

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NRM2003134504
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

EI 9F 8/3; 342; /E/3632

Responsible Party	KEM Ventures Lp	OGRID	328213
Contact Name	Hang Yeh	Contact Telephone	832-906-9584
Contact email	hang.yeh@kmegroups.com	Incident # (assigned by OCD)	
Contact mailing address	515A, S.Fry Rd., STE 406, Katy, Texas 77450		

Location of Release Source

Latitude 33.5143356 Longitude -103.0648651
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	BELL B FED #2	Site Type	Oil and Gas Well
Date Release Discovered	August 20, 2019	API# (if applicable)	30-025-07066

Unit Letter	Section	Township	Range	County
P	20	9S	38E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) < 10 bbls	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Natural Gas	Volume Released (Mcf) < 500 Mcf	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

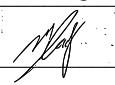
There was no evident indication or exact way to delineate what caused this release since the liquid spilled had already mixed with sand and become solid phase. The possible or suspected cause might be some leak from the battery next to, and it should date back at least years. The release might be less than 10 bbls. Zero was recovered. After excavation, a leak of gas was noticed. The cause of this leak was because a hole locating about 10 feet from the ground level on the surface casing. The release based on the production history was about 500 Mcf or less, and zero was recovered.

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? No. Because when the existing/current operator acquired this well, the well had already been shut-in and there was not production	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Hang Yeh</u>	Title: <u>Asset Manager Assistant</u>
Signature: <u></u>	Date: <u>12/06/2019</u>
email: <u>hang.yeh@kemgroups.com</u>	Telephone: <u>832-906-9584</u>
<u>OCD Only</u> Received by: <u>Ramona Marcus</u> Date: <u>1/31/2020</u>	

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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>~ 60</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

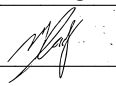
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

<p>Characterization Report Checklist: <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"><input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.<input checked="" type="checkbox"/> Field data<input checked="" type="checkbox"/> Data table of soil contaminant concentration data<input checked="" type="checkbox"/> Depth to water determination<input checked="" type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release<input checked="" type="checkbox"/> Boring or excavation logs<input checked="" type="checkbox"/> Photographs including date and GIS information<input checked="" type="checkbox"/> Topographic/Aerial maps<input checked="" type="checkbox"/> Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Hang Yeh Title: Asset Manager Assistant
Signature:  Date: 12/06/2019
email: hang.yeh@kemgroups.com Telephone: 832-906-9584

OCD Only

Received by: Ramona Marcus Date: 1/31/2020

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Remediation Plan

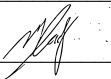
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Hang Yeh Title: Asset Manager Assistant
Signature:  Date: 12/06/2019
email: hang.yeh@kemgroups.com Telephone: 832-906-9584

OCD Only

Received by: Ramona Marcus Date: 01/31/2020

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

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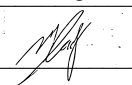
Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Hang Yeh Title: Asset Manager Assistant
 Signature:  Date: 12/06/2019
 email: hang.yeh@kemgroups.com Telephone: 832-906-9584

OCD Only

Received by: Ramona Marcus Date: 1/31/2020

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

BELL B FED # 2

Spill Report



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PART I: SITE ASSESSMENT AND CHARACTERIZATION

Site Description

The sites are located approximately 60 miles North of Hobbs, New Mexico. The legal location for the sites is Unit Letter P, Section 20, Township 9S, Range 38E in Lea County, New Mexico. The GPS Lat/Long for the site is 33.5143356, -103.0648651 NAD83 respectively. Figure 1&2 shows the site location and map.

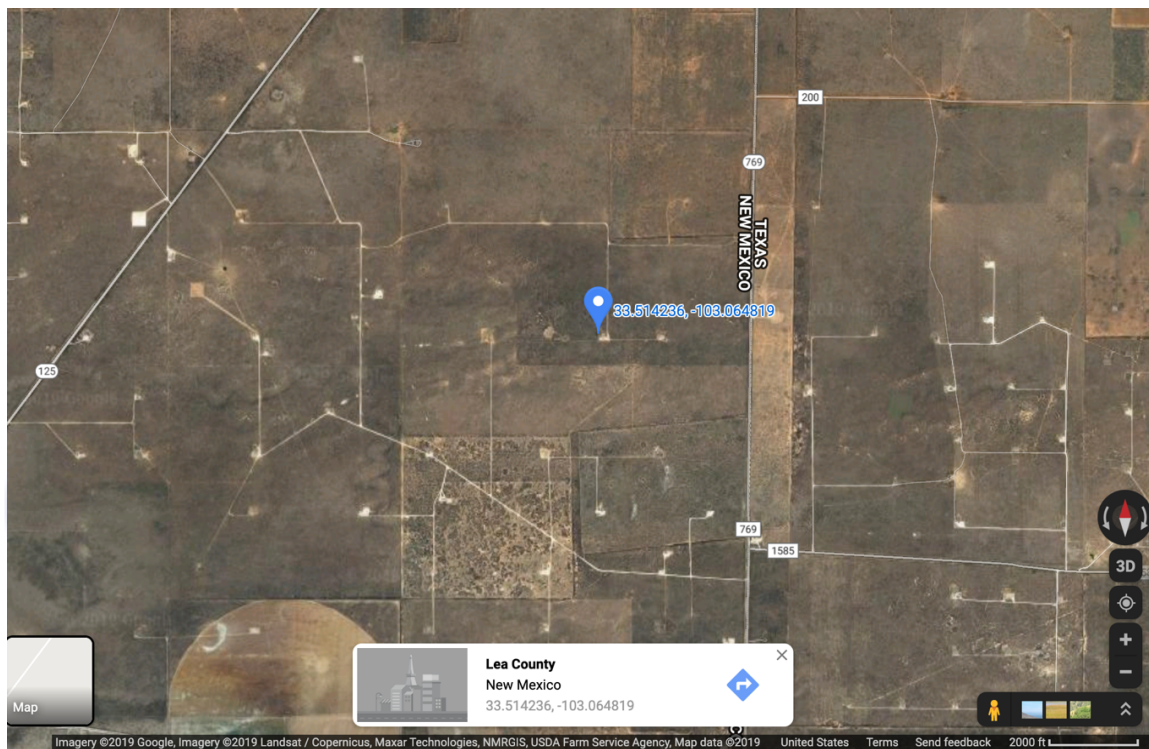


Figure 1: Site Location

Bell-B FED #2



Figure 2: Site map

Background

The following summarize the site history at Bell-B Fed #2 where previous investigation have been conducted:

- On August 20, 2019, it had noticed that there was some Oil&Solid mixture on the surface of Bell-B Fed #2 nearby the battery. KEM was asked to clean up the solid mixture by BLM Inspector. Figure 3 shows a small area of the ground before any clean up activity.

Bell-B FED #2



Figure 3: Site map before any clean-up activity.

- On August 26, 2019, KEM contracted third party company to conduct a visual site assessment in order to identify the depth and scoop of impacted area. At the South of the impacted area, it was dug to about 1 ft where clean soil was found. At the East close to the oil tanks was about 4 ft where clean soil was found. At the west next to the pumping unit, a 7 ft deep hole was dug, but did not reach a possible clean soil. Based on the assessment, a possible 100' by 80' impacted area was identified. Figure 4 shows the spots that had dug.

Bell-B FED #2



Figure 4: Locations visual assessment were conducted.

- From October 28, 2019 to November 19, 2019, KEM had contracted a service company to start cleaning up the impacted area and to facilitate soil sampling when clean soil was visually spotted. In order to identify the maximum horizontal and vertical impacted boundaries, several soil samples were taken to Cardinal Laboratories in Hobbs, New Mexico. Compliance of the regulation, all samples were tested based on EPA protocol. As the results, all samples show Total Petroleum Hydrocarbon (TPH) and BTEX within the range of the regulated limit based on **Table I in 19.15.29.12 NMAC – N, 8/14/2018 and August 13, 1993 New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Release**. At this point, the maximum vertical and horizontal impacted boundaries have been identified, and excavation stopped. Figure 5 shows the locations where the samples were taken. Table 1 summarizes the lab results. All the soil sample analysis results from Cardinal Laboratories shows on Appendix A.

Bell-B FED #2

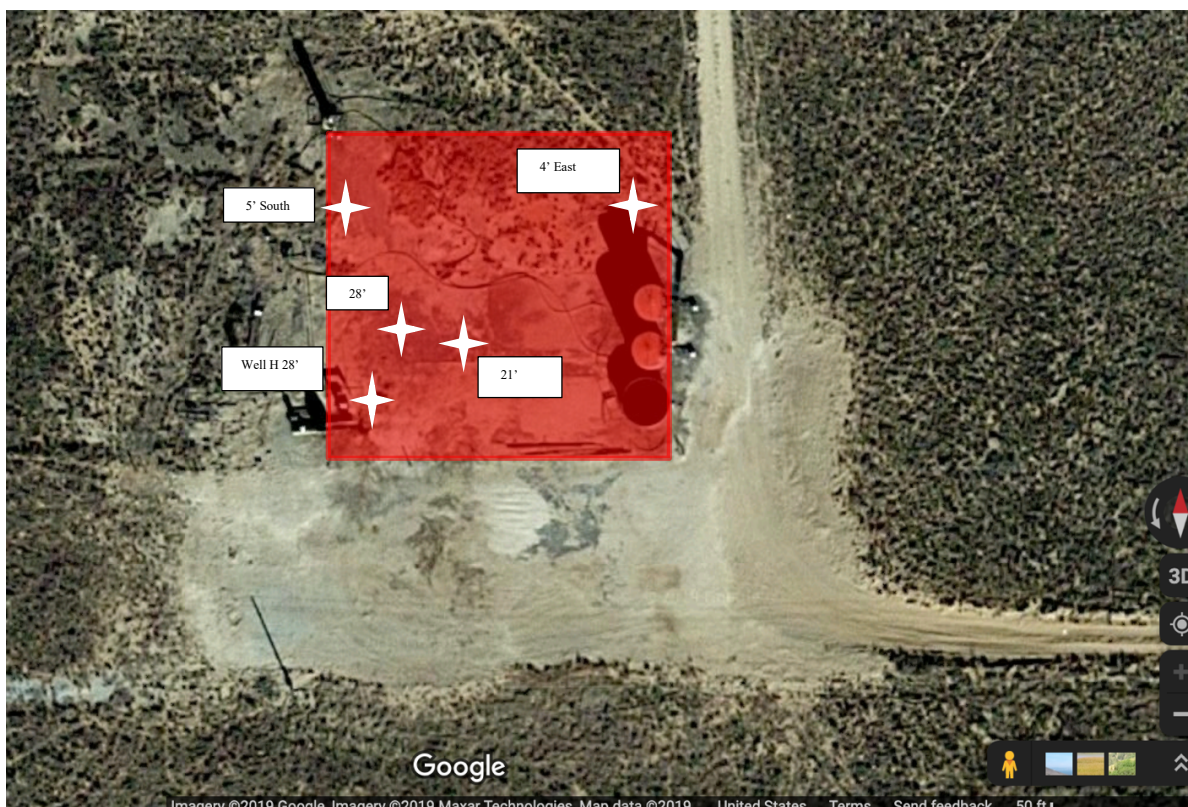


Figure 5: Sampling locations in impacted area.

Table 1 Sampling results for each location

Sample ID	Sampling Date	TPH (mg/kg)	GRO + DRO (mg/kg)	BTEX (mg/kg)	Benzene (mg/kg)	Chloride (mg/kg)
OCD Recommend Values		2,500	1,000	50	10	10,000
5' South	11/12/2019	53	35.4	<0.300	<0.05	48
4' East	11/12/2019	< 10.0	< 10.0	<0.300	<0.05	656
Well H 28'	11/14/2019	< 10.0	< 10.0	<0.300	<0.05	176
21'	11/01/2019	< 10.0	< 10.0	<0.300	<0.05	32
28'	11/01/2019	< 10.0	< 10.0	<0.300	<0.05	96

Bell-B FED #2

Site Ranking

According to 19.15.29.11 and **GUIDELINES FOR REMEDIATION OF LEAKS, SPILLS AND RELEASE (August 13, 1993)**, the ranking for this site is by using the following criteria in Table 2:

Table 2 Ranking criteria for Bell B FED #2

Depth to Ground Water	60 - feet
Wellhead Protection Area	>1,000 feet
Distance to Surface Water Body	>1,000 feet

Depth to ground water is an estimated 60 feet, according to available information within USGS database. Measurement were conducted from the nearest water wells on record. Figure 6 shows water well information on USGS website. According to the definition of significant watercourse in Subsection P of 19.15.17, there is no such watercourse within ½ mile of the impacted area. Figure 7 shows the topographic map within ½ mile of impacted area.

USGS 332115103403301 11S.32E.24.113222 CAPROCK CRN WELL

Available data for this site Location map GO

Lea County, New Mexico
Hydrologic Unit Code 12080004
Latitude 33°21'24.19", Longitude 103°40'40.02" NAD83
Land-surface elevation 4,363 feet above NGVD29
The depth of the well is 110 feet below land surface.
This well is completed in the High Plains aquifer (N100HGHPLN) national aquifer.
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Location of the site in New Mexico

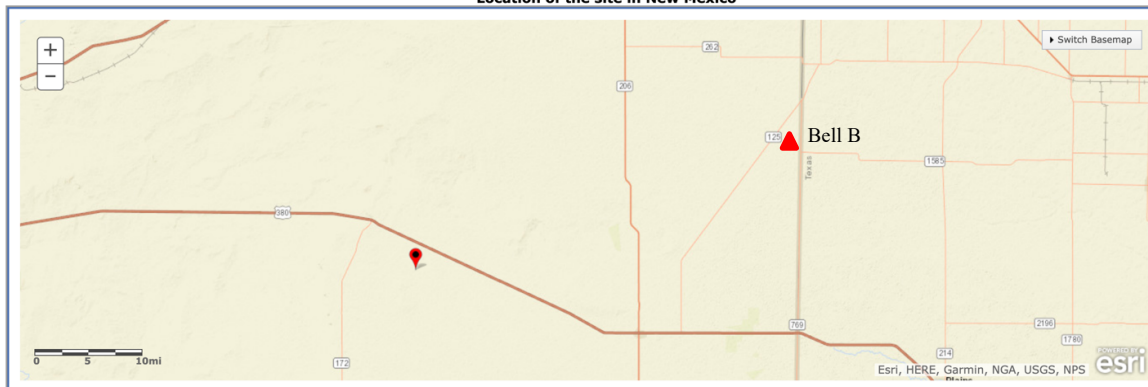


Figure 6: Ground water level reference from USGS database.

Bell-B FED #2

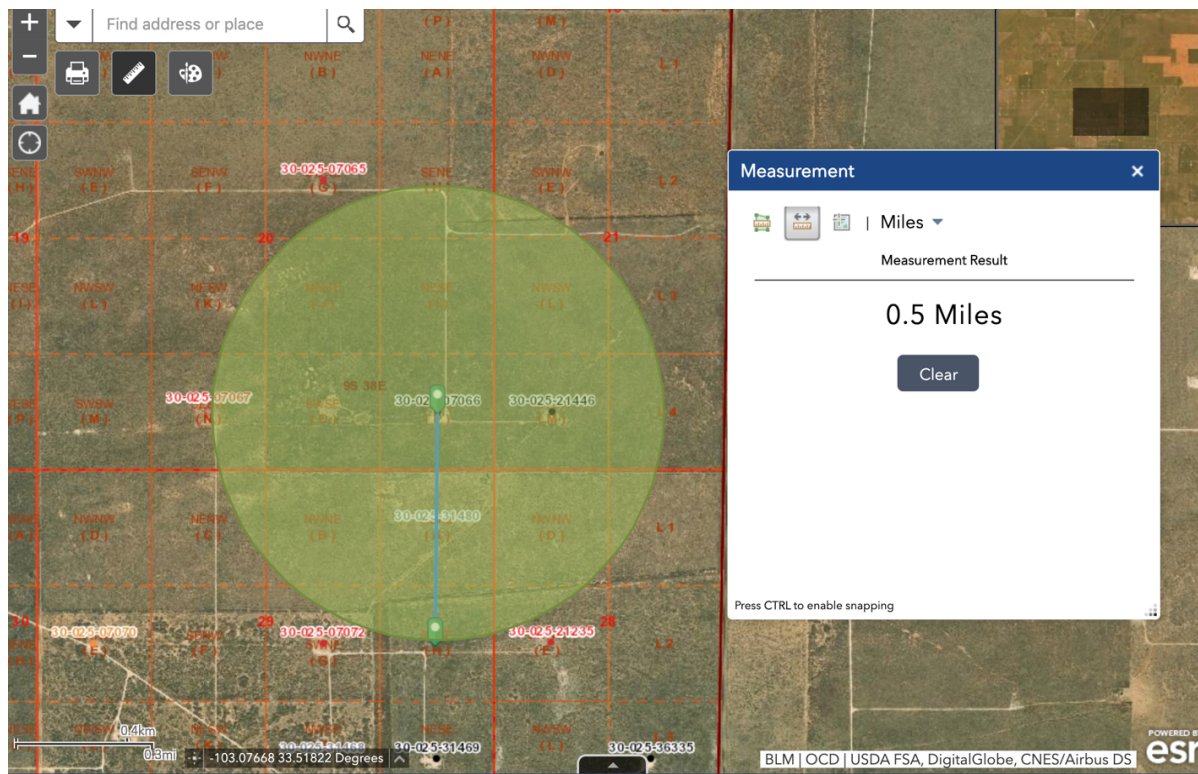


Figure 7: Topographic map of impacted area within 1/2 mile

Table 3 Ranking score summary based on GUIDELINES FOR REMEDIATION OF LEAKS, SPILLS AND RELEASE (August 13, 1993)

Depth to Ground water ^a	Ranking Score
<50 feet	20
50 - 99	10
>100	0
Wellhead Protection Area	
<1000 feet from a water source, or;	
<200 feet from private domestic water source	
Yes	20
No	0
Distance to Surface Water Body	
<200 horizontal feet	20
200 – 1000 horizontal feet	10
>1,000 horizontal feet	0

Bell-B FED #2

Notes:

^a Guidance does not explicitly state whether this is depth from ground surface or depth from other reference point.



Bell-B FED #2

PART II: REMEDIATION & CLOSURE***Field Works***

Contaminated soil will be treated and managed by following Table I in 19.15.29.12 NMAC – N, 8/14/2018

- Excavate until clean sand is spot visually. Sampling the soil for Lab analysis until good samples are found to identify the maximum horizontal and vertical boundaries or depth of impacted area. According to measurement of the area and Lab results, the total amount of dirt came out is about:

$$100 \text{ ft} \times 80 \text{ ft} \times 10 \text{ ft} = 8,0000 \text{ ft}^3 \approx 3,000 \text{ yard}^3$$

- Off-site treatment methods, describing in VI.A.2.b.ii & VI.A.2.b.iii in **GUIDELINES FOR REMEDIATION OF LEAKS, SPILLS AND RELEASE (August 13, 1993)**, including bioremediation and compositing with clean dirt, will be implemented until the concentration is brought down to or meet the level describing within the Table I in 19.15.29.12 NMAC – N, 8/14/2018. The ratio applying for compositing is 1:1, one load contaminated soil to one load clean soil. This remediation has been conducted since 11/25. Sampling procedure for some remediated soil has been conducted. Table 5 demonstrates that all the sampling result from lab analysis are within the requirement showing in Table I in 19.15.29.12 NMAC – N, 8/14/2018. This indicates that the remediation has achieved the closure criteria and ready for backfill. Figure 8 demonstrates the impacted area (site map) after excavation. The lab report will be shown in Appendix B.



Figure 8: Site maps after excavation

Bell-B FED #2

Recommended Remediation for Closure

According to GUIDELINES FOR REMEDIATION OF LEAKS, SPILLS AND RELEASE (August 13, 1993), the total ranking score determines the degree of remediation that may be required at any given site. The total ranking score is the sum of all ranking criteria listed in Sec. IV.A.2.a

- Based on the ranking criteria in Site Assessment Section, the ranking score of the impacted area is 10, NMOCD Recommended Remedial Action Levels (RRALs) are 50 milligrams per kilogram (mg/kg) for benzene, toluene, ethylbenzene, xylene (BTEX); 10 mg/kg for benzene; 1,000 mg/kg for total petroleum hydrocarbons (TPH); and 500 mg/kg for chloride. Check the detail in the Table 4.
- Also, according to the Table I in 19.15.29.12 NMAC – N, 8/14/2018 demonstrating in Figure 9, due to the underground water level is 60 feet based on the nearest water well provided by USGS database, the Remedial Action Levels (RRALs) are 50 milligrams per kilogram (mg/kg) for benzene, toluene, ethylbenzene, xylene (BTEX); 10 mg/kg for benzene; 2,500 mg/kg for total petroleum hydrocarbons (TPH); 1000 mg/kg for GTO + DRO; and 10,000 mg/kg for chloride.
- Since Table I in 19.15.29.12 NMAC – N, 8/14/2018, is newer rule executed by OCDNM, the final remedial action or closure criteria will use this table as reference.

Table 4 Closure criteria based on GUIDELINES FOR REMEDIATION OF LEAKS, SPILLS AND RELEASE (August 13, 1993)

Analyte (ppm)	Score of > 19	Score of 10 - 19	Score of 0 - 9
Benzene	10	10	10
BTEX	50	50	50
TPH	100	1000	5000
Chloride ^a	250	500	1000

^a The RRAL for chloride was developed subsequent to the publication of the 1993 guidance document and is therefore not referenced within the 1993 version.

Bell-B FED #2

Table I Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
≤ 50 feet	Chloride***	EPA 300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
51 feet-100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
>100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

*Or other test methods approved by the division.

**Numerical limits or natural background level, whichever is greater.

***This applies to releases of produced water or other fluids, which may contain chloride.

[19.15.29.12 NMAC - N, 8/14/2018]

Figure 9: Reference table from 19.15.29.12 NMAC – N, 8/14/2018

Table 5 Summarized lab results after remediation

Sample ID	Date	TPH (mg/kg)	GRO + DRO (mg/kg)	BTEX (mg/kg)	Benzene (mg/kg)	Chloride (mg/kg)
OCD Recommended Values		2,500	1,000	50	10	10,000
R1	11/26	796	599	<0.300	<0.05	336
PILE B - 1	11/26	101	146	<0.300	<0.05	368
PILE A - 1	11/26	116	98	<0.300	<0.05	352
C 1	11/26	374.1	286	<0.300	<0.05	336

Bell-B FED #2

REFERENCES

1. Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993
2. 19.15.29: Nature Resources and Wildlife Oil and Gas Release, NMAC, 8/14/2018



Bell-B FED #2

APPENDIX A



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

November 05, 2019

KELLY LI

KEM ENERGY

515A S FRY RD, STE. 406

KATY, TX 77450

RE: CONTAMINATED SAND

Enclosed are the results of analyses for samples received by the laboratory on 11/01/19 15:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

Page 1 of 5

Bell-B FED #2



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

KEM ENERGY
 KELLY LI
 515A S FRY RD, STE. 406
 KATY TX, 77450
 Fax To:

Received: 11/01/2019
 Reported: 11/05/2019
 Project Name: CONTAMINATED SAND
 Project Number: NOT GIVEN
 Project Location: LEA, NM

Sampling Date: 11/01/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: 21' (H903740-01)

BTEX 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2019	ND	1.97	98.4	2.00	4.52	
Toluene*	<0.050	0.050	11/05/2019	ND	1.65	82.6	2.00	2.64	
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.74	87.0	2.00	0.291	
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.23	87.1	6.00	1.94	
Total BTEX	<0.300	0.300	11/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/04/2019	ND	432	108	400	3.77	

TPH 8015M		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/04/2019	ND	226	113	200	0.366	
DRO >C10-C28*	<10.0	10.0	11/04/2019	ND	225	113	200	2.40	
EXT DRO >C28-C36	<10.0	10.0	11/04/2019	ND					

Surrogate: 1-Chlorooctane 99.2 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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Bell-B FED #2



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

KEM ENERGY
 KELLY LI
 515A S FRY RD, STE. 406
 KATY TX, 77450
 Fax To:

Received: 11/01/2019
 Reported: 11/05/2019
 Project Name: CONTAMINATED SAND
 Project Number: NOT GIVEN
 Project Location: LEA, NM

Sampling Date: 11/01/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: 28' (H903740-02)

BTX 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/02/2019	ND	1.87	93.5	2.00	11.9	
Toluene*	<0.050	0.050	11/02/2019	ND	1.51	75.3	2.00	17.6	
Ethylbenzene*	<0.050	0.050	11/02/2019	ND	1.61	80.3	2.00	24.8	
Total Xylenes*	<0.150	0.150	11/02/2019	ND	4.68	78.1	6.00	31.2	
Total BTX	<0.300	0.300	11/02/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID

94.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	11/04/2019	ND	432	108	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/02/2019	ND	222	111	200	3.50	
DRO >C10-C28*	<10.0	10.0	11/02/2019	ND	221	111	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	11/02/2019	ND					

Surrogate: 1-Chlorooctane 78.4 % 41-142

Surrogate: 1-Chlorooctadecane 80.3 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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Bell-B FED #2



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Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
- Samples reported on an as received basis (wet) unless otherwise noted on report



Cardinal Laboratories

*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager

Bell-B FED #2



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

November 18, 2019

HANG YEH
KEM ENERGY
515A S FRY RD, STE. 406
KATY, TX 77450

RE: BEIL - B

Enclosed are the results of analyses for samples received by the laboratory on 11/14/19 10:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene
Lab Director/Quality Manager

Page 1 of 6

Bell-B FED #2



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

KEM ENERGY
 HANG YEH
 515A S FRY RD, STE. 406
 KATY TX, 77450
 Fax To:

Received: 11/14/2019
 Reported: 11/18/2019
 Project Name: BEIL - B
 Project Number: NOT GIVEN
 Project Location: LEA, NM

Sampling Date: 11/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: 5' SOUTH (H903868-01)

BTEX 8021B			mg/kg		Analyzed By: MS			S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/15/2019	ND	1.74	86.9	2.00	5.83	
Toluene*	<0.050	0.050	11/15/2019	ND	1.74	86.8	2.00	5.82	
Ethylbenzene*	<0.050	0.050	11/15/2019	ND	1.75	87.4	2.00	6.00	
Total Xylenes*	<0.150	0.150	11/15/2019	ND	5.27	87.8	6.00	5.94	
Total BTEX	<0.300	0.300	11/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 183 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/15/2019	ND	416	104	400	3.77	
TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/15/2019	ND	217	109	200	1.41	
DRO >C10-C28*	35.4	10.0	11/15/2019	ND	207	104	200	2.09	
EXT DRO >C28-C36	17.2	10.0	11/15/2019	ND					

Surrogate: 1-Chlorooctane 90.5 % 41-142

Surrogate: 1-Chlorooctadecane 93.2 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Page 2 of 6

Bell-B FED #2



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Analytical Results For:

KEM ENERGY
 HANG YEH
 515A S FRY RD, STE. 406
 KATY TX, 77450
 Fax To:

Received: 11/14/2019
 Reported: 11/18/2019
 Project Name: BEIL - B
 Project Number: NOT GIVEN
 Project Location: LEA, NM

Sampling Date: 11/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: 4' EAST (H903868-02)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/15/2019	ND	1.74	86.9	2.00	5.83		
Toluene*	<0.050	0.050	11/15/2019	ND	1.74	86.8	2.00	5.82		
Ethylbenzene*	<0.050	0.050	11/15/2019	ND	1.75	87.4	2.00	6.00		
Total Xylenes*	<0.150	0.150	11/15/2019	ND	5.27	87.8	6.00	5.94		
Total BTX	<0.300	0.300	11/15/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	656	16.0	11/15/2019	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/15/2019	ND	217	109	200	1.41		
DRO >C10-C28*	<10.0	10.0	11/15/2019	ND	207	104	200	2.09		
EXT DRO >C28-C36	<10.0	10.0	11/15/2019	ND						

Surrogate: 1-Chlorooctane 87.2 % 41-142

Surrogate: 1-Chlorooctadecane 87.3 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Page 3 of 6

Bell-B FED #2



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

KEM ENERGY
HANG YEH
515A S FRY RD, STE. 406
KATY TX, 77450
Fax To:

Received: 11/14/2019
Reported: 11/18/2019
Project Name: BEIL - B
Project Number: NOT GIVEN
Project Location: LEA, NM

Sampling Date: 11/14/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WELL H 28' (H903868-03)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/14/2019	ND	1.73	86.5	2.00	8.21		
Toluene*	<0.050	0.050	11/14/2019	ND	1.73	86.6	2.00	8.42		
Ethylbenzene*	<0.050	0.050	11/14/2019	ND	1.76	87.9	2.00	8.10		
Total Xylenes*	<0.150	0.150	11/14/2019	ND	5.31	88.5	6.00	8.07		
Total BTX	<0.300	0.300	11/14/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/14/2019	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/14/2019	ND	190	94.8	200	1.49	
DRO >C10-C28*	<10.0	10.0	11/14/2019	ND	188	93.9	200	19.8	
EXT DRO >C28-C36	<10.0	10.0	11/14/2019	ND					

Surrogate: 1-Chlorooctane 97.0 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Page 4 of 6

Bell-B FED #2



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report



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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Bell-B FED #2

APPENDIX B



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

December 02, 2019

HANG YEH
KEM ENERGY
515A S FRY RD, STE. 406
KATY, TX 77450

RE: BEIL - B

Enclosed are the results of analyses for samples received by the laboratory on 11/26/19 11:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene
Lab Director/Quality Manager

Bell-B FED #2



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

KEM ENERGY
HANG YEH
515A S FRY RD, STE. 406
KATY TX, 77450
Fax To:

Received: 11/26/2019
Reported: 12/02/2019
Project Name: BEIL - B
Project Number: BEIL B FED #2
Project Location: LEA, NM

Sampling Date: 11/26/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: R 1 (H904011-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/26/2019	ND	1.87	93.5	2.00	2.08	
Toluene*	<0.050	0.050	11/26/2019	ND	1.79	89.6	2.00	2.31	
Ethylbenzene*	<0.050	0.050	11/26/2019	ND	1.82	91.2	2.00	2.28	
Total Xylenes*	<0.150	0.150	11/26/2019	ND	5.52	92.0	6.00	2.42	
Total BTEX	<0.300	0.300	11/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	11/27/2019	ND	400	100	400	7.69	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	12.4	10.0	11/27/2019	ND	214	107	200	2.34	
DRO >C10-C28*	587	10.0	11/27/2019	ND	208	104	200	1.59	
EXT DRO >C28-C36	197	10.0	11/27/2019	ND					

Surrogate: 1-Chlorooctane 95.4 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Page 2 of 7

Bell-B FED #2



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

KEM ENERGY
HANG YEH
515A S FRY RD, STE. 406
KATY TX, 77450
Fax To:

Received: 11/26/2019
Reported: 12/02/2019
Project Name: BEIL - B
Project Number: BEIL B FED #2
Project Location: LEA, NM

Sampling Date: 11/26/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: PILE B - 1 (H904011-02)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/26/2019	ND	1.86	93.0	2.00	1.92	
Toluene*	<0.050	0.050	11/26/2019	ND	1.82	91.1	2.00	1.83	
Ethylbenzene*	<0.050	0.050	11/26/2019	ND	1.77	88.6	2.00	1.78	
Total Xylenes*	<0.150	0.150	11/26/2019	ND	5.18	86.3	6.00	2.72	
Total BTX	<0.300	0.300	11/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	11/27/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/26/2019	ND	201	101	200	0.353	
DRO >C10-C28*	101	10.0	11/26/2019	ND	202	101	200	0.401	QR-03
EXT DRO >C28-C36	45.4	10.0	11/26/2019	ND					

Surrogate: 1-Chlorooctane 91.7 % 41-142

Surrogate: 1-Chlorooctadecane 102 % 37.6-147

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Bell-B FED #2



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Analytical Results For:

KEM ENERGY
HANG YEH
515A S FRY RD, STE. 406
KATY TX, 77450
Fax To:

Received: 11/26/2019
Reported: 12/02/2019
Project Name: BEIL - B
Project Number: BEIL B FED #2
Project Location: LEA, NM

Sampling Date: 11/26/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: PILE A - 1 (H904011-03)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/26/2019	ND	1.86	93.0	2.00	1.92	
Toluene*	<0.050	0.050	11/26/2019	ND	1.82	91.1	2.00	1.83	
Ethylbenzene*	<0.050	0.050	11/26/2019	ND	1.77	88.6	2.00	1.78	
Total Xylenes*	<0.150	0.150	11/26/2019	ND	5.18	86.3	6.00	2.72	
Total BTX	<0.300	0.300	11/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	11/27/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/26/2019	ND	201	101	200	0.353	
DRO >C10-C28*	98.3	10.0	11/26/2019	ND	202	101	200	0.401	
EXT DRO >C28-C36	17.5	10.0	11/26/2019	ND					

Surrogate: 1-Chlorooctane 95.5 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Bell-B FED #2



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Analytical Results For:

KEM ENERGY
HANG YEH
515A S FRY RD, STE. 406
KATY TX, 77450
Fax To:

Received: 11/26/2019
Reported: 12/02/2019
Project Name: BEIL - B
Project Number: BEIL B FED #2
Project Location: LEA, NM

Sampling Date: 11/26/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: C 1 (H904011-04)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/26/2019	ND	1.86	93.0	2.00	1.92	
Toluene*	<0.050	0.050	11/26/2019	ND	1.82	91.1	2.00	1.83	
Ethylbenzene*	<0.050	0.050	11/26/2019	ND	1.77	88.6	2.00	1.78	
Total Xylenes*	<0.150	0.150	11/26/2019	ND	5.18	86.3	6.00	2.72	
Total BTEX	<0.300	0.300	11/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	11/27/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/26/2019	ND	201	101	200	0.353	
DRO >C10-C28*	286	10.0	11/26/2019	ND	202	101	200	0.401	
EXT DRO >C28-C36	88.1	10.0	11/26/2019	ND					

Surrogate: 1-Chlorooctane 99.5 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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Notes and Definitions

- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report



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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

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APPENDIX C

Excavation Log

Day 1 (10/28): Clean up and prepare the surface of impacted area (100' X 80')

Day 2 (10/29): Remove Oil tanks from the area and started excavating impacted area

Day 3 (10/30): Excavating NE area of impacted region until clean dirt found visually, about 4 feet and piled up the dirt.

Day 4 (10/31): Excavating North area of impacted region until clean dirt found visually, about 54 feet and piled up the dirt.

Day 5 (11/1): Excavating the center part of impacted region, clean dirt was hit visually. Two samples were taken (21' & 28' respectively) and brought to Cardinal Lab

Day 6 (11/12): Excavating the area nearby the well head. Sampled the soil at NE area of impacted region and North area.

Day 7 (11/14) Excavating the area nearby the well head. 28' deep hole was dug. Some grey dirt was found. It was suspected to be clay, so the dirt was sampled and brought to the lab. The leak of gas on casing was found, a hole, about 10 feet from the ground level

Day 8 (11/15) Excavating the area nearby the well head. The leak of gas on casing was found, a hole, about 10 feet from the ground level

Day 9 (11/16) Excavating the area around well head

Day 10 (11/18) Excavating the area around well head

Day 11 (11/19) Excavating the area around well head a 1/2 circular sector area (20 feet radius from the well head) was identified to be contaminated and boundaries were identified.

Day 12 (11/20) Removing & clean out the dirt from the impacted area

Day 13 (11/21) Removing & clean out the dirt from the impacted area

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Day 14 (11/22) Removing & clean out the dirt from the impacted area

Day 15 (11/23) Removing & clean out the dirt from the impacted area

Day 16 (11/25) Remediating

Day 17 (11/26) Remediating

Day 18 (12/2) Remediating

Day 19 (12/3) Remediating

Day 20 (12/4) Remediating

Day 21 (12/5) Remediating



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