

## SITE INFORMATION

### Report Type: Closure Report 2RP-0697

#### General Site Information:

<b>Site:</b>	Koonunga Hills BGX Federal #1 Water Line				
<b>Company:</b>	EOG Resources				
<b>Section, Township and Range</b>	Unit P	Sec 03	T 22S	R 24E	
<b>Lease Number:</b>	API No. 30-015-34380				
<b>County:</b>	Eddy County				
<b>GPS:</b>	32.41249° N			104.479278° W	
<b>Surface Owner:</b>	Federal				
<b>Mineral Owner:</b>					
<b>Directions:</b>	From the intersection of HWY 285 and 137 travel southwest on 137 for approximately 13.1 mi, turn east onto lease road for 1.6 miles, turn north onto lease road and continue for approximately 2 miles to location.				

#### Release Data:

<b>Date Released:</b>	1/15/2009
<b>Type Release:</b>	Produced Water
<b>Source of Contamination:</b>	Water Gathering Line
<b>Fluid Released:</b>	Unknown
<b>Fluids Recovered:</b>	660 bbls

#### Official Communication:

<b>Name:</b>	James Kennedy		Clair Gonzales
<b>Company:</b>	EOG Resources		Tetra Tech
<b>Address:</b>	5509 Champions Dr		4000 N. Big Spring
			Ste 401
<b>City:</b>	Midland Texas, 79706		Midland, Texas
<b>Phone number:</b>	(432) 258-4346		(432) 687-8123
<b>Fax:</b>			
<b>Email:</b>	<a href="mailto:James_Kennedy@eogresources.com">James_Kennedy@eogresources.com</a>		<a href="mailto:Clair.Gonzales@tetrattech.com">Clair.Gonzales@tetrattech.com</a>

#### Ranking Criteria

<b>Depth to Groundwater:</b>	<b>Ranking Score</b>	<b>Site Data</b>
<50 ft High Karst Area	20	75'-100'
50-99 ft	10	
>100 ft.	0	
<b>WellHead Protection:</b>	<b>Ranking Score</b>	<b>Site Data</b>
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
<b>Surface Body of Water:</b>	<b>Ranking Score</b>	<b>Site Data</b>
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
<b>Total Ranking Score:</b>		<b>20</b>

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	100



September 27, 2018

Mr. Mike Bratcher  
Environmental Engineer Specialist  
Oil Conservation Division, District 2  
811 South First Street  
Artesia, New Mexico 88210

**Re: Closure Report for the EOG Resources, Koonunga Hills BGX Federal #1 Water Line, Unit P, Section 03, Township 22 South, Range 24 East, Eddy County, New Mexico.  
2RP-0697**

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by EOG Resources to assess a release that occurred at the Koonunga Hills BGX Federal #1 Water Line, Unit P, Section 03, Township 22 South, Range 25 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.41249, W 104.47927 °. The site location is shown on Figures 1 and 2.

### **Background**

The release occurred under Yates Petroleum Corporation, however the facility has since been acquired by EOG Resources, Inc. The facility is located in Section 19, Township 22 South, Range 25 East, however the release occurred in Unit P, Section 03, Township 22 South, Range 24 East. According to the State of New Mexico C-141 Initial Report, the leak was discovered on January 15, 2009, and released an unknown amount of produced water due to a water gathering line leak. Vacuum trucks were used to remove all freestanding fluids, recovering approximately 660 barrels of produced water. The release occurred in a dry canyon bottom. The initial C-141 Form is included in Appendix A.

### **Groundwater**

No water wells were listed within Section 03 on the New Mexico Office of the State Engineer's (NMOSE) database, the Geology and Groundwater Resources of Eddy County (Report 3), or the USGS National Water Information Database. The nearest well is listed on the NMOSE in Section 15, approximately 1.2 miles south of the site, and has a reported depth to groundwater of 100' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 75' and 100' below surface, however the site is located in a high karst area. The groundwater data is shown in Appendix B.

Tetra Tech

4000 North Big Spring, Suite 401, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



## Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the high karst area, the proposed RRAL for TPH is 100 mg/kg (GRO + DRO + ORO). Additionally, based on the reported depth to groundwater in the area, the proposed RRAL for chlorides is 600 mg/kg.

## Soil Assessment and Analytical Results

On August 30, 2018, Tetra Tech personnel were onsite to evaluate and sample the release area. Four (4) auger holes (AH-1, AH-2, AH-3, and AH-4) were installed in the release area to total depths of 0-6" below surface. Soil samples were collected and submitted to the laboratory for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample location is shown on Figure 3.

Referring to Table 1, none of the samples collected showed TPH, benzene, or total BTEX concentrations above the laboratory reporting limits. Additionally, the samples collected at auger holes (AH-2, AH-3, and AH-4) showed non-detect chloride concentrations. The area of auger hole (AH-1) showed a chloride of 16.5 mg/kg.

## Conclusion

Based on the laboratory results, EOG requests closure of this spill issue. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,  
TETRA TECH

A handwritten signature in blue ink that reads 'Clair Gonzales'.

Clair Gonzales,  
Project Manager

cc: Ryan Mann – NMSLO  
James Kennedy - EOG

## Figures

N



★ WALT CANYON SITE LOCATION

Eddy

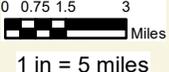


FIGURE 1	
WALT CANYON (32.41287°N, -14.479390°W)	
OVERVIEW MAP	
EDDY COUNTY, NEW MEXICO	
Project : 212C-MD-01238	
Date : 09/27/2018	
File : H:\GIS\212C-MD-01238	

Sources: Esri, HERE, Garmin, Japan, METI, Esri China (Hong Kong), Swatch, Bing, OpenStreetMap contributors, and the GIS User Community

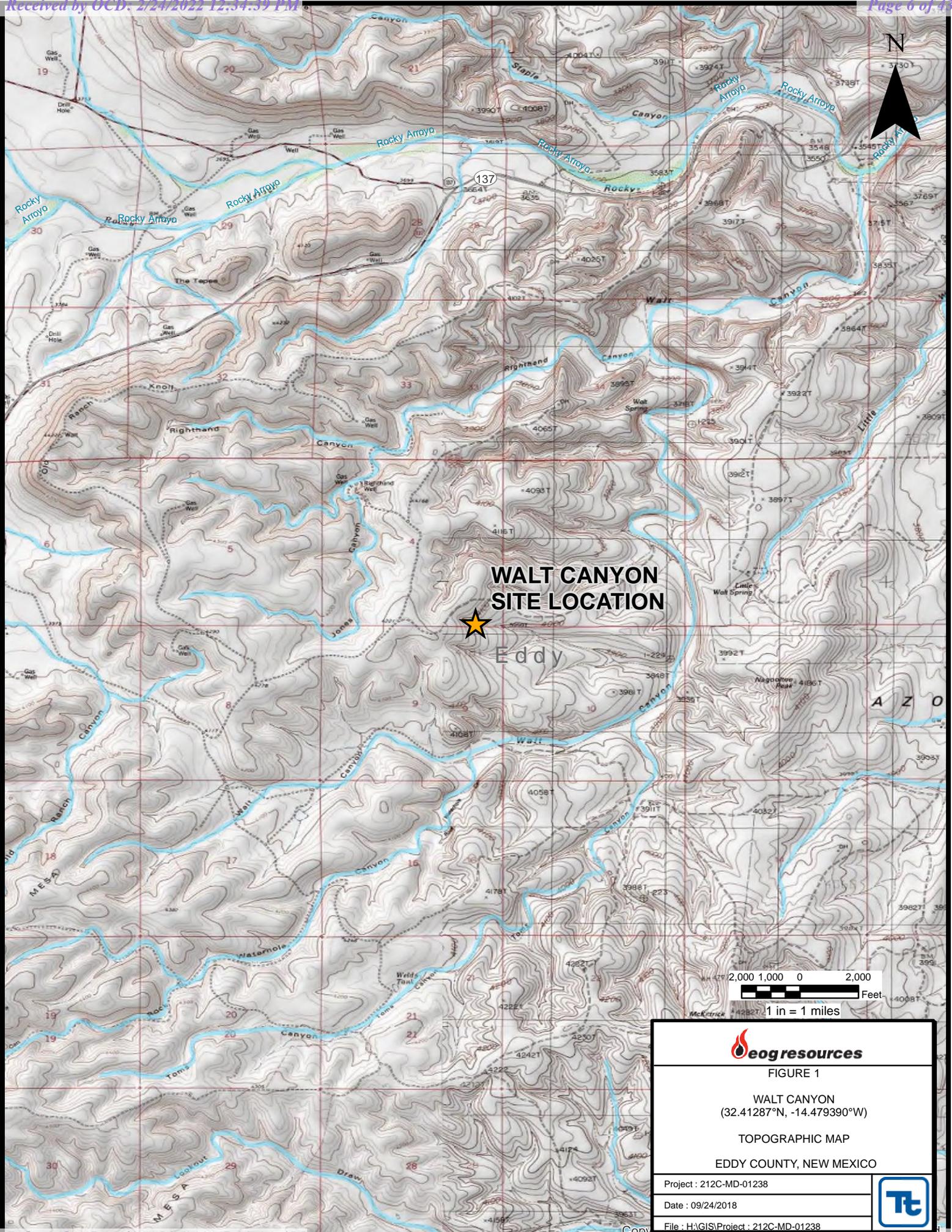
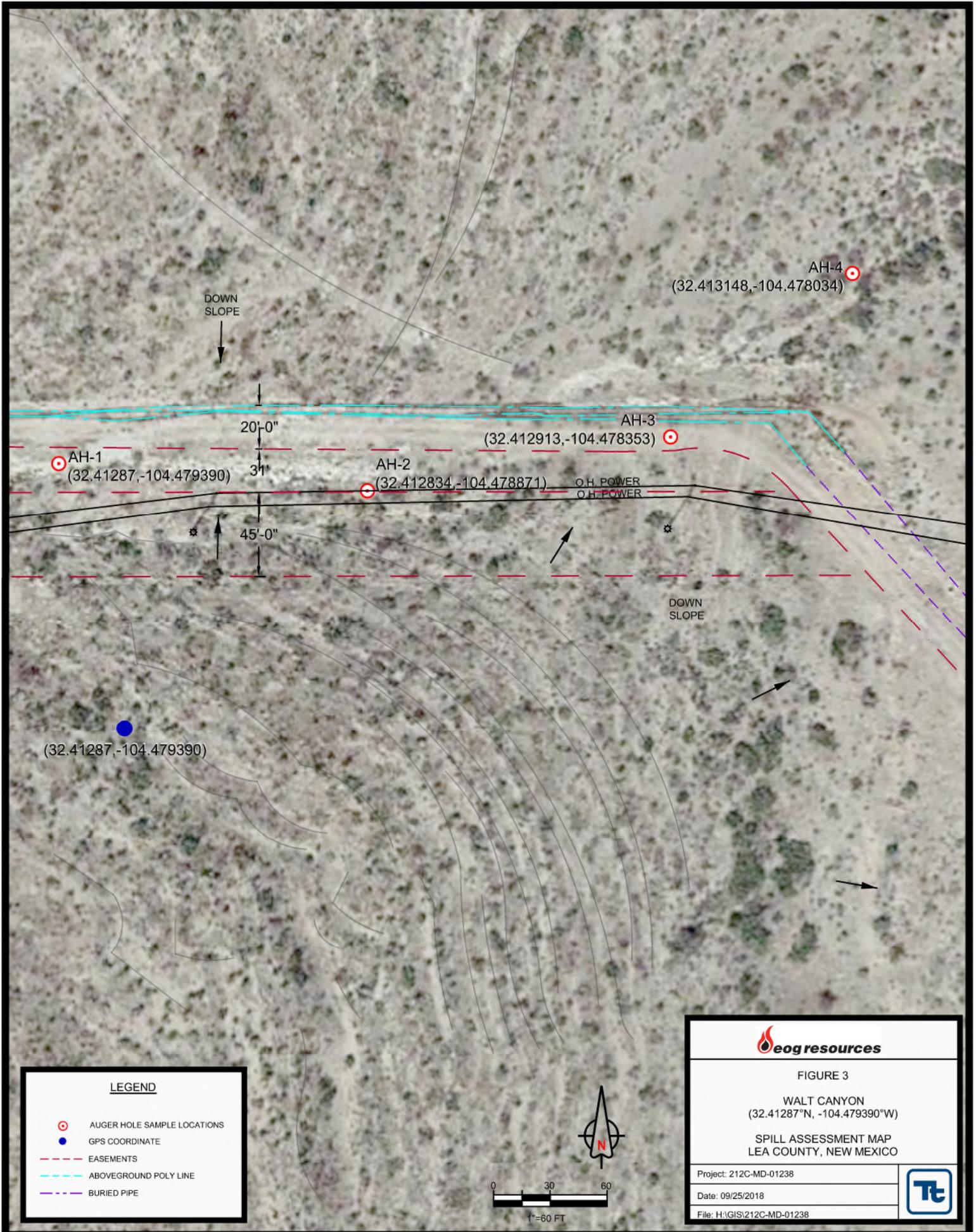


FIGURE 1	
WALT CANYON (32.41287°N, -14.479390°W)	
TOPOGRAPHIC MAP	
EDDY COUNTY, NEW MEXICO	
Project : 212C-MD-01238	
Date : 09/24/2018	
File : H:\GIS\Project : 212C-MD-01238	



# Tables

**Table 1  
EOG Resources  
Koonunga Hill BGX Federal #1  
Eddy County, New Mexico**

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (in)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	ORO	Total						
AH-1	8/30/2018	0-5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	16.5
AH-2	8/30/2018	0-5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<4.95
AH-3	8/30/2018	0-5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.99
AH-4	8/30/2018	0-5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.99

(-) Not Analyzed

# Appendix A

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	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

### Location of Release Source

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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 type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) 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 type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input 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)?	

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input 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: _____ Title: _____ Signature: <i>James Kennedy</i> _____ Date: _____ email: _____ Telephone: _____
<b><u>OCD Only</u></b> Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

## 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?	_____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input 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 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 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 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 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 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 type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input 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.

**Characterization Report Checklist:** *Each of the following items must be included in the report.*

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- 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.

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	
Facility ID	
Application ID	

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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: *James Kennedy* \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	
Facility ID	
Application ID	

## 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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: James Kennedy Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ OCD \_\_\_\_\_ Date: 2/24/2022 \_\_\_\_\_

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: Ashley Maxwell Date: 3/9/2023

Printed Name: Ashley Maxwell Title: Environmental Specialist

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, 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  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003  
JAN 30 2009 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

**Release Notification and Corrective Action**

*nmw 1109449451* OPERATOR X Initial Report Final Report

Name of Company Yates Petroleum Corporation	Contact Mike Stubblefield	
Address 105 South 4 <sup>th</sup> Street, Artesia, N.M. 88210	Telephone No. 505-748-4500 505-513-1712	
Facility Name Koonunga Hills BGX Federal #1 Wtr line 30-015-34380	Facility Type Producing Oil well.	
Surface Owner Federal	Mineral Owner.	Lease No.

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	19	22s	25e	1838'	FNL	1072'	FWL	Eddy

Latitude 32.41249 Longitude 104.47927

**NATURE OF RELEASE**

Type of Release Produced water.	Volume of Release Unknown	Volume Recovered 660 bbls Produced Water.
Source of Release. Water gathering line.	Date and Hour of Occurrence 1/15/2009 4:00pm	Date and Hour of Discovery same
Was Immediate Notice Given? Yes X No Not Required	If YES, To Whom? Mike Bratcher	
By Whom? Jerry Fanning	Date and Hour 1/16/2009 9:15am follow up with E-mail.	
Was a Watercourse Reached? X Yes No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

The produced water gathering line coming from the Koonuga Hills BGX Fed. #1 was found to be leaking. The well was immediately shut-in. Vacuum trucks were called to the release area and the free waters recovered. The line was replaced with a new flow line which was constructed above grade.

Describe Area Affected and Cleanup Action Taken.

The impacted area was located in Walt Canyon at Lat. 32.41249 Long 104.47927. The impacted area is located in the dry canyon bottom. The canyon bottom consists of bed rock which acted as a caught basin for the release waters. A Water sample were taken on 1/16/2009 from the standing water in the area of the release. The Water sample taken were submitted to Cardinal Lab. The water sample was analyzed for Chlorides using EPA method 4500 CL-B. Analytical results dated 1/26/2009 received from Cardinal Lab reported the Chlorides to be 1500 mg/kg in the release waters. The recovery of free waters will be continued until all recoverable waters have been vacuumed and hauled to SWD. The impacted area will be treated with Micro blaze & Kenaf. When recovery of free standing waters and the treatment of the area using Micro blaze & Kenaf has been concluded, Yates Petroleum Corporation will submit a final C-141 form requesting closure for the release that occurred on 1/15/2009. Analytical results attached.

Site ranking Depth to ground water - >100', Wellhead protection area - > 1000', Distance to surface water body - > 1000' site ranking score - 20

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: <i>Mike Stubblefield</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Mike Stubblefield	Signed By <i>Mike Bratcher</i> Approved by District Supervisor.	
Title: Environmental Regulatory Agent	Approval Date: 4/4/11	Expiration Date:
E-mail Address: mikes@ypcnm.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1/27/2009 Phone: 505-748-4500	REMEDATION per OCD Rules and Guidelines. <u>SUBMIT REMEDIATION PROPOSAL BY:</u> <i>5/4/11</i>	

\* Attach Additional Sheets If Necessary

*2RP-697*





District I  
1625 N. French Dr., Hobbs, NM 88240  
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State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

### Release Notification and Corrective Action

#### OPERATOR

Initial Report  Final Report

Name of Company <b>EOG Resources, Inc.</b>	Contact James Kennedy
Address <b>5509 Champions Drive, Midland, TX 79706</b>	Telephone No. <b>(432) 258-4346</b>
Facility Name <b>Koonunga Hills BGX Federal #1 Water Line</b>	Facility Type <b>Well</b>
Surface Owner: Federal	Mineral Owner:
API No. 30-015-34380	

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	03	22S	24E					Eddy

Latitude N 32.41249° Longitude W 104.47927°

#### NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release Unknown	Volume Recovered 660 bbls
Source of Release: Water Gathering Line	Date and Hour of Occurrence 01/15/2009 4:00pm	Date and Hour of Discovery 01/15/2009 4:00pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Mike Bratcher</b>	
By Whom? Jerry Fanning	Date and Hour 01/16/2009 9:15am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.\*

N/A

Describe Cause of Problem and Remedial Action Taken.\*

The produced water gathering line from the Koonuga Hills BGX Fed #1 developed a leak. The well was shut-in and vacuum trucks were used to recover all freestanding fluids. The release occurred in a dry canyon bottom. The released water was sampled for chlorides and showed a chloride concentration of 1,500 mg/kg.

Describe Area Affected and Cleanup Action Taken.\*

Tetra Tech inspected the site and collected samples. The laboratory data did not show any TPH, benzene, total BTEX, or chlorides above the RRALs. Tetra Tech prepared a closure report and submitted to the NMOCD for review.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
	Approved by District Supervisor:	
Printed Name: Clair Gonzales	Approval Date:	Expiration Date:
Title: Project Manager	Conditions of Approval:	
E-mail Address: Clair.Gonzales@TetraTech.com	Attached <input type="checkbox"/>	
Date: 09/14/2018	Phone: (432) 682-4559	

\* Attach Additional Sheets If Necessary

# Appendix B

### Water Well Data Average Depth to Groundwater (ft) EOG - Koonunga Hills BGX Federal #1

21 South			23 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

21 South			24 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

21 South			25 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

22 South			23 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

22 South			24 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

22 South			25 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South			23 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South			24 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South			25 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

- 88** New Mexico State Engineers Well Reports
- 105** USGS Well Reports
- 90** Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)  
Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34** NMOCD - Groundwater Data
- 121** Abandoned Waterwell (recently measured)



## New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,  
O=orphaned,  
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Sub-basin	County	Q 6	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
<a href="#">C 01403</a>	C	ED		3	2	1	24	22S	24E	551238	3582798*	238	213	25
<a href="#">C 01879</a>	C	ED		3	2	3	26	22S	24E	549635	3580374*	770	500	270
<a href="#">C 02351</a>	CUB	ED		3	2	2	15	22S	24E	548817	3584393*	120	100	20
<a href="#">C 02352</a>	CUB	ED		2	1	3	21	22S	24E	546212	3582164*	432	400	32
<a href="#">C 02353</a>	CUB	ED		2	1	4	27	22S	24E	548630	3580568*	250	22	228
<a href="#">C 02354</a>	CUB	ED		2	3	4	27	22S	24E	548631	3580165*	120	22	98
<a href="#">C 02355</a>	CUB	ED		1	1	4	32	22S	24E	545220	3578941*	280	245	35
<a href="#">C 02356</a>	CUB	ED		4	1	3	36	22S	24E	551046	3578772*	42	22	20
<a href="#">C 02357</a>	CUB	ED		4	3	3	19	22S	24E	543063	3581542*	278	218	60
<a href="#">C 02358</a>	CUB	ED		2	1	3	21	22S	24E	546212	3582164*	432	400	32
<a href="#">C 02359</a>	CUB	ED		2	4	1	31	22S	24E	543411	3579333*	270	240	30
<a href="#">C 02360</a>	CUB	ED		1	1	4	32	22S	24E	545220	3578941*	280	245	35
<a href="#">C 02384</a>	CUB	ED		3	2	2	15	22S	24E	548817	3584393*	120	100	20
<a href="#">C 02406</a>	C	ED				3	08	22S	24E	544703	3585071*	155		
<a href="#">C 02428</a>	CUB	ED		4	2	1	12	22S	24E	551426	3586017*	450	400	50

Average Depth to Water: **223 feet**  
 Minimum Depth: **22 feet**  
 Maximum Depth: **500 feet**

**Record Count:** 15

**PLSS Search:**

**Township:** 22S    **Range:** 24E

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

9/12/18 9:17 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

# Appendix C



# Certificate of Analysis Summary 597793

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Koonunga Hills BGX Federal 1 WRT Line

Project Id: 212C-MD-01238-400

Date Received in Lab: Fri Aug-31-18 02:24 pm

Contact: Clair Gonzales

Report Date: 12-SEP-18

Project Location: Eddy CO., NM

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	597793-001	597793-002	597793-003	597793-004		
	<i>Field Id:</i>	AH #1 (0-6")	AH #2 (0-6")	AH #3 (0-6")	AH #4 (0-6")		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Aug-30-18 00:00	Aug-30-18 00:00	Aug-30-18 00:00	Aug-30-18 00:00		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Sep-09-18 10:15	Sep-09-18 10:15	Sep-09-18 10:15	Sep-09-18 10:15		
	<i>Analyzed:</i>	Sep-09-18 17:15	Sep-09-18 17:36	Sep-09-18 17:57	Sep-09-18 18:19		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
m,p-Xylenes		<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398		
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Sep-04-18 16:00	Sep-04-18 16:00	Sep-04-18 16:00	Sep-04-18 16:00		
	<i>Analyzed:</i>	Sep-04-18 20:53	Sep-04-18 20:10	Sep-04-18 20:26	Sep-04-18 20:31		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		16.5 4.99	<4.95 4.95	<4.99 4.99	<4.99 4.99		
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Aug-31-18 17:00	Aug-31-18 17:00	Aug-31-18 17:00	Sep-05-18 13:00		
	<i>Analyzed:</i>	Sep-01-18 19:19	Sep-01-18 19:38	Sep-01-18 19:58	Sep-05-18 16:00		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks  
Project Manager

# Analytical Report 597793

## for Tetra Tech- Midland

**Project Manager: Clair Gonzales**

**EOG-Koonunga Hills BGX Federal 1 WRT Line**

**212C-MD-01238-400**

**12-SEP-18**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)  
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)  
Xenco-Atlanta (LELAP Lab ID #04176)  
Xenco-Tampa: Florida (E87429)  
Xenco-Lakeland: Florida (E84098)



12-SEP-18

Project Manager: **Clair Gonzales**

**Tetra Tech- Midland**

4000 N. Big Spring Suite 401

Midland, TX 79705

Reference: XENCO Report No(s): **597793**

**EOG-Koonunga Hills BGX Federal 1 WRT Line**

Project Address: Eddy CO., NM

**Clair Gonzales:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 597793. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 597793 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Kelsey Brooks**

Project Manager

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



# Sample Cross Reference 597793

## Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills BGX Federal 1 WRT Line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH #1 (0-6")	S	08-30-18 00:00		597793-001
AH #2 (0-6")	S	08-30-18 00:00		597793-002
AH #3 (0-6")	S	08-30-18 00:00		597793-003
AH #4 (0-6")	S	08-30-18 00:00		597793-004



## CASE NARRATIVE

**Client Name: Tetra Tech- Midland**

**Project Name: EOG-Koonunga Hills BGX Federal 1 WRT Line**

Project ID: 212C-MD-01238-400  
Work Order Number(s): 597793

Report Date: 12-SEP-18  
Date Received: 08/31/2018

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**Sample receipt non conformances and comments:**

None

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3062607 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



# Certificate of Analytical Results 597793



## Tetra Tech- Midland, Midland, TX EOG-Koonunga Hills BGX Federal 1 WRT Line

Sample Id: **AH #1 (0-6")** Matrix: Soil Date Received: 08.31.18 14.24  
 Lab Sample Id: 597793-001 Date Collected: 08.30.18 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: SCM % Moisture:  
 Analyst: SCM Date Prep: 09.04.18 16.00 Basis: Wet Weight  
 Seq Number: 3062122

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.5	4.99	mg/kg	09.04.18 20.53		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 08.31.18 17.00 Basis: Wet Weight  
 Seq Number: 3061970

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.01.18 19.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.01.18 19.19	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.01.18 19.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.01.18 19.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.01.18 19.19	
o-Terphenyl	84-15-1	93	%	70-135	09.01.18 19.19	



# Certificate of Analytical Results 597793



## Tetra Tech- Midland, Midland, TX EOG-Koonunga Hills BGX Federal 1 WRT Line

Sample Id: **AH #1 (0-6")** Matrix: Soil Date Received: 08.31.18 14.24  
 Lab Sample Id: 597793-001 Date Collected: 08.30.18 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: ALJ % Moisture:  
 Analyst: ALJ Date Prep: 09.09.18 10.15 Basis: Wet Weight  
 Seq Number: 3062607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.09.18 17.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.09.18 17.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.09.18 17.15	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.09.18 17.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.09.18 17.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.09.18 17.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.09.18 17.15	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	124	%	70-130	09.09.18 17.15		
4-Bromofluorobenzene	460-00-4	91	%	70-130	09.09.18 17.15		



# Certificate of Analytical Results 597793

## Tetra Tech- Midland, Midland, TX EOG-Koonunga Hills BGX Federal 1 WRT Line

Sample Id: **AH #2 (0-6")** Matrix: Soil Date Received: 08.31.18 14.24  
 Lab Sample Id: 597793-002 Date Collected: 08.30.18 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: SCM % Moisture:  
 Analyst: SCM Date Prep: 09.04.18 16.00 Basis: Wet Weight  
 Seq Number: 3062122

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.04.18 20.10	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 08.31.18 17.00 Basis: Wet Weight  
 Seq Number: 3061970

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.01.18 19.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.01.18 19.38	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.01.18 19.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.01.18 19.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	09.01.18 19.38	
o-Terphenyl	84-15-1	90	%	70-135	09.01.18 19.38	



# Certificate of Analytical Results 597793



## Tetra Tech- Midland, Midland, TX EOG-Koonunga Hills BGX Federal 1 WRT Line

Sample Id: **AH #2 (0-6")** Matrix: Soil Date Received: 08.31.18 14.24  
 Lab Sample Id: 597793-002 Date Collected: 08.30.18 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: ALJ % Moisture:  
 Analyst: ALJ Date Prep: 09.09.18 10.15 Basis: Wet Weight  
 Seq Number: 3062607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.09.18 17.36	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.09.18 17.36	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.09.18 17.36	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.09.18 17.36	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.09.18 17.36	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.09.18 17.36	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.09.18 17.36	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>		<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>
4-Bromofluorobenzene	460-00-4	85		%	70-130	09.09.18 17.36	
1,4-Difluorobenzene	540-36-3	122		%	70-130	09.09.18 17.36	



# Certificate of Analytical Results 597793



## Tetra Tech- Midland, Midland, TX EOG-Koonunga Hills BGX Federal 1 WRT Line

Sample Id: **AH #3 (0-6")** Matrix: Soil Date Received: 08.31.18 14.24  
 Lab Sample Id: 597793-003 Date Collected: 08.30.18 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: SCM % Moisture:  
 Analyst: SCM Date Prep: 09.04.18 16.00 Basis: Wet Weight  
 Seq Number: 3062122

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	09.04.18 20.26	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 08.31.18 17.00 Basis: Wet Weight  
 Seq Number: 3061970

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.01.18 19.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.01.18 19.58	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.01.18 19.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.01.18 19.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.01.18 19.58	
o-Terphenyl	84-15-1	92	%	70-135	09.01.18 19.58	



# Certificate of Analytical Results 597793



## Tetra Tech- Midland, Midland, TX EOG-Koonunga Hills BGX Federal 1 WRT Line

Sample Id: **AH #3 (0-6")** Matrix: Soil Date Received: 08.31.18 14.24  
 Lab Sample Id: 597793-003 Date Collected: 08.30.18 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: ALJ % Moisture:  
 Analyst: ALJ Date Prep: 09.09.18 10.15 Basis: Wet Weight  
 Seq Number: 3062607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.09.18 17.57	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.09.18 17.57	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.09.18 17.57	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.09.18 17.57	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.09.18 17.57	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.09.18 17.57	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.09.18 17.57	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>		<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>
4-Bromofluorobenzene	460-00-4	94		%	70-130	09.09.18 17.57	
1,4-Difluorobenzene	540-36-3	126		%	70-130	09.09.18 17.57	



# Certificate of Analytical Results 597793



## Tetra Tech- Midland, Midland, TX EOG-Koonunga Hills BGX Federal 1 WRT Line

Sample Id: **AH #4 (0-6")** Matrix: Soil Date Received: 08.31.18 14.24  
 Lab Sample Id: 597793-004 Date Collected: 08.30.18 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: SCM % Moisture:  
 Analyst: SCM Date Prep: 09.04.18 16.00 Basis: Wet Weight  
 Seq Number: 3062122

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	09.04.18 20.31	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.05.18 13.00 Basis: Wet Weight  
 Seq Number: 3062279

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.05.18 16.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.05.18 16.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.05.18 16.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.05.18 16.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.05.18 16.00	
o-Terphenyl	84-15-1	97	%	70-135	09.05.18 16.00	



# Certificate of Analytical Results 597793

## Tetra Tech- Midland, Midland, TX EOG-Koonunga Hills BGX Federal 1 WRT Line

Sample Id: **AH #4 (0-6")** Matrix: Soil Date Received: 08.31.18 14.24  
 Lab Sample Id: 597793-004 Date Collected: 08.30.18 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: ALJ % Moisture:  
 Analyst: ALJ Date Prep: 09.09.18 10.15 Basis: Wet Weight  
 Seq Number: 3062607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.09.18 18.19	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.09.18 18.19	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.09.18 18.19	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.09.18 18.19	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.09.18 18.19	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.09.18 18.19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.09.18 18.19	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	125	%	70-130	09.09.18 18.19		
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.09.18 18.19		





**Tetra Tech- Midland**  
EOG-Koonunga Hills BGX Federal 1 WRT Line

**Analytical Method: Chloride by EPA 300**

Seq Number: 3062122

MB Sample Id: 7661639-1-BLK

Matrix: Solid

LCS Sample Id: 7661639-1-BKS

Prep Method: E300P

Date Prep: 09.04.18

LCSD Sample Id: 7661639-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	272	109	272	109	90-110	0	20	mg/kg	09.04.18 19:28	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3062122

Parent Sample Id: 597791-007

Matrix: Soil

MS Sample Id: 597791-007 S

Prep Method: E300P

Date Prep: 09.04.18

MSD Sample Id: 597791-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.860	251	256	102	256	102	90-110	0	20	mg/kg	09.04.18 19:44	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3062122

Parent Sample Id: 597793-001

Matrix: Soil

MS Sample Id: 597793-001 S

Prep Method: E300P

Date Prep: 09.04.18

MSD Sample Id: 597793-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.5	250	266	100	266	100	90-110	0	20	mg/kg	09.04.18 20:58	

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3061970

MB Sample Id: 7661565-1-BLK

Matrix: Solid

LCS Sample Id: 7661565-1-BKS

Prep Method: TX1005P

Date Prep: 08.31.18

LCSD Sample Id: 7661565-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	918	92	917	92	70-135	0	20	mg/kg	09.01.18 11:45	
Diesel Range Organics (DRO)	<8.13	1000	925	93	911	91	70-135	2	20	mg/kg	09.01.18 11:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		125		127		70-135	%	09.01.18 11:45
o-Terphenyl	95		95		92		70-135	%	09.01.18 11:45

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

[D] = 100\*(C-A) / B  
RPD = 200\* |(C-E) / (C+E)|  
[D] = 100 \* (C) / [B]  
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
A = Parent Result  
C = MS/LCS Result  
E = MSD/LCSD Result

MS = Matrix Spike  
B = Spike Added  
D = MSD/LCSD % Rec



**Tetra Tech- Midland**  
EOG-Koonunga Hills BGX Federal 1 WRT Line

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3062279

MB Sample Id: 7661747-1-BLK

Matrix: Solid

LCS Sample Id: 7661747-1-BKS

Prep Method: TX1005P

Date Prep: 09.05.18

LCSD Sample Id: 7661747-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	919	92	878	88	70-135	5	20	mg/kg	09.05.18 15:20	
Diesel Range Organics (DRO)	<8.13	1000	962	96	925	93	70-135	4	20	mg/kg	09.05.18 15:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		117		118		70-135	%	09.05.18 15:20
o-Terphenyl	108		103		101		70-135	%	09.05.18 15:20

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3061970

Parent Sample Id: 597741-007

Matrix: Soil

MS Sample Id: 597741-007 S

Prep Method: TX1005P

Date Prep: 08.31.18

MSD Sample Id: 597741-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	9.03	997	876	87	889	88	70-135	1	20	mg/kg	09.01.18 12:45	
Diesel Range Organics (DRO)	<8.10	997	909	91	925	93	70-135	2	20	mg/kg	09.01.18 12:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		124		70-135	%	09.01.18 12:45
o-Terphenyl	88		92		70-135	%	09.01.18 12:45

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3062279

Parent Sample Id: 597793-004

Matrix: Soil

MS Sample Id: 597793-004 S

Prep Method: TX1005P

Date Prep: 09.05.18

MSD Sample Id: 597793-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.98	997	858	86	829	83	70-135	3	20	mg/kg	09.05.18 16:20	
Diesel Range Organics (DRO)	<8.10	997	921	92	898	90	70-135	3	20	mg/kg	09.05.18 16:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		110		70-135	%	09.05.18 16:20
o-Terphenyl	98		95		70-135	%	09.05.18 16:20

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

[D] = 100\*(C-A) / B  
RPD = 200\* |(C-E) / (C+E)|  
[D] = 100 \* (C) / [B]  
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
A = Parent Result  
C = MS/LCS Result  
E = MSD/LCSD Result

MS = Matrix Spike  
B = Spike Added  
D = MSD/LCSD % Rec



**Tetra Tech- Midland**  
EOG-Koonunga Hills BGX Federal 1 WRT Line

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3062607

MB Sample Id: 7661932-1-BLK

Matrix: Solid

LCS Sample Id: 7661932-1-BKS

Prep Method: SW5030B

Date Prep: 09.09.18

LCSD Sample Id: 7661932-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0727	73	0.102	101	70-130	34	35	mg/kg	09.09.18 14:47	
Toluene	0.000778	0.100	0.0952	95	0.0753	75	70-130	23	35	mg/kg	09.09.18 14:47	
Ethylbenzene	<0.000566	0.100	0.109	109	0.0859	85	70-130	24	35	mg/kg	09.09.18 14:47	
m,p-Xylenes	<0.00102	0.200	0.210	105	0.166	83	70-130	23	35	mg/kg	09.09.18 14:47	
o-Xylene	0.000509	0.100	0.102	102	0.0814	81	70-130	22	35	mg/kg	09.09.18 14:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	120		108		89		70-130	%	09.09.18 14:47
4-Bromofluorobenzene	90		102		85		70-130	%	09.09.18 14:47

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3062607

Parent Sample Id: 597744-007

Matrix: Soil

MS Sample Id: 597744-007 S

Prep Method: SW5030B

Date Prep: 09.09.18

MSD Sample Id: 597744-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.163	161	0.149	148	70-130	9	35	mg/kg	09.09.18 15:29	X
Toluene	<0.000459	0.101	0.120	119	0.108	107	70-130	11	35	mg/kg	09.09.18 15:29	
Ethylbenzene	<0.00202	0.101	0.133	132	0.122	121	70-130	9	35	mg/kg	09.09.18 15:29	X
m,p-Xylenes	<0.00102	0.202	0.260	129	0.234	116	70-130	11	35	mg/kg	09.09.18 15:29	
o-Xylene	<0.00202	0.101	0.127	126	0.113	112	70-130	12	35	mg/kg	09.09.18 15:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	80		83		70-130	%	09.09.18 15:29
4-Bromofluorobenzene	85		78		70-130	%	09.09.18 15:29

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

[D] = 100\*(C-A) / B  
RPD = 200\* |(C-E) / (C+E)|  
[D] = 100 \* (C) / [B]  
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
A = Parent Result  
C = MS/LCS Result  
E = MSD/LCSD Result

MS = Matrix Spike  
B = Spike Added  
D = MSD/LCSD % Rec

Analysis Request of Chain of Custody Record



# Tetra Tech, Inc.

4000 N. Big Spring Street, Ste 401  
Midland, Texas 79705  
Tel (432) 682-4559  
Fax (432) 682-3946

597703

Client Name: **EOG** Site Manager: **Clair Gonzales**

Project Name: **Koonunga Hills BGX Federal 1 WRT Line**

Project Location: **Eddy CO., NM** Project #: **212C-MD-01238 - 400**

Invoice to: **EOG James Kennedy**

Receiving Laboratory: **Xenco** Sampler Signature: *[Signature]*

Comments: **Reference Number: 2RP-697**

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD			# CONTAINERS	FILTERED (Y/N)
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE		
AH #1 (0-6")		8/30/2018		X				X		1 N
AH #2 (0-6")		8/30/2018		X				X		1 N
AH #3 (0-6")		8/30/2018		X				X		1 N
AH #4 (0-6")		8/30/2018		X				X		1 N

Relinquished by: *[Signature]* Date: **8/31/18** Time: \_\_\_\_\_

Received by: *[Signature]* Date: **8/31/18** Time: **1024**

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

LAB USE ONLY	REMARKS:
<input checked="" type="checkbox"/>	STANDARD
<input type="checkbox"/>	RUSH: Same Day 24 hr 48 hr 72 hr
<input type="checkbox"/>	Rush Charges Authorized
<input type="checkbox"/>	Special Report Limits or TRRP Report

Sample Temperature: **38.100**

(Circle) HAND DELIVERED FEDEX UPS Tracking #: \_\_\_\_\_

ORIGINAL COPY



# XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 08/31/2018 02:24:00 PM

Work Order #: 597793

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

### Sample Receipt Checklist

### Comments

#1 *Temperature of cooler(s)?	3.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6*Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 08/31/2018  
Brianna Teel

Checklist reviewed by: Kelsey Brooks Date: 09/04/2018  
Kelsey Brooks

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
 Action 83994

**CONDITIONS**

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 83994
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
amaxwell	None	3/9/2023