3Q
2020

Status Report

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September 30, 2020

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

RCVD 10/9/2020

Accepted for Record

Re: Status Report – 3rd Quarter 2020
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 2020 (3Q20) activities at the Kaufman No. 1 (Site). Activities conducted during 3Q20 included:

- Quarterly groundwater monitoring
- Additional groundwater investigation
- Threatened and endangered species surveys (T&E surveys)

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.

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 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).

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

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

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

3Q20 Groundwater Monitoring Event

On 07/02/20, Timberwolf conducted the 3Q20 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.

River and Well Gauging

River elevations were measured relative to two steel rods (i.e., North Stake and South Stake) by using a 6-ft bubble level and water interface probe capable of measuring to the nearest one hundredth of a foot. Depth to water in monitor wells were also measured from the tops of casing using the water interface probe. 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. Likewise, river elevations were calculated by subtracting the measured depth to water from the top of each steel rod. Timberwolf prepared a potentiometric surface elevation (PSE) map as shown in Figure 5. The 3Q20 PSE map revealed that groundwater flow across the Site was west-southwest towards the La Plata River with an average linear velocity of 38.7 feet per year (ft/yr).

Groundwater Sample Collection

The six sampling stations (i.e., MW1 through MW6) were sampled using the EPA low-flow technique. A submersible pump was placed within the screened interval of each well. Water was extracted from each well and pumped through a flow-through cell equipped with a YSI probe. Field water quality parameters were analyzed and recorded, which included: dissolved oxygen, conductivity, pH, temperature, and ORP. Groundwater stabilization parameters are documented in the attached Table A-2. After water quality parameters stabilized, the YSI flow-through cell was bypassed and samples were collected directly into laboratory-provided 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 the following constituents: BTEX by EPA Method 8260. Cumulative analytical results from each groundwater sampling station is documented in Table A-3 (attached). Analytical results for the 3Q20 groundwater monitoring event are summarized in Table 2 below and shown in Figure 6.

Table 2. Groundwater Analytical Results – 3Q20

Sample Station	Date	Volatile Organic Compounds (mg/L)			
		B	T	E	X
MW1	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW2	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW3	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW4	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW5	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW6	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
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 is 30 percent relative percent difference (i.e., 30% RDP) or less. Formula used to calculate RPD is as follows:

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

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 – 3Q20

Sample ID	Date	Volatile Organic Compounds (mg/L)			
		B	T	E	X
MW5	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
Dup	07/02/20	<0.001	< 0.001	< 0.001	< 0.0015
Trip Blank	07/02/20	<0.001	<0.001	<0.001	< 0.0015

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 revealed no indication of in-field contamination.

Additional Groundwater Investigation

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 MW7 as proposed in "Further Actions" section of the *Status Report – 2nd Quarter 2020*. Location of temporary sampling point is shown in Figure 7.

Groundwater at the Site is approximately 4.5 ft below ground surface (bgs). To install the temporary sampling point, a boring was first installed to a depth of 3.5 ft utilizing a 2-inch stainless-steel hand auger. A ¾ inch x 6 ft steel pipe fitted with an expendable tip to prevent soil from clogging pipe was driven into the ground using a T-post driver. The steel pipe was driven to a depth of 5.5 ft to intercept the groundwater bearing sand. The steel pipe was retracted approximately 6 inches to expel the expendable tip to allow groundwater to flow into the pipe.

A groundwater sample (i.e., HP1) was collected from the temporary sampling point using a 3/8-inch bailer. Sample HP1 was submitted to Hall Environmental for BTEX analysis. Analytical results of HP1 revealed all constituents of BTEX were below the Site's regulatory criteria. Laboratory results are documented in the attached laboratory report and summarized in the Table 4 below.

Table 4. Additional Groundwater Investigation – Analytical Results

Sample ID	Date	Volatile Organic Compounds (mg/L)			
		B	T	E	X
HP1	08/11/20	0.0055	< 0.005	0.012	0.01
Regulatory Criteria		**0.01**	**0.75**	**0.75**	**0.62**

mg/L – milligrams per liter
BTEX – benzene, toluene, ethylbenzene, and xylenes

Following groundwater sampling, Timberwolf personnel removed the steel pipe and plugged the borehole from total depth to surface with bentonite.

Threatened and Endangered Species Survey

At the request of the BLM, T&E surveys were conducted at the Site to determine the absence/presence of *Southwestern Willow Flycatcher* and *Yellow-billed Cuckoo*, which are listed under the Endangered Species Act (ESA) (16[United States Code] USC 1531 et seq.) of 1973.

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. The surveys began on 05/20/20 and included a total of six T&E survey visits between 05/20/20 and 08/07/20. The survey area is shown in Figure 8.

During 3Q20, SME completed the final three of the six T&E survey visits. The 4th T&E survey visit was conducted on 07/02/20; the 5th visit was conducted on 07/17/20; and the 6th visit was conducted on 08/01/20.

Survey Parameters and Findings – Southwestern Willow Flycatcher

The Southwestern willow flycatcher survey was conducted within suitable habitat and in accordance with guidelines established in: *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher, U.S. Geological Survey Techniques and Methods 2A-10*.

The survey included five (5) separate visits over three (3) survey periods, the two willow flycatchers responded to call-playback on one (1) visit that was conducted on May 20, 2020. However, the birds were observed outside of the nesting period and therefore could not be positively identified as Southwestern willow flycatchers. The lack of detections during nesting periods indicates the survey area was not utilized by breeding Southwestern willow flycatchers in 2020.

Survey Parameters and Findings – Yellow-billed Cuckoo

The Yellow-billed cuckoo survey was conducted within suitable habitat and in accordance with guidelines established in: *A Natural Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo* (Halterman et al. 2016).

The survey included four (4) separate visits over three (3) survey periods, the Yellow-billed cuckoo was not observed and did not respond to call-playback. SME described the habitat suitability as "marginal" and nesting potential in the habitat is "likely low". Lack of detections in the survey area indicates breeding Yellow-billed cuckoos did not utilize the habitat in 2020.

T&E Survey reports have been submitted by SME Environmental Consultants to the BLM and United States Fish and Wildlife Service (USFWS). Each T&E Survey report documents are attached.

Conclusions

Major findings concluded from the 3Q20 activities are summarized below:

- Quarterly groundwater monitoring revealed that:
  - Concentrations of BTEX were below human health criteria and laboratory detection limits in all samples (i.e., MW1 – MW6)
  - Groundwater flow across the Site is west-southwest towards the La Plata River
- Additional groundwater investigation revealed:
  - Concentrations of benzene, ethylbenzene, and xylene in sample HP1 were above laboratory detection limits but below established human health criteria limits
  - This demonstrates that groundwater in the area of concern (i.e., between MW1 and MW5) does not present a risk to human health
  - Toluene concentrations in HP1 were below laboratory detection limits and established human health criteria
- T&E surveys and subsequent findings report were completed during 3Q20. The major findings of the surveys included:
  - The lack of detections during nesting periods indicates the survey area was not utilized by breeding Southwestern willow flycatchers in 2020
  - Lack of detections in the survey area indicates breeding Yellow-billed cuckoos did not utilize the habitat in 2020

Further Actions

Timberwolf will conduct a quarterly groundwater monitoring event at the Site during the 4th quarter of 2020.

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

Sincerely,
Timberwolf Environmental, LLC

Michael Morse
Project Scientist

Jim Foster
President

Attachments: Figures
Tables
Threatened and Endangered Species Survey Reports
Laboratory Report and Chain-of-Custody Documents

cc. Jennifer Deal – Hilcorp Energy Company

Figures

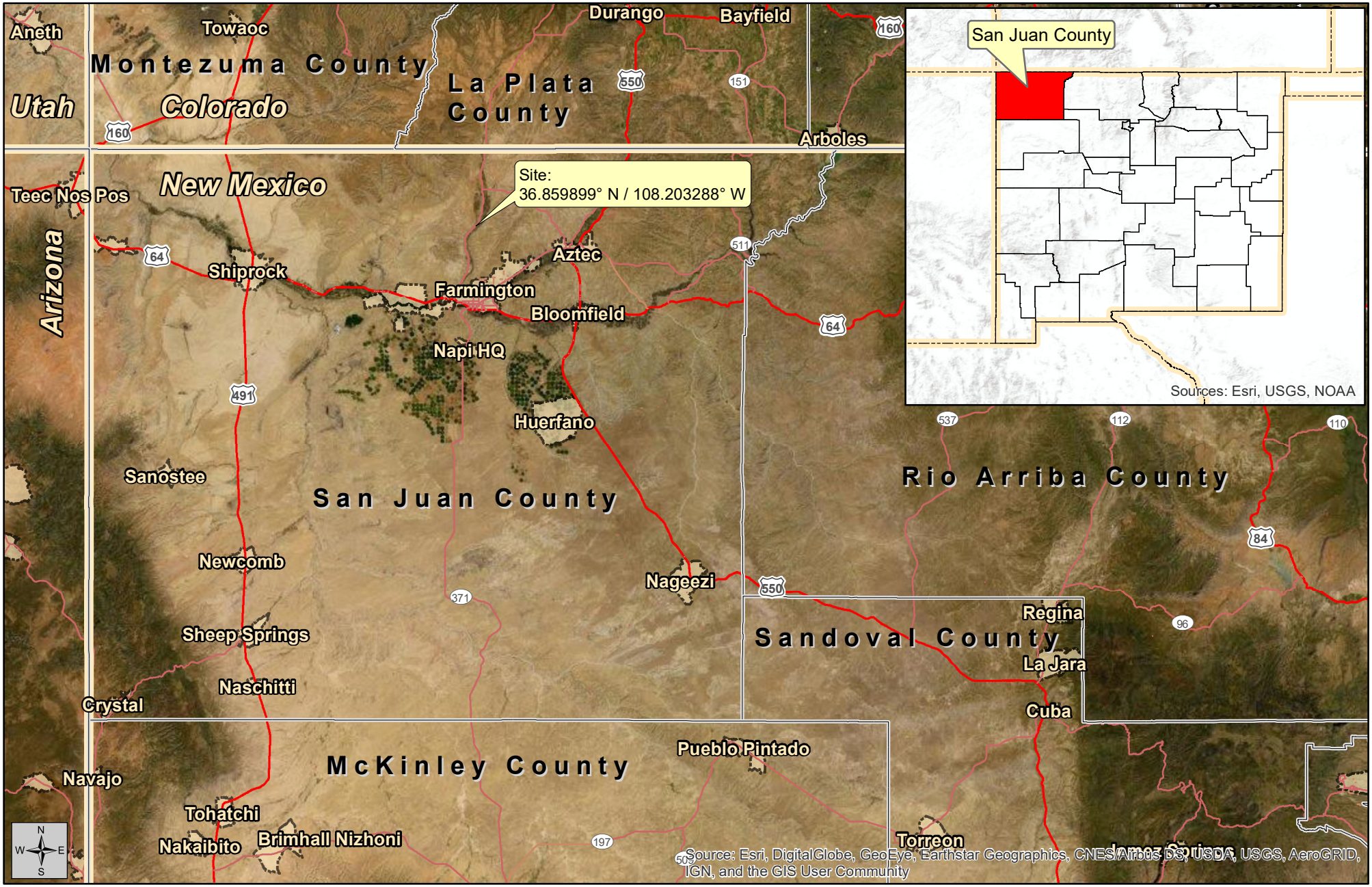


Figure 1 **Site Location Map**	**Status Report - 3rd Quarter 2020 (AP-0138)**	**July 8, 2020**
TIMBERWOLF ENVIRONMENTAL	1:1,250,000 0 20 40 60 80 100 120 Miles **Kaufman No. 1 (SE1/4 NE1/4, Sec. 33, T31N, R13W)** **Hilcorp Energy Company** **San Juan County, New Mexico**	* Site
Created By: Kevin Cole TE Project No.: HEC-180061	Datum: NAD83 Imagery Source: ESRI Vector Source: ESRI and TE	

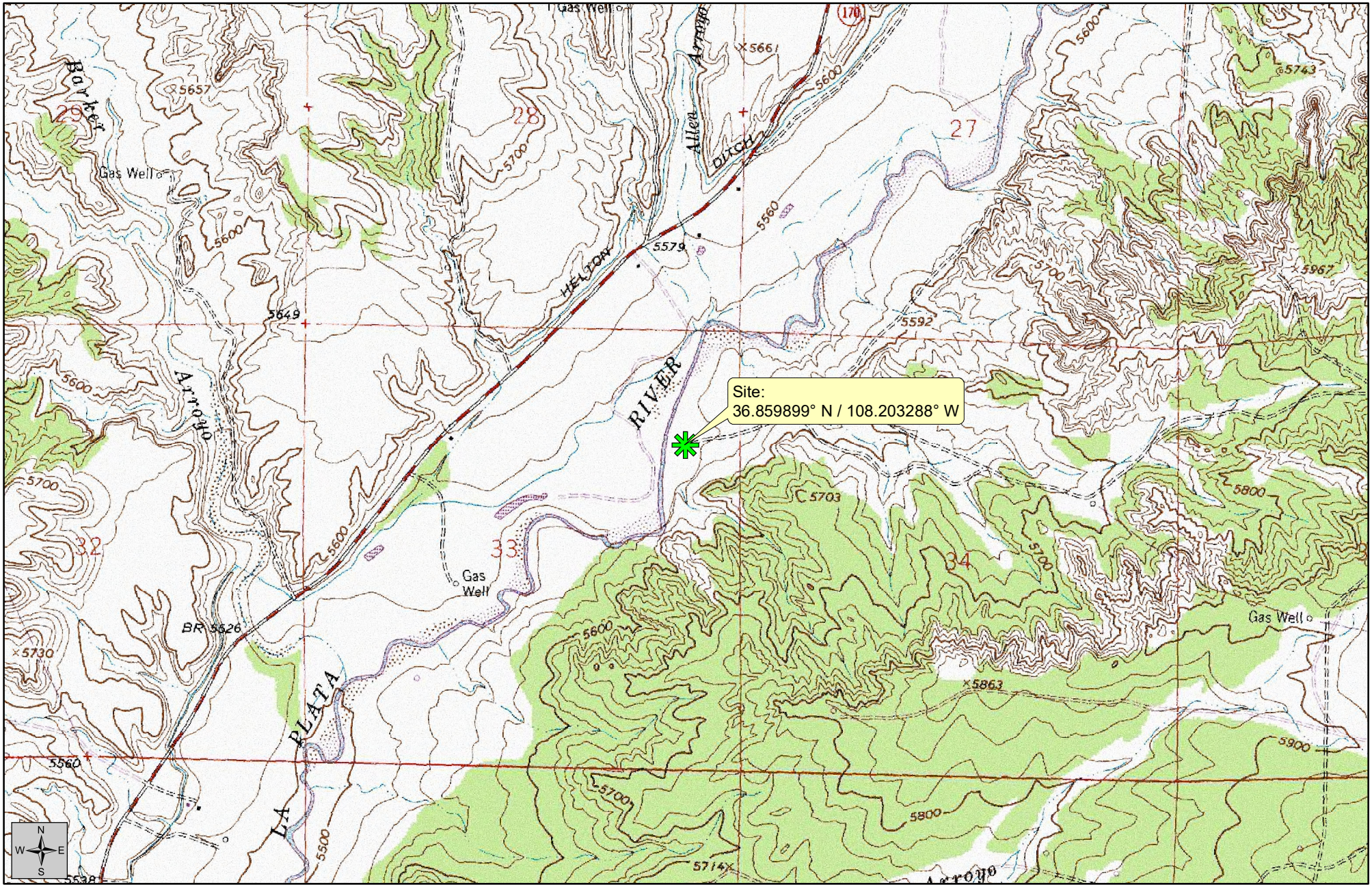


Figure 2
Topographic Map

Status Report - 3rd Quarter 2020 Report (AP-0138)

July 8, 2020

1:24,000

0 0.5 1 1.5 2 2.5 Miles

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

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

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

TIMBERWOLF ENVIRONMENTAL

Site

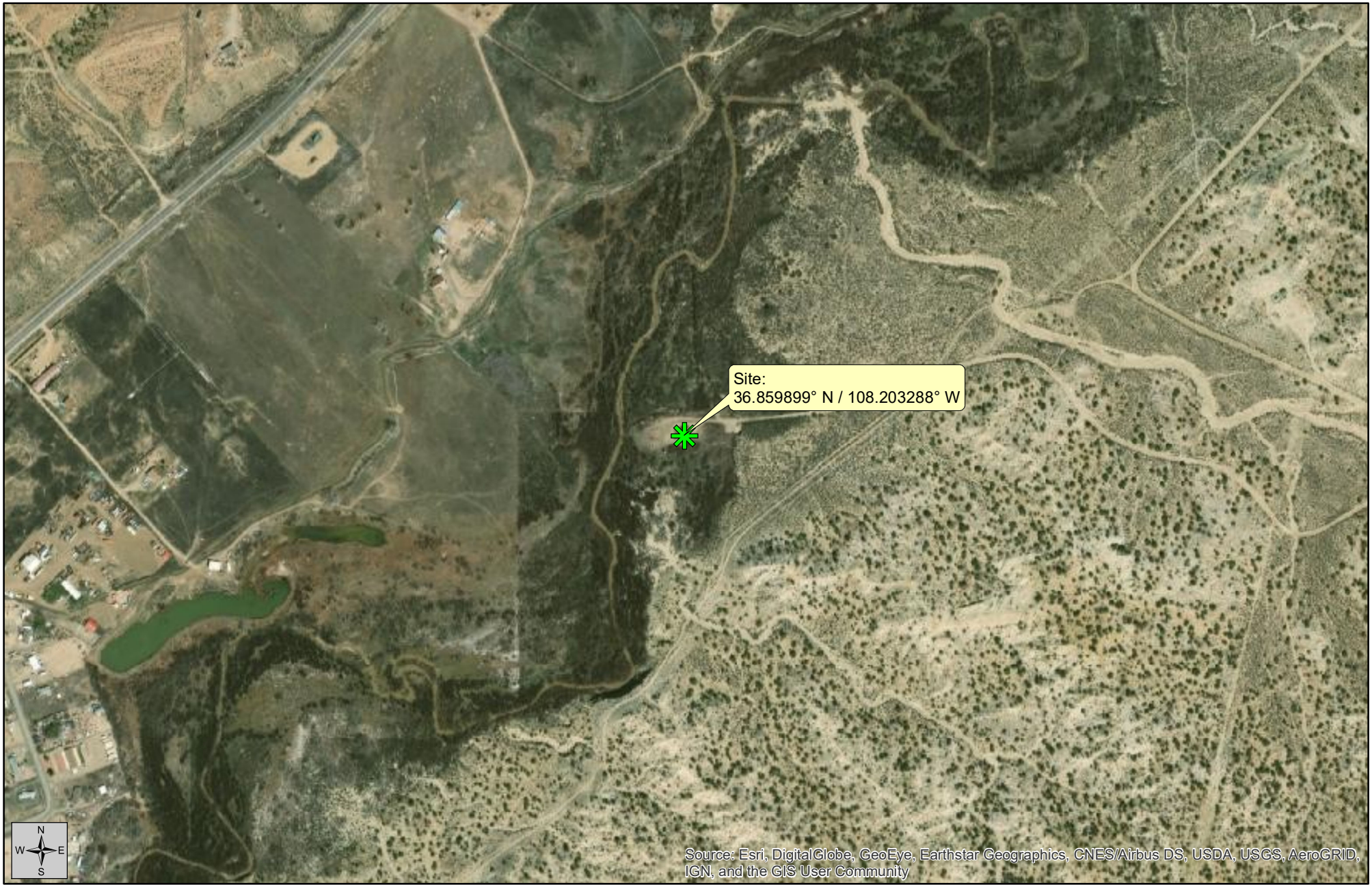


Figure 3
Aerial Map

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

July 8, 2020

TIMBERWOLF ENVIRONMENTAL

1:8,000

0 1,000 2,000 3,000 4,000 Feet

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

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

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Site

Figure 4
Monitor Well Location Map

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

July 8, 2020

TIMBERWOLF ENVIRONMENTAL

1:500

0 50 100 150 200 250 Feet

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

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

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

Monitor Well
Kaufman No. 1 Well Head

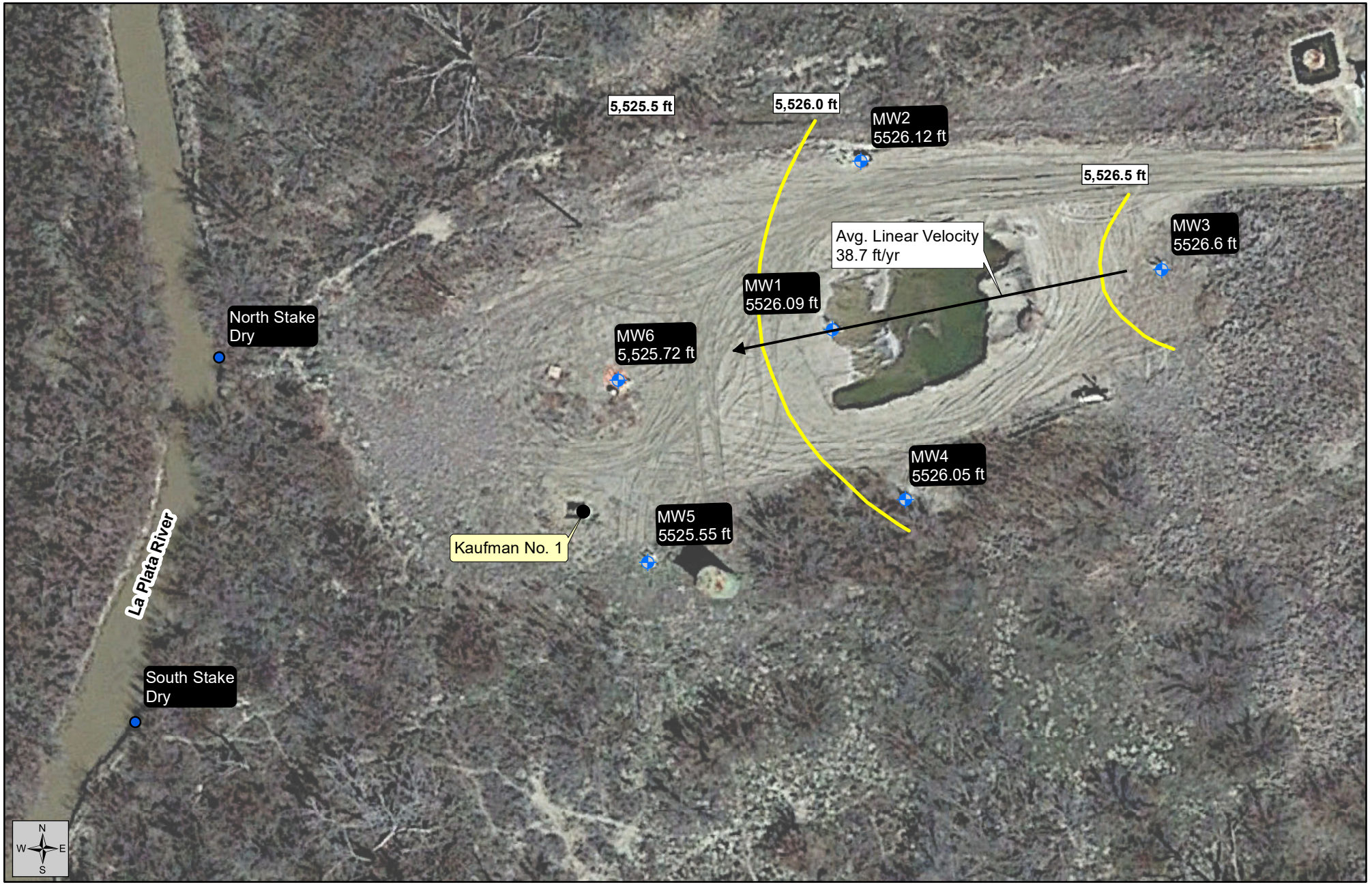


Figure 5
Potentiometric Surface Elevation Map

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

Gauging Date:
July 2, 2020

1:500

0 50 100 150 200 250 Feet

TIMBERWOLF ENVIRONMENTAL

Created By:
Chris Perez
July 8, 2020
TE Project No.: HEC-180061

Kaufman No. 1 (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	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW2	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW3	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW4	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW5	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
MW6	07/02/20	< 0.001	< 0.001	< 0.001	< 0.0015
Regulatory Criteria		**0.01**	**0.75**	**0.75**	**0.62**

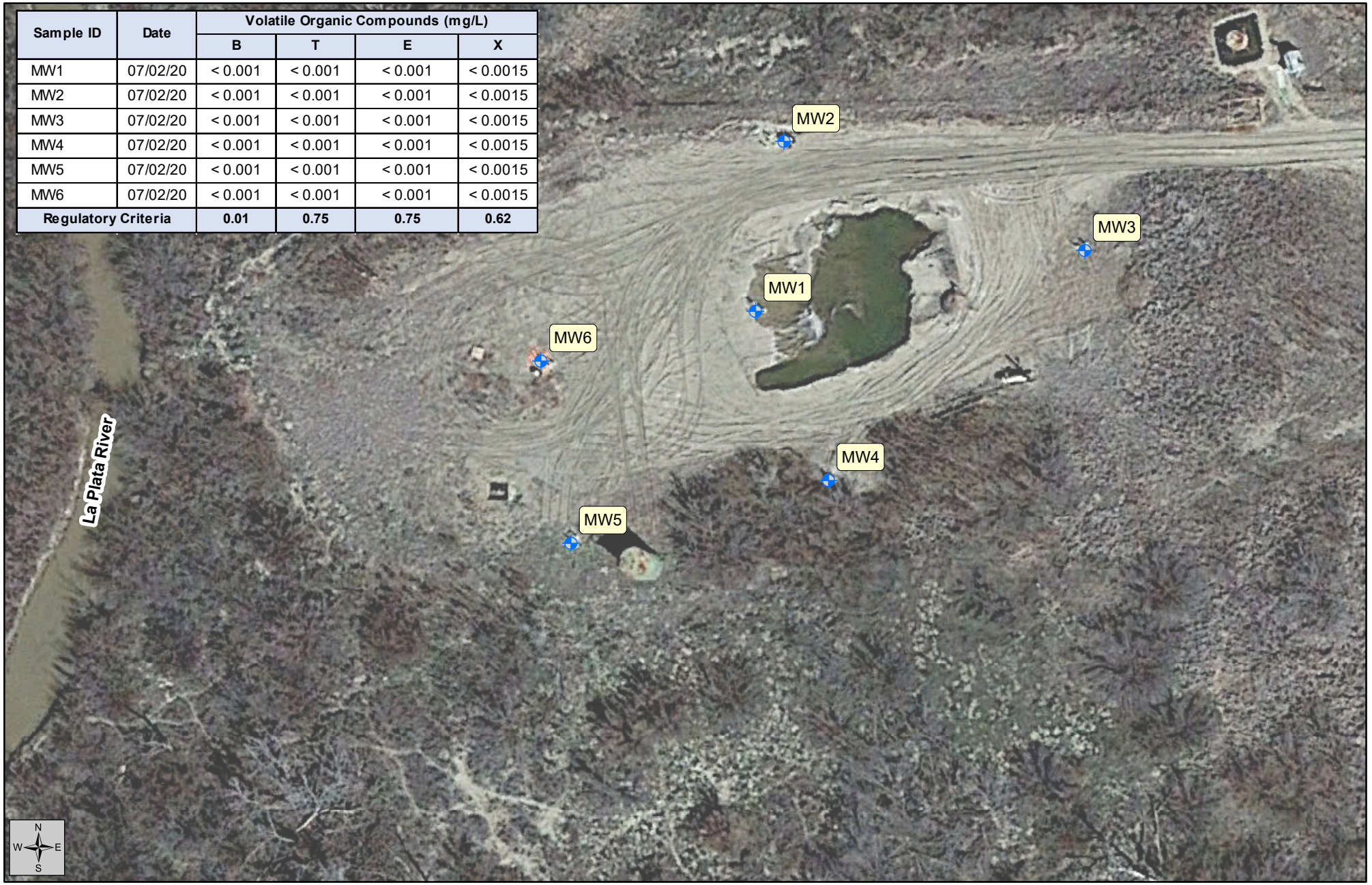


Figure 6
BTEX Results - 3Q20

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

Sample Date:
July 2, 2020

TIMBERWOLF ENVIRONMENTAL

1:500

0 50 100 150 200 250 Feet

Created By:
Chris Perez
July 6, 2020
TE Project No.: HEC-180061

Kaufman No. 1 (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

Sample ID	Date	Volatile Organic Compounds (mg/L)			
		B	T	E	X
HP1	08/11/20	0.0055	< 0.005	0.012	0.01
Regulatory Criteria		**0.01**	**0.75**	**0.75**	**0.62**

Figure 7
Additional Groundwater Investigation

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

Sample Date:
August 11, 2020

1:500

0 50 100 150 200 250 Feet

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

Monitor Well
Temporary Sampling Point
Kaufman No. 1 Well Head
Excavation

TIMBERWOLF ENVIRONMENTAL

Created By:
Chris Perez
TE Project No.: HEC-180061

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

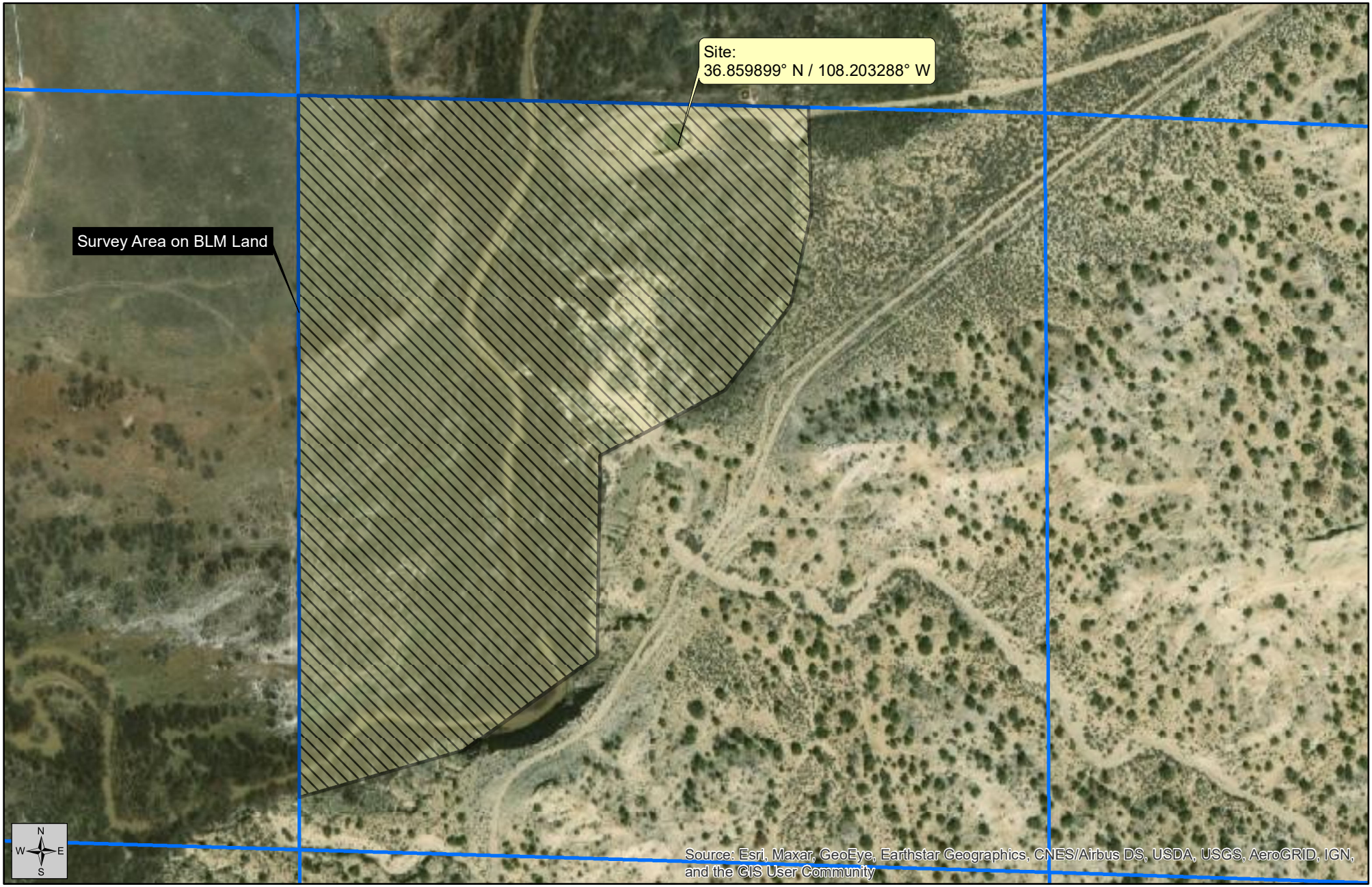


Figure 8
Threatened and Endangered Speices Survey Area

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

July 8, 2020

TIMBERWOLF ENVIRONMENTAL

1:3,500

0 500 1,000 1,500 2,000 Feet

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

Created By:
Chris Perez
TE Project No.: HEC-180061

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Site
Survey Area

Attached Tables

Table A-1. Groundwater Gauging Data
Status Report - 3rd Quarter 2020
Kaufman No. 1
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	07/02/20	3.88	5,526.09	--
MW2	5,530.64	07/02/20	4.52	5,526.12	--
MW3	5,531.28	07/02/20	4.68	5,526.60	--
MW4	5,531.78	07/02/20	5.73	5,526.05	--
MW5	5,530.79	07/02/20	5.24	5,525.55	--
MW6	5,530.56	07/02/20	4.84	5,525.72	--
North Stake	5,529.98	07/02/20	Dry		--
South Stake	5,529.38	07/02/20	Dry		--

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 unmeasureable

-- - PSH not detected

Table A-2. Groundwater Stabilization Parameters
Status Report - 3rd Quarter 2020
Kaufman No. 1
San Juan County, New Mexico

Well ID	Date	Time	Amount Purged (gallons)	Depth to Water (ft bgs)	Temperature (˚C)	Disolved Oxygen (mg/L)	Electric Conductivity (mS/cm)	pH[1]	Oxidation Reduction Potential (mV)
MW1	07/02/20	1138	8	4.16	12.4	--	0.137	7.29	4.80
		1140	9	4.16	12.4	--	0.135	7.29	4.60
		1142	10	4.16	12.4	--	0.133	7.29	4.50
MW2	07/02/20	845	5	5.25	16.9	--	0.580	7.61	-88.5
		847	6	5.26	16.8	--	0.580	7.6	-91.5
		849	7	5.26	16.8	--	0.570	7.6	-91.3
MW3	07/02/20	939	6	4.88	11.0	0.86	0.370	8.42	7.40
		941	7	4.88	11.0	0.85	0.360	8.41	7.10
		942	8	4.88	11.0	0.86	0.360	8.41	7.00
MW4	07/02/20	1054	5	6.13	11.4	--	0.163	7.29	3.80
		1056	6	6.13	11.4	--	0.160	7.30	2.30
		1058	7	6.13	11.4	--	0.161	7.30	2.00
MW5	07/02/20	1330	8	6.26	16.5	0.20	0.117	7.98	-245.0
		1332	9	6.27	16.5	0.19	0.117	8.00	-248.4
		1334	10	6.27	16.5	0.20	0.117	8.01	-249.1
MW6	07/02/20	1239	8	7.65	18.0	0.54	0.157	8.08	-343.3
		1241	9	7.91	18.0	0.55	0.161	8.21	-343.0
		1243	10	8.24	18.0	0.55	0.160	8.27	-342.8

* - 10 gallons were purged prior to low flow to develop the monitor wells

ft bgs - feet below ground surface

˚C - degrees celsius

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolts

[1] - Not recorded. Value is zero (0)

Table A-3 Cumulative Ground Water Analytical Data
Status Report - 3rd Quarter 2020
Kaufman No. 1
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
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
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
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
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
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
Regulatory Criteria		**0.01**	**0.75**	**0.75**	**0.62**

Threatened and Endangered Species Survey Reports

ENVIRONMENTAL CONSULTANTS

To:	US Fish and Wildlife, New Mexico Ecological Services Field Office
Cc:	John Kendall – BLM Farmington Field Office
From:	Mr. Nathan Kirker (SME Environmental, Inc.)
Date:	08/14/2020
Re:	Summary of 2020 Southwestern Willow Flycatcher Surveys for Hilcorp Kaufman #1 Spill Remediation Site

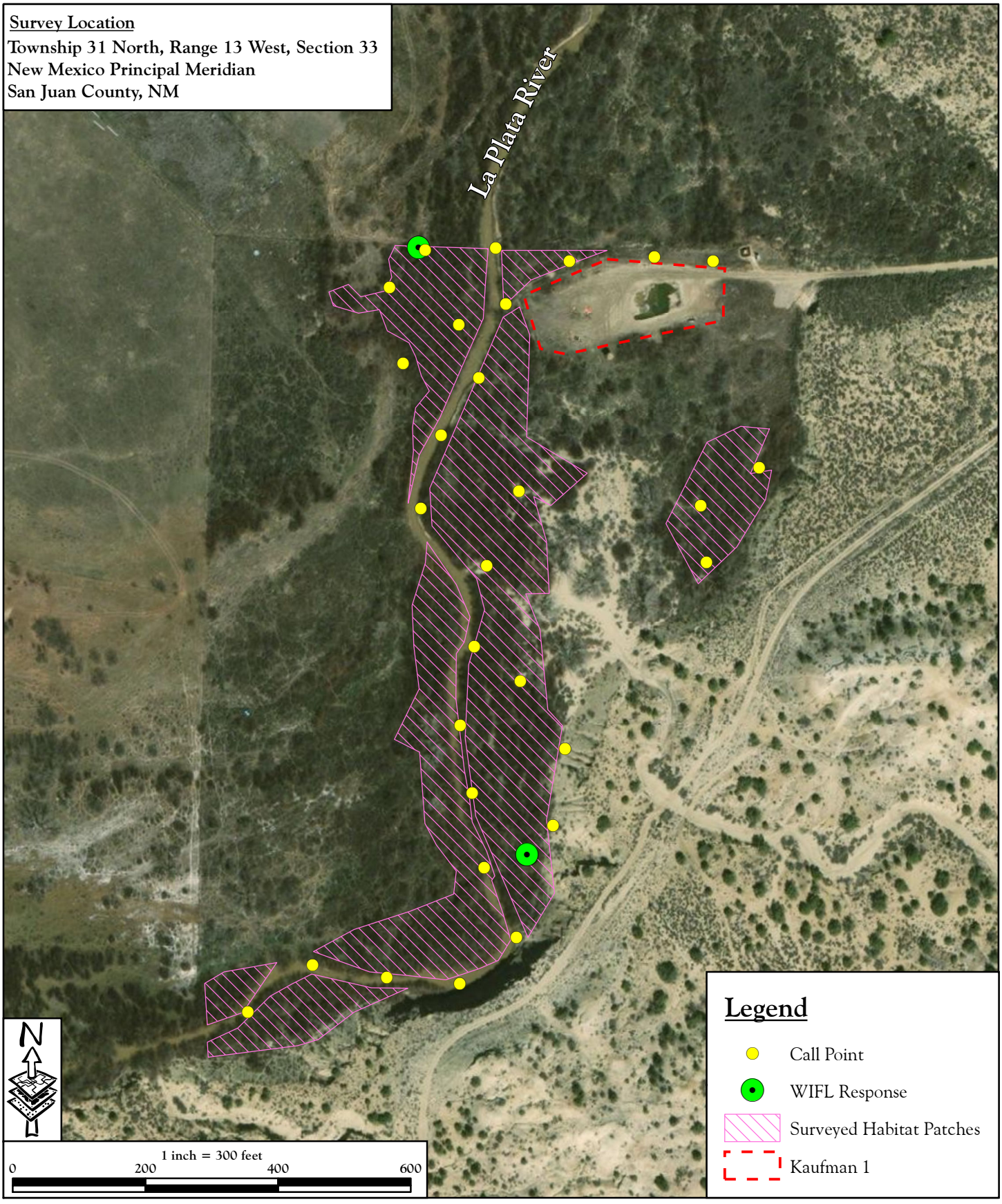
This report presents the results of 2020 Southwestern Willow Flycatcher *(Empidonax traillii extimus*) project related presence/absence surveys conducted by SME Environmental, Inc. (SME) at the Kaufman #1 well location southeast of La Plata, New Mexico (San Juan County). The purpose of the survey is to confirm the status of the Southwestern Willow Flycatcher, which is listed under the Endangered Species Act (ESA) (16 [United States Code] USC 1531 et seq.) of 1973. The survey area is located on BLM public lands.

All Southwestern Willow Flycatcher survey work performed in 2020 was conducted according to guidelines detailed in: *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher, U.S. Geological Survey Techniques and Methods 2A-10*. The project related presence/absence surveys were conducted by SME under Federal Fish and Wildlife Permit #TE053839-0 effective on June 12, 2019 (Expires June 30, 2024).

Per the referenced protocol, surveys were conducted within suitable habitat during five separate site visits over three survey periods. Two Willow Flycatchers responded to call-playback during the May 20 survey. As the birds were observed outside of the nesting period, the birds could not be positively identified as Southwestern Willow Flycatchers. Neither bird was observed to display breeding behaviors, and no pairs were observed. The lack of later detections during the nesting period would indicate the potential habitat of the proposed project area was not utilized by breeding Southwestern Willow Flycatchers in 2020 and the observed birds were likely migrating individuals.

Included in this transmittal are the following supporting documents:

- Figure 1: Aerial Site Map of Southwestern Willow Flycatcher Survey Area
- Figure 2: Topographic Site Map of Southwestern Willow Flycatcher Survey Area
- Photo Documentation
- 2020 Survey and Detection Form
- NHNM Data Form (included in separate Excel file)
- Bird Species Observed (BLM copy only)



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Durango, Colorado 81301
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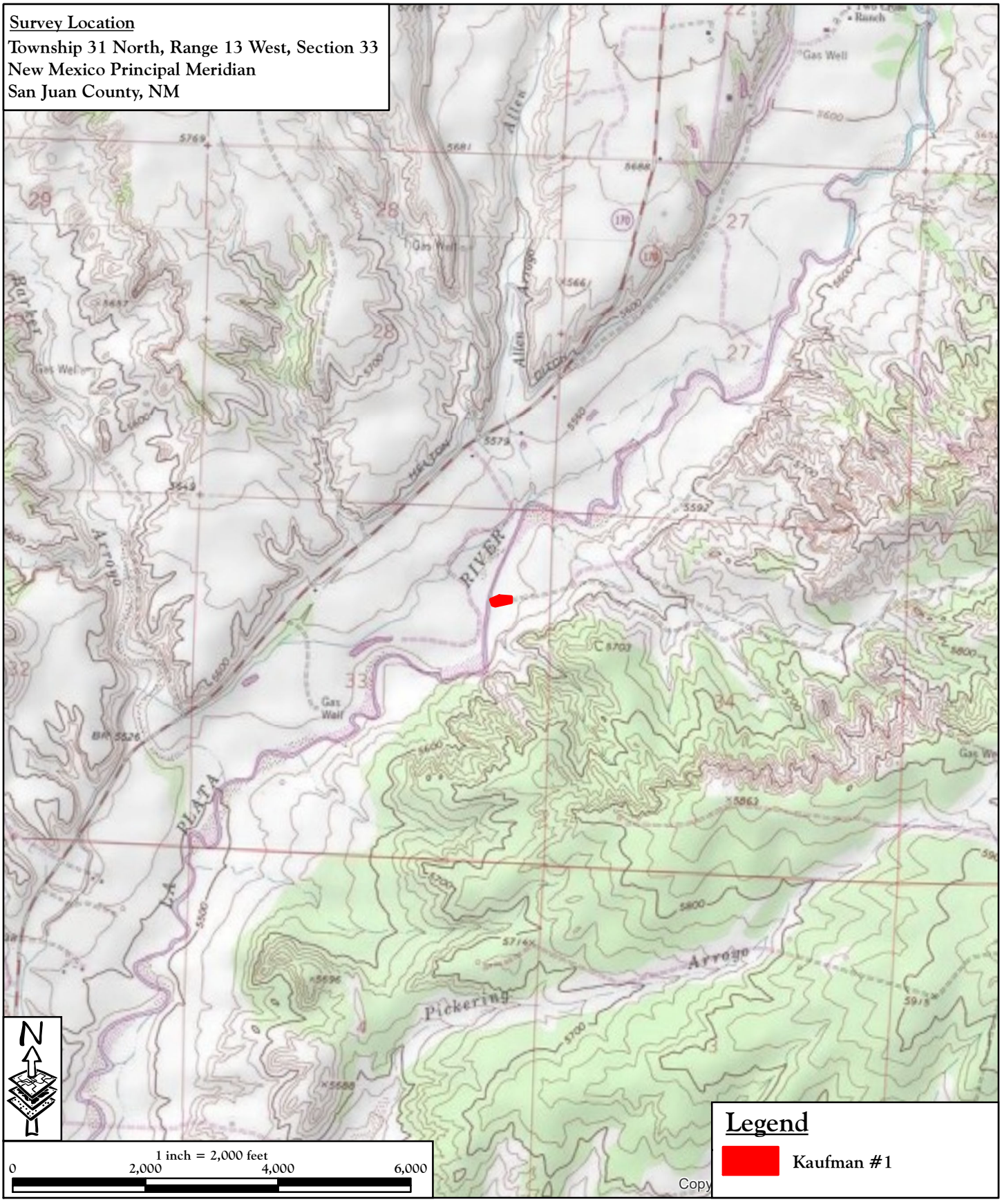
AERIAL SITE MAP

KAUFMAN #1
2020 SWFL SURVEY REPORT

FIGURE 1

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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TOPOGRAPHIC SITE MAP

KAUFMAN #1
2020 SWFL SURVEY REPORT

FIGURE 2

Source: Farmington North, NM 7.5' USGS Quadrangle.

PHOTO DOCUMENTATION

Select Photos from 2020 Field Surveys
Photos taken by Nathan Kirker - SME Biologist

5/20/2020: Photo from top of bluff east of southern portion of survey area facing north towards the majority of the survey area. Note prominence of tamarisk and Russian olive with native willow present along the banks of the La Plata River which flows south through the survey area.

8/03/2020: Photo from midaway along the survey area facing north towards the northern survey area. Note areas of tamarisk impacted by tamarisk beetles (*Diorhabda* sp.) as denoted by brown foliage.

Select Photos from 2020 Field Surveys

Photos taken by Nathan Kirker - SME Biologist

5/20/2020: Photo from the northern half of the survey area along the La Plata River. Note narrow band of willow along bank with overstory of Russian olive. Willow is primarily confined to the stream banks with Russian olive and tamarisk dominating the patch interiors. One exception is the far northwestern portion of the survey area where the western (outer) edge of the patch west of the La Plata River is also fringed in a wide swath of willow.

7/14/2020: Photo from the survey area midway along the La Plata River (dry) facing south (downstream).

Select Photos from 2020 Field Surveys
Photos taken by Nathan Kirker - SME Biologist

5/20/2020: Photo from a similar location as the previous photo demonstrating patch interior in tamarisk dominated areas.

7/10/2020: Photo from the northeastern survey area facing north. Note impacts to tamarisk foliage.

2020 SURVEY AND DETECTION FORM

Willow Flycatcher (WIFL) Survey and Detection Form (revised April, 2010)

Site Name: **Kaufman #1** State: **NM** County: **San Juan**

USGS Quad Name: **Farmington North, New Mexico** Elevation: **1,687** (meters)

Creek, River, or Lake Name: **La Plata River**

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes*** **X** ***No*** ____

Survey Coordinates: Start: E **749,245** N **4,083,005** UTM Datum: **NAD83** (See instructions)

Stop: E **749,151** N **4,082,649** UTM Zone: **12**

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

*****Fill in additional site information on back of this page*****

Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator.	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
Survey # 1	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	5/20/2020						1	-	749,209	4,083,005
Nathan Kirker	Start:						1	-	749,275	4,082,728
	6:50	2	0	0	N	*Diorhabda* sp. present effect evident but tempered along river banks by presence of native willow. Cowbirds present.				
	Stop:									
	10:23									
	Total hrs:									
	3.6									
Survey # 2	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	6/5/2020									
Nathan Kirker	Start:									
	6:25									
	Stop:									
	8:50									
	Total hrs:									
	2.4									
Survey # 3	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	6/18/2020									
Nathan Kirker	Start:									
	6:15									
	Stop:									
	8:57									
	Total hrs:									
	2.7									
Survey # 4	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	7/2/2020									
Nathan Kirker	Start:									
	6:33									
	Stop:									
	9:14									
	Total hrs:									
	2.7									
Survey # 5	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	7/17/2020									
Nathan Kirker	Start:									
	6:35									
	Stop:									
	8:50									
	Total hrs:									
	2.3									
Overall Site Summary		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any WIFLs color-banded? Yes ____ No **X**				
Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals.		0	0	0	0	If yes, report color combination(s) in the comments section on back of form and report to USFWS.				
Total survey hrs:	13.7									

Reporting Individual: **Nathan Kirker** Date Report Completed: **8/14/2020**

US Fish & Wildlife Service Permit #: **TE053839-0** State Wildlife Agency Permit #: ____

Submit ***form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.***

Fill in the following information completely. Submit form by September 1 st. Retain a copy for your records.

Reporting Individual **Nathan Kirker** Phone # **970-259-9595**

Affiliation **SME Environmental Inc.** E-mail nkirker@sme-env.com

Site Name **Kaufman #1** Date report Completed **8/14/2020**

Was this site surveyed in a previous year? Yes____ No____ Unknown_X___

Did you verify that this site name is consistent with that used in previous yrs? Yes ____ No **X** Not Applicable ____

If name is different, what name(s) was used in the past? ____

If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.

Did you survey the same general area during each visit to this site this year? Yes **X** No ____ If no, summarize below.

Management Authority for Survey Area: Federal **X** Municipal/County ____ State ____ Tribal ____ Private ____

Name of Management Entity or Owner (e.g., Tonto National Forest) **Bureau of Land Management**

Length of area surveyed: **0.5** (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

____ Native broadleaf plants (entirely or almost entirely, > 90% native)

____ Mixed native and exotic plants (mostly native, 50 - 90% native)

X Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.

Tamarix spp., Salix exigua, Elaeagnus angustifolia

Average height of canopy (Do not include a range): **3** (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests;
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

BIRD SPECIES OBSERVED DURING 2020 FIELD VISITS

Scientific Name	Common Name
Agelaius phoeniceus	Red-winged blackbird
Archilochus alexandri	Black-chinned hummingbird
Ardea herodias	Great blue heron
Branta canadensis	Canada goose
Callipepla gambelii	Gambel's quail
Cathartes aura	Turkey vulture
Corvus corax	Common raven
Dumetella carolinensis	Gray catbird
Empidonax traillii	Willow flycatcher
Geothlypis trichas	Common yellowthroat
Haemorhous mexicanus	House finch
Icteria virens	Yellow-breasted chat
Icterus bullockii	Bullock's oriole
Leiothlypis virginiae	Virginia's warbler
Melospiza melodia	Song sparrow
Mimus polyglottos	Northern mockingbird
Molothrus ater	Brown-headed cowbird
Myiarchus cinerascens	Ash-throated flycatcher
Passerina amoena	Lazuli bunting
Passerina caerulea	Blue grosbeak
Pheucticus melanocephalus	Black-headed grosbeak
Pica hudsonia	Black-billed magpie
Pipilo maculatus	Spotted towhee
Poecile atricapillus	Black-capped chickadee
Polioptila caerulea	Blue-gray gnatcatcher
Setophaga petechia	Yellow warbler
Spinus psaltria	Lesser goldfinch
Stelgidopteryx serripennis	Northern rough-winged swallow
Streptopelia decaocto	Eurasian collared dove
Sturnella neglecta	Western meadowlark
Vireo bellii	Bell's vireo
Zenaida macroura	Mourning dove

ENVIRONMENTAL CONSULTANTS

To:	US Fish and Wildlife, New Mexico Ecological Services Field Office
Cc:	John Kendall – BLM Farmington Field Office
From:	Mr. Nathan Kirker (SME Environmental, Inc.)
Date:	09/28/2020
Re:	Summary of 2020 Yellow-billed Cuckoo Surveys for Hilcorp Kaufman #1 Spill Remediation Site

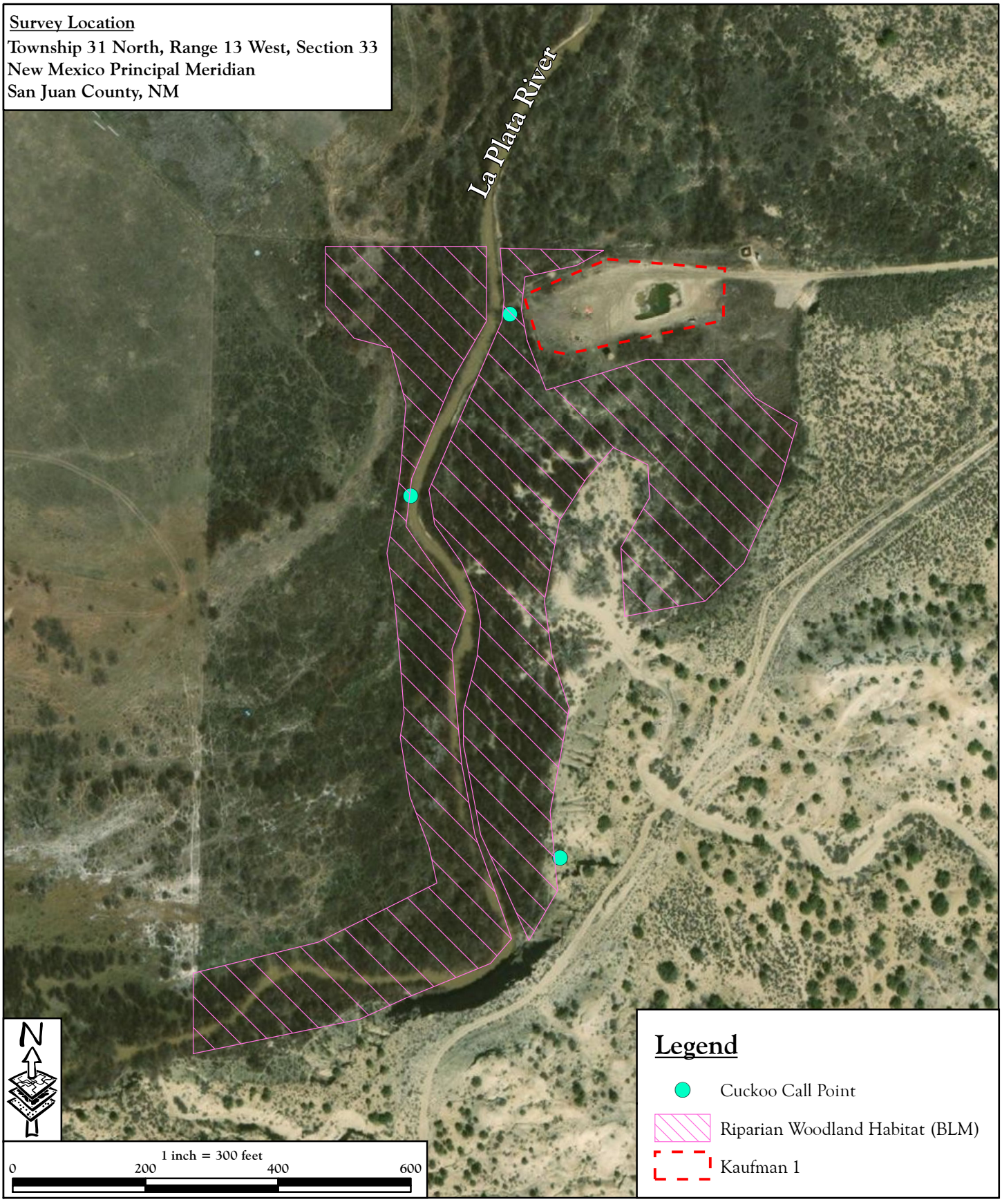
This report presents the results of 2020 Yellow-billed Cuckoo *(Coccyzus americanus*) project related presence/absence surveys conducted by SME Environmental, Inc. (SME) at the Kaufman #1 well location southeast of La Plata, New Mexico (San Juan County). The purpose of the survey is to confirm the status of the Yellow-billed Cuckoo, which is listed under the Endangered Species Act (ESA) (16 [United States Code] USC 1531 et seq.) of 1973. The survey area is located on BLM public lands.

All Yellow-billed Cuckoo survey work performed in 2020 was conducted according to guidelines detailed in: *A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo* (Halterman et al. 2016). The project related presence/absence surveys were conducted by SME under Federal Fish and Wildlife Permit #TE053839-0 effective on June 12, 2019 (Expires June 30, 2024).

Per the referenced protocol, surveys were conducted within suitable habitat during four separate site visits over three survey periods. The surveys were conducted in association with Southwestern Willow Flycatcher surveys in the same area. SME would describe the cuckoo habitat suitability in the survey area as marginal. The survey area may provide migratory habitat, but nesting potential is likely low. No cuckoos responded to call-playback and no cuckoos were observed passively. The lack of detections during the survey period would indicate the potential habitat of the proposed project area was not utilized by breeding Yellow-billed Cuckoos in 2020.

Included in this transmittal are the following supporting documents:

- Figure 1: Aerial Site Map of Yellow-billed Cuckoo Survey Area
- Figure 2: Topographic Site Map of Yellow-billed Cuckoo Survey Area
- Photo Documentation
- 2020 Survey and Detection Form (included in separate Excel file)
- NHNM Data Form (included in separate Excel file)



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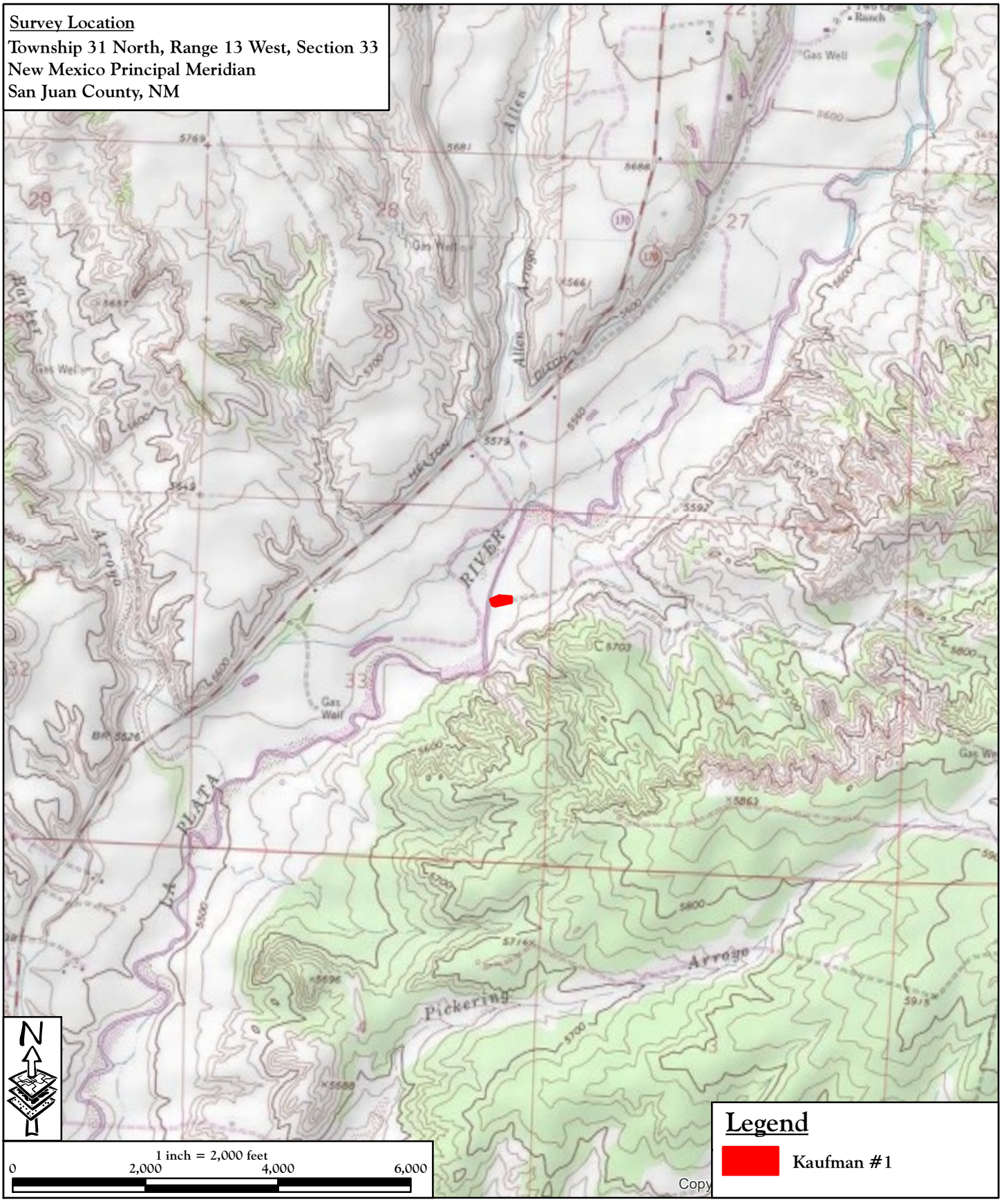
AERIAL SITE MAP

KAUFMAN #1
2020 YBCU SURVEY REPORT

FIGURE 1

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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TOPOGRAPHIC SITE MAP

KAUFMAN #1
2020 YBCU SURVEY REPORT

FIGURE 2

Source: Farmington North, NM 7.5' USGS Quadrangle.

PHOTO DOCUMENTATION

Select Photos from 2020 Field Surveys
Photos taken by Nathan Kirker - SME Biologist

5/20/2020: Photo from top of bluff east of the La Plata River and just south of survey area facing north towards the survey area. Note prominence of tamarisk and Russian olive with native willow present along the banks of the La Plata River which flows south through the survey area.

8/03/2020: Photo from the southern survey area facing north towards the northern survey area. Note areas of tamarisk impacted by tamarisk beetles (*Diorhabda* sp.) as denoted by brown foliage.

Select Photos from 2020 Field Surveys

Photos taken by Nathan Kirker - SME Biologist

5/20/2020: Photo from near the middle call point, along the La Plata River facing south. Note narrow band of willow along bank with adjacent overstory of Russian olive and cottonwood. Willow is primarily confined to the stream banks with Russian olive and tamarisk dominating the patch interiors.

7/14/2020: Photo from the southern survey area along the La Plata River (dry) facing south (downstream).

Select Photos from 2020 Field Surveys

Photos taken by Nathan Kirker - SME Biologist

5/20/2020: Photo from a similar location as the previous photo demonstrating patch interior in tamarisk dominated areas.

7/10/2020: Photo from the northeastern survey area facing north. Note impacts to tamarisk foliage. Also note sparse cottonwood cover along periphery of floodplain.

Laboratory Results and Chain-of-Custody Documents

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 14, 2020

Jim Foster

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

RE: Kaufman No. 1 OrderNo.: 2007230

Dear Jim Foster:

Hall Environmental Analysis Laboratory received 8 sample(s) on 7/7/2020 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Lab Order: 2007230
Project: Kaufman No. 1

Lab ID: 2007230-001 **Collection Date:** 7/2/2020 11:50:00 AM
Client Sample ID: MW1 **Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	7/12/2020 3:09:00 PM	SL7026
Toluene	ND	1.0		µg/L	1	7/12/2020 3:09:00 PM	SL7026
Ethylbenzene	ND	1.0		µg/L	1	7/12/2020 3:09:00 PM	SL7026
Xylenes, Total	ND	1.5		µg/L	1	7/12/2020 3:09:00 PM	SL7026
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/12/2020 3:09:00 PM	SL7026
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/12/2020 3:09:00 PM	SL7026
Surr: Toluene-d8	101	70-130		%Rec	1	7/12/2020 3:09:00 PM	SL7026

Lab ID: 2007230-002 **Collection Date:** 7/2/2020 9:00:00 AM
Client Sample ID: MW2 **Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	7/12/2020 3:34:00 PM	SL7026
Toluene	ND	1.0		µg/L	1	7/12/2020 3:34:00 PM	SL7026
Ethylbenzene	ND	1.0		µg/L	1	7/12/2020 3:34:00 PM	SL7026
Xylenes, Total	ND	1.5		µg/L	1	7/12/2020 3:34:00 PM	SL7026
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/12/2020 3:34:00 PM	SL7026
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/12/2020 3:34:00 PM	SL7026
Surr: Toluene-d8	99.3	70-130		%Rec	1	7/12/2020 3:34:00 PM	SL7026

Lab ID: 2007230-003 **Collection Date:** 7/2/2020 9:50:00 AM
Client Sample ID: MW3 **Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	7/12/2020 3:59:00 PM	SL7026
Toluene	ND	1.0		µg/L	1	7/12/2020 3:59:00 PM	SL7026
Ethylbenzene	ND	1.0		µg/L	1	7/12/2020 3:59:00 PM	SL7026
Xylenes, Total	ND	1.5		µg/L	1	7/12/2020 3:59:00 PM	SL7026
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/12/2020 3:59:00 PM	SL7026
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/12/2020 3:59:00 PM	SL7026
Surr: Toluene-d8	99.7	70-130		%Rec	1	7/12/2020 3:59:00 PM	SL7026

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, Inc.

CLIENT: Timberwolf Environmental
Project: Kaufman No. 1
Lab Order: 2007230

Lab ID: 2007230-004 **Collection Date:** 7/2/2020 11:05:00 AM
Client Sample ID: MW4 **Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	7/12/2020 4:23:00 PM	SL7026
Toluene	ND	1.0		µg/L	1	7/12/2020 4:23:00 PM	SL7026
Ethylbenzene	ND	1.0		µg/L	1	7/12/2020 4:23:00 PM	SL7026
Xylenes, Total	ND	1.5		µg/L	1	7/12/2020 4:23:00 PM	SL7026
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/12/2020 4:23:00 PM	SL7026
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/12/2020 4:23:00 PM	SL7026
Surr: Toluene-d8	98.7	70-130		%Rec	1	7/12/2020 4:23:00 PM	SL7026

Lab ID: 2007230-005 **Collection Date:** 7/2/2020 1:44:00 PM
Client Sample ID: MW5 **Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	7/12/2020 4:48:00 PM	SL7026
Toluene	ND	1.0		µg/L	1	7/12/2020 4:48:00 PM	SL7026
Ethylbenzene	ND	1.0		µg/L	1	7/12/2020 4:48:00 PM	SL7026
Xylenes, Total	ND	1.5		µg/L	1	7/12/2020 4:48:00 PM	SL7026
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/12/2020 4:48:00 PM	SL7026
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/12/2020 4:48:00 PM	SL7026
Surr: Toluene-d8	99.8	70-130		%Rec	1	7/12/2020 4:48:00 PM	SL7026

Lab ID: 2007230-006 **Collection Date:** 7/2/2020 12:53:00 PM
Client Sample ID: MW6 **Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	7/12/2020 5:13:00 PM	SL7026
Toluene	ND	1.0		µg/L	1	7/12/2020 5:13:00 PM	SL7026
Ethylbenzene	ND	1.0		µg/L	1	7/12/2020 5:13:00 PM	SL7026
Xylenes, Total	ND	1.5		µg/L	1	7/12/2020 5:13:00 PM	SL7026
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/12/2020 5:13:00 PM	SL7026
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/12/2020 5:13:00 PM	SL7026
Surr: Toluene-d8	100	70-130		%Rec	1	7/12/2020 5:13:00 PM	SL7026

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, Inc.

CLIENT: Timberwolf Environmental
Project: Kaufman No. 1
Lab Order: 2007230

Lab ID: 2007230-007 **Collection Date:** 7/2/2020 1:44:00 PM
Client Sample ID: DUP **Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	7/12/2020 5:37:00 PM	SL7026
Toluene	ND	1.0		µg/L	1	7/12/2020 5:37:00 PM	SL7026
Ethylbenzene	ND	1.0		µg/L	1	7/12/2020 5:37:00 PM	SL7026
Xylenes, Total	ND	1.5		µg/L	1	7/12/2020 5:37:00 PM	SL7026
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	7/12/2020 5:37:00 PM	SL7026
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/12/2020 5:37:00 PM	SL7026
Surr: Toluene-d8	99.0	70-130		%Rec	1	7/12/2020 5:37:00 PM	SL7026

Lab ID: 2007230-008 **Collection Date:**
Client Sample ID: Trip Blank **Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	7/12/2020 6:02:00 PM	SL7026
Toluene	ND	1.0		µg/L	1	7/12/2020 6:02:00 PM	SL7026
Ethylbenzene	ND	1.0		µg/L	1	7/12/2020 6:02:00 PM	SL7026
Xylenes, Total	ND	1.5		µg/L	1	7/12/2020 6:02:00 PM	SL7026
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/12/2020 6:02:00 PM	SL7026
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/12/2020 6:02:00 PM	SL7026
Surr: Toluene-d8	99.1	70-130		%Rec	1	7/12/2020 6:02:00 PM	SL7026

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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2007230**

14-Jul-20

Client: Timberwolf Environmental

Project: Kaufman No. 1

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **SL70266**	RunNo: **70266**
Prep Date:	Analysis Date: **7/12/2020**	SeqNo: **2442593** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.6	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.3	70	130			
Surr: Toluene-d8	10		10.00		99.8	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **SL70266**	RunNo: **70266**
Prep Date:	Analysis Date: **7/12/2020**	SeqNo: **2442594** 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	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			
Surr: Dibromofluoromethane	10		10.00		99.8	70	130			
Surr: Toluene-d8	9.9		10.00		99.1	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

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: **Timberwolf Environmental** Work Order Number: **2007230** RcptNo: 1

Received By: **Scott Anderson** **7/7/2020 8:25:00 AM**

Completed By: **Emily Mocho** **7/7/2020 8:48:20 AM**

Reviewed By: JR 7/7/20

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: SPA 7.7.20

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	5.6	Good	Not Present			

Chain-of-Custody Record

Client: Timberwolf Environmental

Mailing Address: 1920 W. Villa Maria
Ste. # 205 Bryan, Tx 77807

Phone #: 979-324-2139

email or Fax#: Jim@teamtimberwolf.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: Kaufman No. 1

Project #: HEC-180061

Project Manager: Jim Foster

Sampler: Michael Morse

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 5.6-0=5.6 (°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. 2007230	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)
7-2-20	1150	GW	MW 1	VOA 3	HCl	-001	✓									
7-2-20	900		MW 2	VOA 3	HCl	-002	✓									
7-2-20	950		MW 3	VOA 3	HCl	-003	✓									
7-2-20	1105		MW 4	VOA 3	HCl	-004	✓									
7-2-20	1344		MW 5	VOA 3	HCl	-005	✓									
7-2-20	1253		MW 6	VOA 3	HCl	-006	✓									
7-2-20	1344		Dup	VOA 3	HCl	-007	✓									
7-2-20			Trip Blank	VOA 2	HCl	-008	✓									

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
7-2-20	1500		Christa Waela		7/2/2020	1500
7/4/2020	1806	Christa Waela	SPA Courier		7.7.20	8:25

Remarks:

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

August 21, 2020

Jim Foster

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

RE: Kaufman No 1 OrderNo.: 2008669

Dear Jim Foster:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/12/2020 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2008669**
Date Reported: **8/21/2020**

CLIENT: Timberwolf Environmental
Client Sample ID: HP 1
Project: Kaufman No 1
Collection Date: 8/11/2020 8:15:00 AM
Lab ID: 2008669-001
Matrix: GROUNDWA
Received Date: 8/12/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	5.5	5.0		µg/L	10	8/20/2020 12:14:00 PM	SL71206
Toluene	ND	5.0		µg/L	10	8/20/2020 12:14:00 PM	SL71206
Ethylbenzene	12	5.0		µg/L	10	8/20/2020 12:14:00 PM	SL71206
Xylenes, Total	28	10		µg/L	10	8/20/2020 12:14:00 PM	SL71206
Surr: 1,2-Dichloroethane-d4	90.1	70-130		%Rec	10	8/20/2020 12:14:00 PM	SL71206
Surr: Dibromofluoromethane	98.3	70-130		%Rec	10	8/20/2020 12:14:00 PM	SL71206
Surr: Toluene-d8	105	70-130		%Rec	10	8/20/2020 12:14:00 PM	SL71206

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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2008669**

21-Aug-20

Client: Timberwolf Environmental

Project: Kaufman No 1

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **SL71179**	RunNo: **71179**
Prep Date:	Analysis Date: **8/19/2020**	SeqNo: **2483646** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.9	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.1	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.8	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **SL71179**	RunNo: **71179**
Prep Date:	Analysis Date: **8/19/2020**	SeqNo: **2483647** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.2		10.00		92.4	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		92.8	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.3	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **SL71206**	RunNo: **71206**
Prep Date:	Analysis Date: **8/20/2020**	SeqNo: **2485133** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.2	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.6	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.1	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.6	70	130			
Surr: Toluene-d8	10		10.00		99.9	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **SL71206**	RunNo: **71206**
Prep Date:	Analysis Date: **8/20/2020**	SeqNo: **2485134** 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	9.1		10.00		90.7	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		94.8	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		101	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Timberwolf Environmental** Work Order Number: **2008669** RcptNo: 1

Received By: **Isaiah Ortiz** **8/12/2020 8:00:00 AM** I-OK

Completed By: **Leah Baca** **8/12/2020 3:03:27 PM** Leah Baca

Reviewed By: SPA 8.12.20 ~~15:45~~ SPA 8.12.20 15:45

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: EM 8/12/20

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	0.2	Good				

Chain-of-Custody Record

Client: Timberwolf Environmental

Mailing Address: 1920 W. Villa Maria Suite 205. Bryan TX 77807

Phone #:

email or Fax#: Jim@teamtimberwolf.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: Kaufman No 1

Project #: HEC-180061

Project Manager: Jim Foster

Sampler: Michael Morse

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 0.2 +0.1(CF) = 0.3 (°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. 2008669 (8/12/20 LB)	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)
8-11-20	815	GW	HP 1	Voa 4	HCl	-001	✓									
			~~TRIP BLANK~~	~~Voa 1~~	HCl	~~-002~~	✓									
			EM 8/12/20													

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
8-11-20	11:00 am				8/11/2020	1102
8/11/2020	1903	Christine Walker		courier	8/12/20	0800

Remarks:

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.