. Prior to well gauging, well caps were removed, and water levels were allowed to equilibrate. Monitoring wells tops of casing and steel rods were surveyed on 11/19/19 and documented in Section 9 of the *Stage 2 Abatement Plan*.

Gauging data is recorded in Table A-1 (attached). Depth to groundwater measurements were subtracted from the corresponding monitor well elevations to determine the depth of groundwater relative to mean sea level in each well.

Timberwolf prepared a potentiometric surface elevation (PSE) map as shown in Figure 5. The 3Q21 PSE map revealed that groundwater flow across the Site was west-southwest towards the La Plata River with an average linear velocity of 19.7 feet per year (ft/yr).

Groundwater Sample Collection

The EPA low flow sampling technique has been employed at this Site but was not used during the 3Q21 sampling event due to an inoperative YSI probe. Therefore, the six sampling stations (i.e., MW1 through MW6) were sampled by purging three well volumes prior to sampling; this sample method is also an EPA approved technique for groundwater sampling.

The depths to water measurement for each well were subtracted from the well total depth to determine to length of the water column and well volumes for each well. A minimum of three times the well volumes were extracted from each well prior to sample collection. Dedicated tubing and a submersible pump were placed within each well's screened interval and used to produce water from each well. Water column lengths, three well volumes, and the purged volume of each monitor well are documented in the attached Table A-2.

Groundwater samples were collected immediately following well purging. Samples were collected directly into laboratory sample containers. Samples were labeled, stored on ice, and transported under proper chain-of-custody protocol to Hall Environmental Analytical Laboratories, Inc. in Albuquerque, New Mexico.

Groundwater Analytical Results

Groundwater samples were analyzed for BTEX by EPA Method 8260. Analytical results for the 3Q21 groundwater monitoring event are summarized in Table 2 below and shown in Figure 6. Cumulative analytical results from each groundwater sampling station are documented in Table A-3 (attached).



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Table 2. Groundwater Analytical Results – 3Q21

Sample Station	Date	Volatile Organic Compounds (mg/L)			
		B	T	E	X
MW1	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW2	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW3	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW4	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW5	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW6	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
Regulatory Criteria		0.01	0.75	0.75	0.62

BTEX – benzene, toluene, ethylbenzene, and xylenes

 – exceeds regulatory criteria

mg/L – milligrams per liter

Quality Assurance Program

To ensure quality assurance in laboratory data, Timberwolf collected a field duplicate sample and utilized a Trip Blank. The field duplicated (“Dup”) was collected from MW5 to evaluate laboratory reproducibility. The field duplicate was collected immediately after the MW5 sample to ensure homogeneity between the sample and the field duplicate. The acceptable limit for relative percent difference (RPD) between duplicate samples for organic compounds, such as the constituents of BTEX, is 30 percent relative percent difference (i.e., 30% RDP) or less. Formula used to calculate RPD is as follows:

$$RPD = \left(\frac{|sample\ result - duplicate\ result|}{\frac{sample\ result + duplicate\ result}{2}} \right) * 100$$

The Trip Blank was always maintained with the sampling kit to evaluate the potential for in-field contaminations or contaminants encountered traveling to and from the laboratory. Both the field duplicate and Trip Blank were analyzed for BTEX. Analytical results are documented in the attached laboratory report and summarized in Table 3.

Table 3. Quality Assurance Results – 3Q21

Sample ID	Date	Volatile Organic Compounds (mg/L)			
		B	T	E	X
MW5	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
Dup	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
Trip Blank	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002

mg/L – milligrams per liter

BTEX – benzene, toluene, ethylbenzene, and xylenes

The RPD between sample MW5 and the Dup was 0%, which demonstrates laboratory reproducibility between samples. Additionally, analytical results of the Trip Blank were below laboratory detection limits which indicates no in-field contamination.



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Conclusions

Based on analytical results of groundwater samples and the regulatory criteria, the following is concluded:

- BTEX concentrations were below regulatory human health criteria and laboratory detection limits at all sampling stations (i.e., MW1 – MW6)
- Groundwater flow across the Site is west-southwest towards the La Plata River

The 3Q21 groundwater monitoring event marks the eighth consecutive quarter in which all monitoring stations were below regulatory criteria for all constituents at the Site.

Further Actions

During the 4th quarter 2021, Timberwolf will submit a Site closure request for OCD consideration.

If you have any questions regarding this letter or need further assistance, please call us at 979-324-2139.

Sincerely,
Timberwolf Environmental, LLC



Kevin Cole
Project Manager

Jim Foster
President

Attachments: Figures
Tables
Laboratory Report and Chain-of-Custody Documents

cc. Mitch Killough, Hilcorp Energy Company



Figures

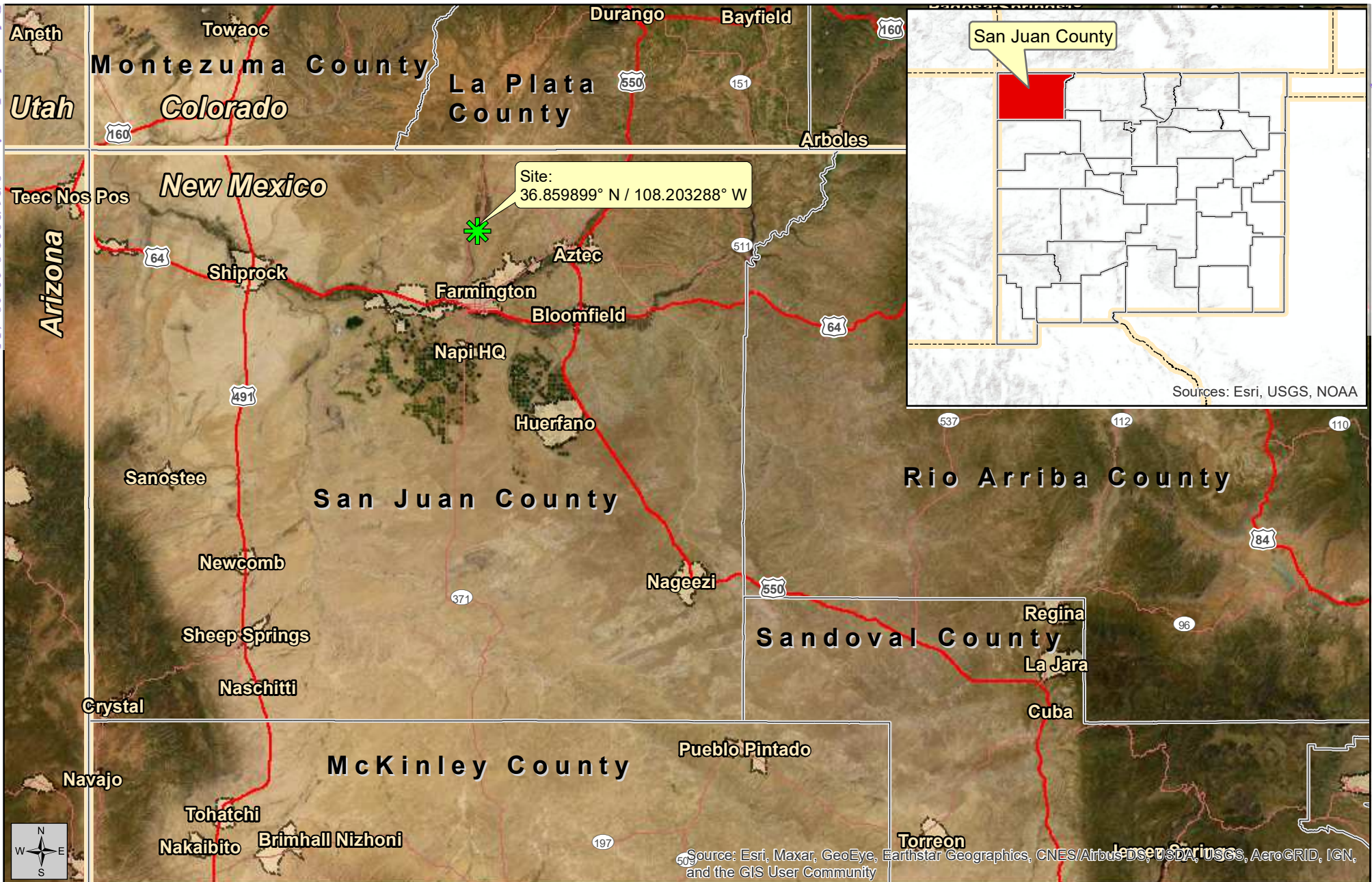


Figure 1
Site Location Map

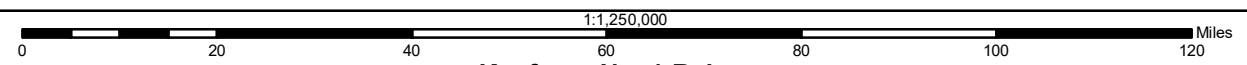
Status Report - 3rd Quarter 2021 (AP-0138)

October 29, 2021



Created By:
Kevin Cole
TE Project No.: HEC-180061

Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico



Datum: NAD83
Imagery Source: ESRI
Vector Source: ESRI and TE

Site

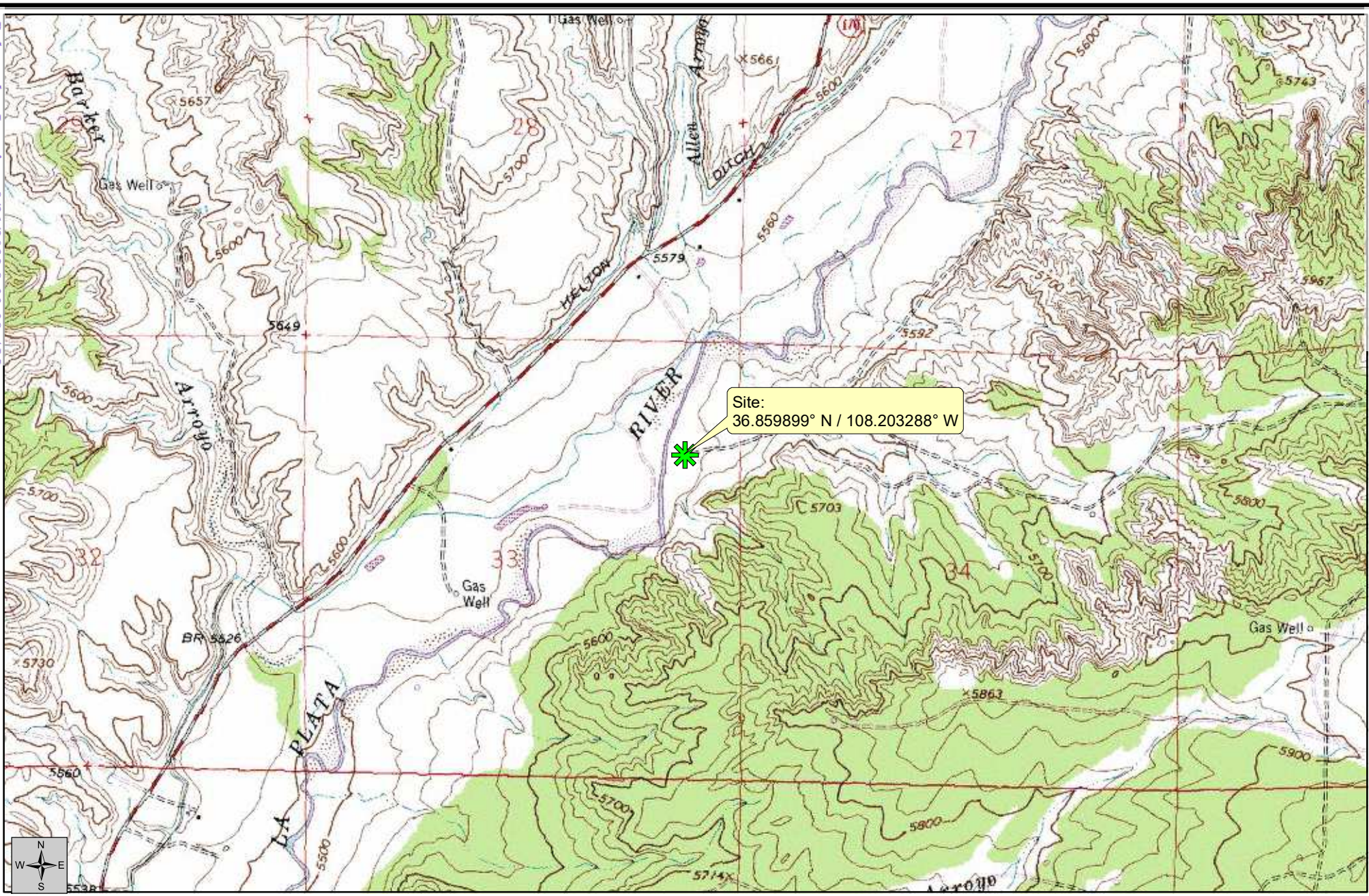


Figure 2
Topographic Map

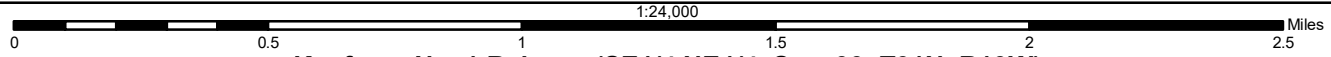
Status Report - 3rd Quarter 2021 (AP-0138)

October 29, 2021




Created By:
Kevin Cole
TE Project No.: HEC-180061

Kaufman No. 1 Release (SE1/4 NE1/4, Sec. 33, T31N, R13W)
Hilcorp Energy Company
San Juan County, New Mexico



Datum: NAD83
Imagery Source: USGS
Quad: Farmington North
Vector Source: TE

 Site

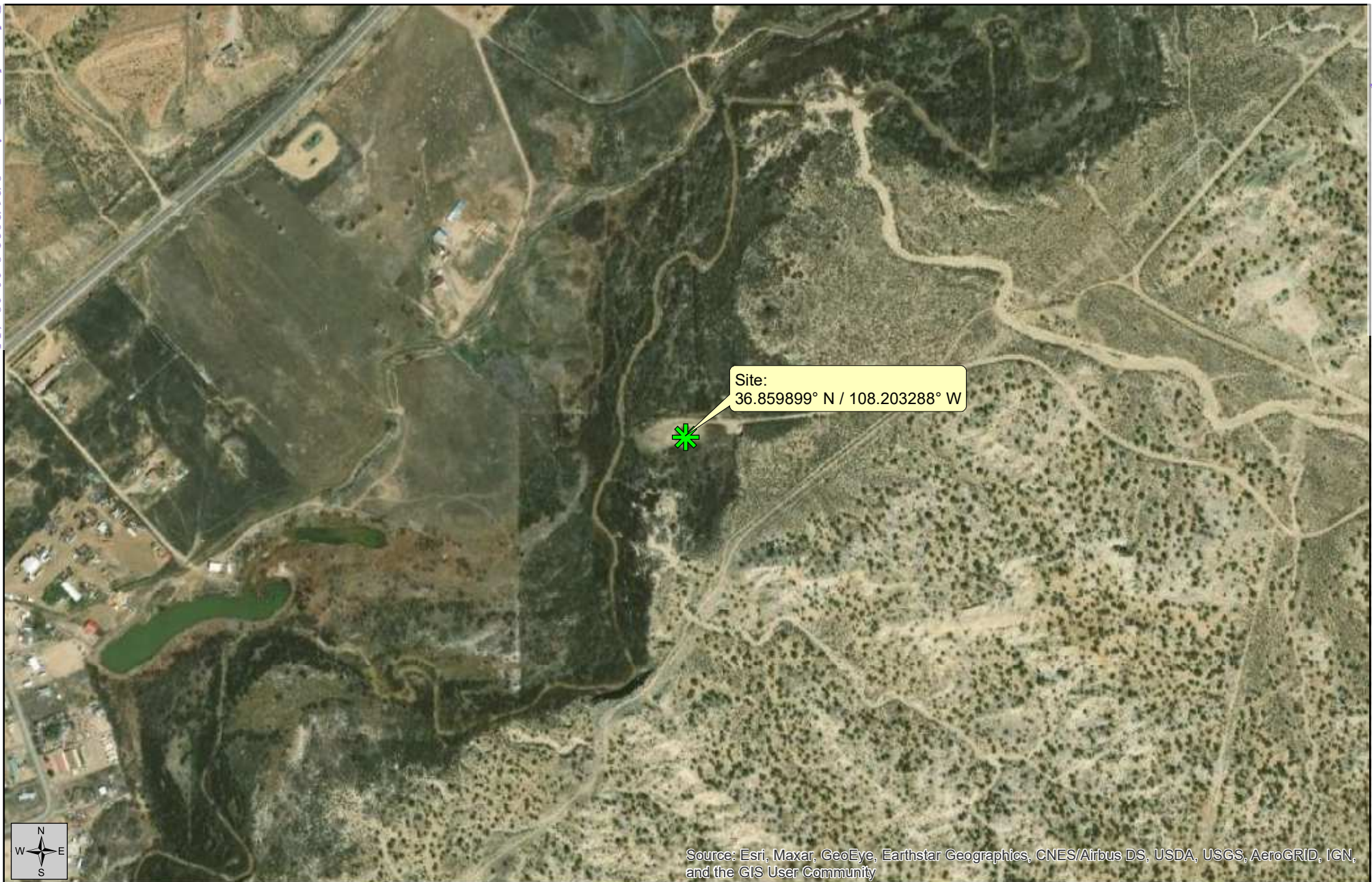


Figure 3
Aerial Map

Status Report - 3rd Quarter 2021 (AP-0138)

October 29, 2021



Created By:
Kevin Cole
TE Project No.: HEC-180061

1:8,000
0 1,000 2,000 3,000 4,000 Feet
Kaufman No. 1 Release (SE1/4 NE1/4, Sec. 33, T31N, R13W)
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Site



Figure 4
Monitor Well Location Map

Status Report - 3rd Quarter 2021 (AP-0138)

October 29, 2021



Created By:
Kevin Cole
TE Project No.: HEC-180061

Kaufman No. 1 Release (SE1/4 NE1/4, Sec. 33, T31N, R13W)
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: Google Earth
Vector Source: TE

- ◆ Monitor Well
- Kaufman No. 1 Well Head

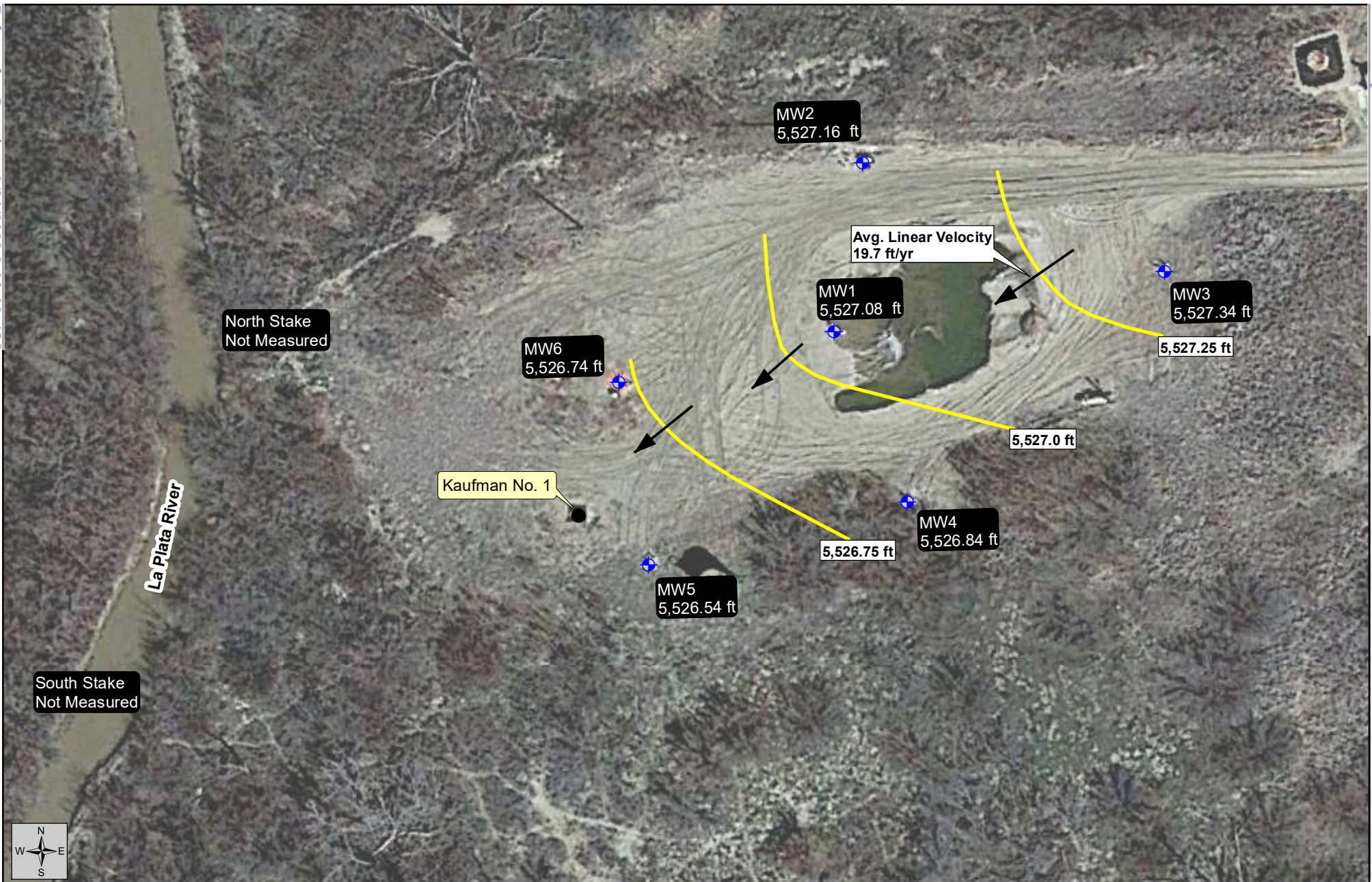


Figure 5
Potentiometric Surface
Elevation Map

Status Report - 3rd Quarter 2021 (AP-0138)

Gauging Date:
September 9, 2021



Created By:
Kevin Cole
October 29, 2021
TE Project No.: HEC-180061

Kaufman No. 1 Release (SE1/4 NE1/4, Sec. 33, T31N, R13W)
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: Google Earth
Vector Source: TE

- Monitor Well
- Surveyed Stake
- Kaufman No. 1 Well Head
- Groundwater Gradient
- Direction of Flow



Sample ID	Date	Volatile Organic Compounds (mg/L)			
		B	T	E	X
MW1	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW2	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW3	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW4	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW5	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW6	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
Regulatory Criteria		0.01	0.75	0.75	0.62

Figure 6
BTEX Results - 3Q21

Status Report - 3rd Quarter 2021 (AP-0138)

Sample Date:
September 9, 2021



Created By:
Kevin Cole
October 29, 2021
TE Project No.: HEC-180061

Kaufman No. 1 Release (SE1/4 NE1/4, Sec. 33, T31N, R13W)
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: Google Earth
Vector Source: TE

0 50 100 150 200 250 Feet

1:500

Monitor Well

Attached Tables

**Table A-1. Groundwater Gauging Data
Status Report - 3rd Quarter 2021
Kaufman No. 1 Release (AP-0138)
San Juan County, New Mexico**

Well ID	TOC (ft ^A)	Date	DTW (ft,btoc ^B)	PSE (ft ^A)	PSH (ft ^C)
MW1	5,529.97	09/09/21	2.89	5,527.08	--
MW2	5,530.64	09/09/21	3.48	5,527.16	--
MW3	5,531.28	09/09/21	3.94	5,527.34	--
MW4	5,531.78	09/09/21	4.94	5,526.84	--
MW5	5,530.79	09/09/21	4.25	5,526.54	--
MW6	5,530.56	09/09/21	3.82	5,526.74	--
North Stake	5,529.98	09/09/21	N/A	N/A	--
South Stake	5,529.38	09/09/21	N/A	N/A	--

TOC - top of casing

DTW - depth to water

PSE - potentiometric surface elevation

PSH - phase separated hydrocarbons

* - Volume of PSH was unmeasurable

^A ft - feet, referenced to mean sea level^B ft, btoc - feet below top of casing^C ft - thickness of PSH was unmeasurable

-- - PSH not detected

N/A - not applicable

**Table A-2. Well Purging Data
Status Report - 3rd Quarter 2021
Kaufman No. 1 (AP-0138)
San Juan County, New Mexico**

Well ID	Date	Time	Depth to Water (ft bgs)	Total Depth (ft bgs)	Water Column (ft)	3 Well Volumes (gallons)	Volume Purged (gallons)
MW1	09/09/21	1430	2.89	16.3	13.41	6.56	7.0
MW2	09/09/21	1255	3.48	13.0	9.52	4.66	7.5
MW3	09/09/21	1345	3.94	15.9	11.96	5.85	6.5
MW4	09/09/21	1530	4.94	15.0	10.06	4.90	5.5
MW5	09/09/21	1622	4.25	14.0	9.75	4.77	5.0
MW6	09/09/21	1730	3.82	14.4	10.58	5.17	6.0

* - YSI malfunction. Removed 3 pore volumes

mg/L - milligrams per liter

volume/linear Ft. of 2in internal diameter pipe = 0.1632 gal per linear foot

ft bgs - feet below ground surface

1 well volume = (water column*0.1632)

3 well volumes = (water column*0.1632)*3

**Table A-3. Cumulative Groundwater Analytical Data
Status Report - 3rd Quarter 2021
Kaufman No. 1 (AP-0138)
San Juan County, New Mexico**

Sample ID	Date	Volatile Organic Compounds (mg/L)			
		B	T	E	X
MW1	01/18/19	0.074	0.35	0.027	0.33
	10/09/19	< 0.001	< 0.001	< 0.001	< 0.001
	01/16/20	< 0.001	< 0.001	< 0.001	< 0.002
	04/09/20	< 0.001	< 0.001	< 0.001	< 0.0015
	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
	11/05/20	< 0.001	< 0.001	< 0.001	< 0.0015
	01/11/21	< 0.001	< 0.001	< 0.001	< 0.0015
	05/26/21	< 0.001	< 0.001	< 0.001	< 0.002
	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW2	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015
	10/09/19	< 0.001	< 0.001	< 0.001	< 0.001
	01/16/20	< 0.001	< 0.001	< 0.001	< 0.002
	04/09/20	< 0.001	< 0.001	< 0.001	< 0.0015
	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
	11/05/20	< 0.001	< 0.001	< 0.001	< 0.0015
	01/11/21	< 0.001	< 0.001	< 0.001	< 0.0015
	05/26/21	< 0.001	< 0.001	< 0.001	< 0.002
	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW3	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015
	10/09/19	< 0.001	< 0.001	< 0.001	< 0.001
	01/16/20	< 0.001	< 0.001	< 0.001	< 0.002
	04/09/20	< 0.001	< 0.001	< 0.001	< 0.0015
	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
	11/05/20	< 0.001	< 0.001	< 0.001	< 0.0015
	01/11/21	< 0.001	< 0.001	< 0.001	< 0.0015
	05/26/21	< 0.001	< 0.001	< 0.001	< 0.002
	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW4	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015
	10/09/19	< 0.001	< 0.001	< 0.001	< 0.001
	01/16/20	< 0.001	< 0.001	< 0.001	< 0.002
	04/09/20	< 0.001	< 0.001	< 0.001	< 0.0015
	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
	11/05/20	< 0.001	< 0.001	< 0.001	< 0.0015
	01/11/21	< 0.001	< 0.001	< 0.001	< 0.0015
	05/26/21	< 0.001	< 0.001	< 0.001	< 0.002
	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002

**Table A-3. Cumulative Groundwater Analytical Data
Status Report - 3rd Quarter 2021
Kaufman No. 1 (AP-0138)
San Juan County, New Mexico**

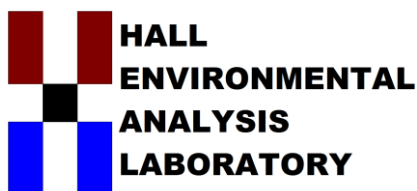
Sample ID	Date	Volatile Organic Compounds (mg/L)			
		B	T	E	X
MW5	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015
	10/09/19	0.0041	< 0.001	< 0.001	< 0.001
	01/16/20	0.0012	< 0.001	< 0.001	< 0.002
	04/09/20	< 0.001	< 0.001	< 0.001	< 0.0015
	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
	11/05/20	< 0.001	< 0.001	< 0.001	< 0.0015
	01/11/21	< 0.001	< 0.001	< 0.001	< 0.0015
	05/26/21	< 0.001	< 0.001	< 0.001	< 0.002
	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
MW6	01/18/19	< 0.001	< 0.001	< 0.001	< 0.0015
	10/09/19	< 0.001	< 0.001	< 0.001	< 0.001
	01/16/20	< 0.001	< 0.001	< 0.001	< 0.002
	04/09/20	< 0.001	< 0.001	< 0.001	< 0.0015
	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
	11/05/20	< 0.001	< 0.001	< 0.001	< 0.0015
	01/11/21	< 0.001	< 0.001	< 0.001	< 0.0015
	05/26/21	< 0.001	< 0.001	< 0.001	0.0038
	09/09/21	< 0.001	< 0.001	< 0.001	< 0.002
Regulatory Criteria		0.01	0.75	0.75	0.62

mg/L - milligrams per liter

BTEX - benzene, toluene, ethylbenzene, xylenes

- exceeds regulatory criteria

Laboratory Results and Chain-of-Custody Documents



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

September 21, 2021

Jim Foster
Timberwolf Environmental
1920 W Villa Maria Ste 205
Bryan, TX 77807
TEL: (979) 324-2139
FAX

RE: 180061

OrderNo.: 2109590

Dear Jim Foster:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/11/2021 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: 2109590

Date Reported: 9/21/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental

Lab Order: 2109590

Project: 180061

Lab ID: 2109590-001

Collection Date: 9/9/2021 2:30:00 PM

Client Sample ID: MW 1

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/14/2021 6:02:01 PM	B81272
Toluene	ND	1.0		µg/L	1	9/14/2021 6:02:01 PM	B81272
Ethylbenzene	ND	1.0		µg/L	1	9/14/2021 6:02:01 PM	B81272
Xylenes, Total	ND	2.0		µg/L	1	9/14/2021 6:02:01 PM	B81272
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	9/14/2021 6:02:01 PM	B81272

Lab ID: 2109590-002

Collection Date: 9/9/2021 12:55:00 PM

Client Sample ID: MW 2

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/14/2021 6:25:48 PM	B81272
Toluene	ND	1.0		µg/L	1	9/14/2021 6:25:48 PM	B81272
Ethylbenzene	ND	1.0		µg/L	1	9/14/2021 6:25:48 PM	B81272
Xylenes, Total	ND	2.0		µg/L	1	9/14/2021 6:25:48 PM	B81272
Surr: 4-Bromofluorobenzene	91.3	70-130		%Rec	1	9/14/2021 6:25:48 PM	B81272

Lab ID: 2109590-003

Collection Date: 9/9/2021 1:45:00 PM

Client Sample ID: MW 3

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/14/2021 6:49:33 PM	B81272
Toluene	ND	1.0		µg/L	1	9/14/2021 6:49:33 PM	B81272
Ethylbenzene	ND	1.0		µg/L	1	9/14/2021 6:49:33 PM	B81272
Xylenes, Total	ND	2.0		µg/L	1	9/14/2021 6:49:33 PM	B81272
Surr: 4-Bromofluorobenzene	88.5	70-130		%Rec	1	9/14/2021 6:49:33 PM	B81272

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		

Analytical Report

Lab Order: 2109590

Date Reported: 9/21/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental

Lab Order: 2109590

Project: 180061

Lab ID: 2109590-004

Collection Date: 9/9/2021 3:40:00 PM

Client Sample ID: MW 4

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/14/2021 7:13:21 PM	B81272
Toluene	ND	1.0		µg/L	1	9/14/2021 7:13:21 PM	B81272
Ethylbenzene	ND	1.0		µg/L	1	9/14/2021 7:13:21 PM	B81272
Xylenes, Total	ND	2.0		µg/L	1	9/14/2021 7:13:21 PM	B81272
Surr: 4-Bromofluorobenzene	88.8	70-130		%Rec	1	9/14/2021 7:13:21 PM	B81272

Lab ID: 2109590-005

Collection Date: 9/9/2021 4:22:00 PM

Client Sample ID: MW 5

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/14/2021 7:37:06 PM	B81272
Toluene	ND	1.0		µg/L	1	9/14/2021 7:37:06 PM	B81272
Ethylbenzene	ND	1.0		µg/L	1	9/14/2021 7:37:06 PM	B81272
Xylenes, Total	ND	2.0		µg/L	1	9/14/2021 7:37:06 PM	B81272
Surr: 4-Bromofluorobenzene	88.6	70-130		%Rec	1	9/14/2021 7:37:06 PM	B81272

Lab ID: 2109590-006

Collection Date: 9/9/2021 5:30:00 PM

Client Sample ID: MW 6

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/14/2021 8:00:48 PM	B81272
Toluene	ND	1.0		µg/L	1	9/14/2021 8:00:48 PM	B81272
Ethylbenzene	ND	1.0		µg/L	1	9/14/2021 8:00:48 PM	B81272
Xylenes, Total	ND	2.0		µg/L	1	9/14/2021 8:00:48 PM	B81272
Surr: 4-Bromofluorobenzene	91.3	70-130		%Rec	1	9/14/2021 8:00:48 PM	B81272

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		

Analytical Report

Lab Order: 2109590

Date Reported: 9/21/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental

Lab Order: 2109590

Project: 180061

Lab ID: 2109590-007

Collection Date: 9/9/2021 4:22:00 PM

Client Sample ID: DUP

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/14/2021 9:58:55 PM	B81272
Toluene	ND	1.0		µg/L	1	9/14/2021 9:58:55 PM	B81272
Ethylbenzene	ND	1.0		µg/L	1	9/14/2021 9:58:55 PM	B81272
Xylenes, Total	ND	2.0		µg/L	1	9/14/2021 9:58:55 PM	B81272
Surr: 4-Bromofluorobenzene	87.2	70-130		%Rec	1	9/14/2021 9:58:55 PM	B81272

Lab ID: 2109590-008

Collection Date:

Client Sample ID: Trip Blank

Matrix: TRIP BLANK

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/14/2021 10:22:24 PM	B81272
Toluene	ND	1.0		µg/L	1	9/14/2021 10:22:24 PM	B81272
Ethylbenzene	ND	1.0		µg/L	1	9/14/2021 10:22:24 PM	B81272
Xylenes, Total	ND	2.0		µg/L	1	9/14/2021 10:22:24 PM	B81272
Surr: 4-Bromofluorobenzene	87.1	70-130		%Rec	1	9/14/2021 10:22:24 PM	B81272

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		

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

WO#: 2109590

21-Sep-21

Client: Timberwolf Environmental**Project:** 180061

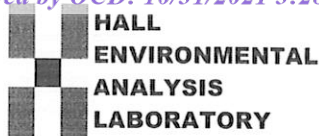
Sample ID: mb	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBW	Batch ID: B81272			RunNo: 81272						
Prep Date:	Analysis Date: 9/14/2021			SeqNo: 2870097		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	18		20.00		90.3	70	130			

Sample ID: 100ng btex lcs	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSW	Batch ID: B81272			RunNo: 81272						
Prep Date:	Analysis Date: 9/14/2021			SeqNo: 2870098		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.8	80	120			
Toluene	19	1.0	20.00	0	94.4	80	120			
Ethylbenzene	19	1.0	20.00	0	94.6	80	120			
Xylenes, Total	57	2.0	60.00	0	94.3	80	120			
Surr: 4-Bromofluorobenzene	18		20.00		91.0	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: Timberwolf Environmental

Work Order Number: 2109590

RcptNo: 1

Received By: Desiree Dominguez

9/11/2021 8:50:00 AM

ID-2

Completed By: Desiree Dominguez

9/11/2021 12:11:11 PM

ID-2

Reviewed By:

JN 9/13/21

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: HPG 9/13/21

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	0.8	Good	Yes			

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 58756

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 58756
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Accepted for the record. See App ID 75457 for most updated status (Abatement Completion Report submitted).	9/21/2022