

SITE INFORMATION

Report Type: Closure Report 2RP-0736

General Site Information:

Site:	Koonunga Hill BGX Federal #1 Pipeline					
Company:	EOG Resources					
Section, Township and Range	Unit E	Sec. 19	T 22S	R 25E		
Lease Number:	API No.					
County:	Eddy County					
GPS:	32.380489° N			103.442779° W		
Surface Owner:	Federal					
Mineral Owner:	Federal					
Directions:	From the Intersection of HWY62-180 and Cr 672 Head West on CR672 for approx 12 miles and arrive on pipeline location.					

Release Data:

Date Released:	2/10/2011
Type Release:	Produced Water
Source of Contamination:	6" zaplock froze
Fluid Released:	75bbbls
Fluids Recovered:	0bbbls

Official Communication:

Name:	James Kennedy		Clair Gonzales
Company:	EOG Resources		Tetra Tech
Address:	5509 Champions Dr		901 West Wall St
			Ste 100
City:	Midland Texas, 79706		Midland, Texas
Phone number:	(432) 556-8074		(432) 687-8110
Fax:			
Email:	james_kennedy@eogresources.com		Clair.Gonzales@tetrattech.com

Ranking Criteria

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

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



September 28, 2018

Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
1301 West Grand Avenue
Artesia, New Mexico 88210

Re: Closure Report for the EOG Resources, Koonunga Hill BGX Federal #1 Pipeline, Unit E, Section 19, Township 22 South, Range 25 East, Eddy County, New Mexico. 2RP-0736.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by EOG Resources to evaluate a release that occurred at the Koonunga Hill BGX Federal #1 Pipeline, Unit E, Section 19, Township 22 South, Range 25 East, Eddy County, New Mexico (site). The spill site coordinates are N 32.380489°, W 103.442779°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the release was discovered on February 10, 2011, and released approximately 75 barrels of produced water in 22 places along the pipeline. It was caused due to the cold weather freezing the 6" zap lock waterline in multiple places. The release occurred along a seven mile stretch beginning at the Koonunga Hill BGX Fed. #1 and terminates at the Atom Ant #1. The initial C-141 Form is included in Appendix A.

Groundwater

One water well was listed within Section 19 on the New Mexico Office of the State Engineer's website with a reported depth to groundwater of 56' below surface. Also, five (5) wells are listed in Section 19 on the USGS National Water Information System with reported depths to groundwater of 52' and 56' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 50' and 75' below surface, however the site is located in a high karst area. The groundwater data is shown in Appendix B.



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 depth to groundwater and karst area, the proposed RRAL for TPH is 100 mg/kg (GRO + DRO + ORO). Additionally, 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. Twenty-two (22) auger holes (AH-1 through AH-22) were installed in the release area to evaluate the soils along the seven mile pipeline. The samples were analyzed for TPH by EPA method 8015 modified, BTEX by EPA method 8021B, and chloride by EPA method 300.0. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample locations are shown in Figure 3.

Referring to Table 1, none of the samples analyzed showed benzene, total BTEX, or TPH concentrations above the laboratory reporting limits. The TPH concentrations showed a range from <14.9 mg/kg to 16.1 mg/kg. The areas of AH-1 through Ah-22 showed chloride concentrations ranging from <4.95 mg/kg to 16.6 mg/kg, respectively.

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.

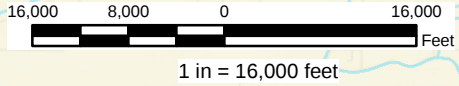
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Project Manager

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

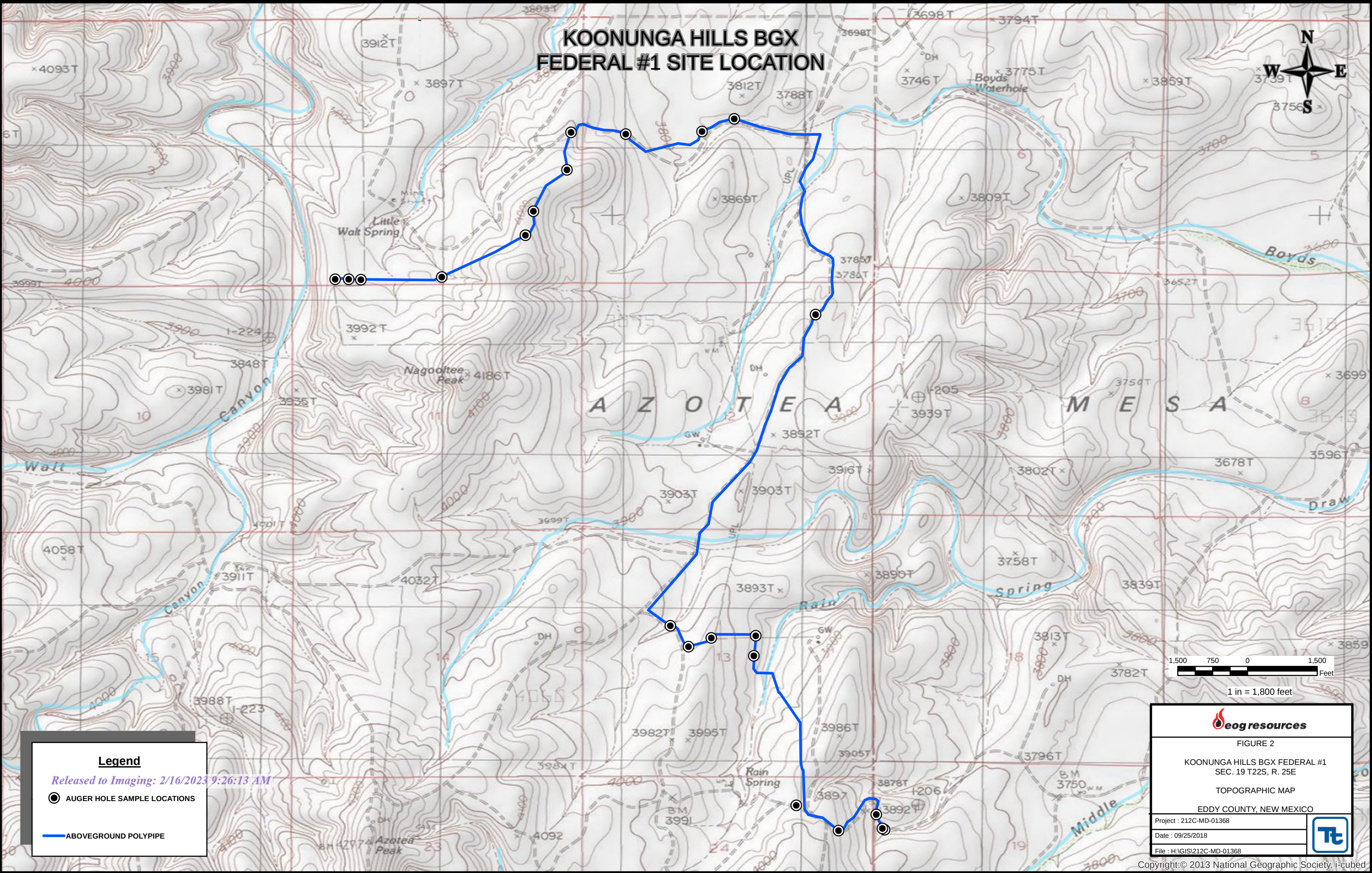
cc: Ryan Mann – NMSLO
James Kennedy - EOG

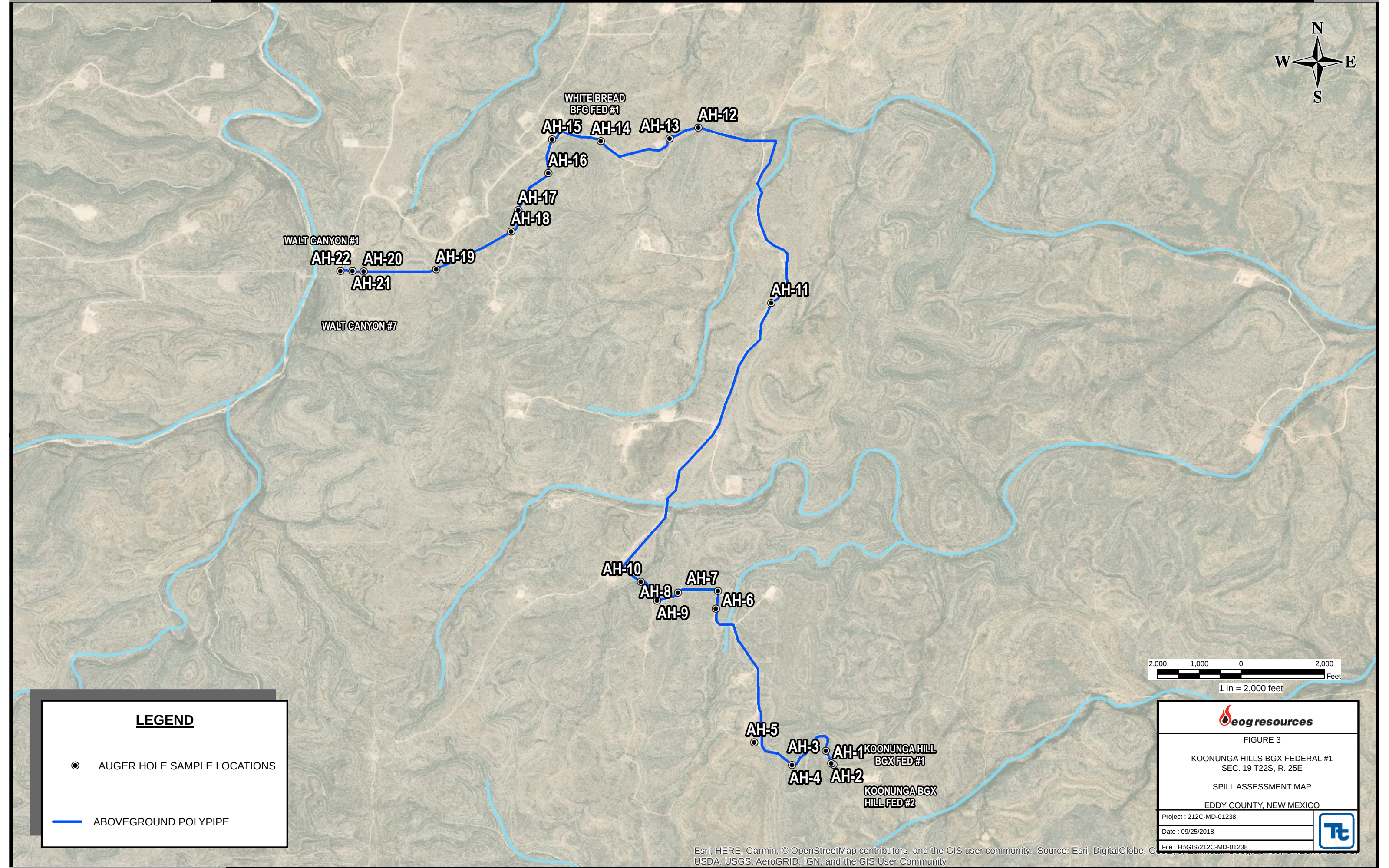
Figures



● AUGER HOLE SAMPLE LOCATIONS

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, Mapbox, and the GIS User Community





Tables

Table 1
EOG Resources
Koonunga Hill BGX Federal #1 Pipeline
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	9/10/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<5.02
AH-2	9/10/2018	0-6"	-	X		<15.0	61.4	<15.0	61.4	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	16.6
AH-3	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.95
AH-4	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<4.95
AH-5	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<5.00
AH-6	9/10/2018	0-6"	-	X		<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<5.01
AH-7	9/10/2018	0-6"	-	X		<14.9	<14.9	<14.9	<14.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<4.95
AH-8	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<4.96
AH-9	9/10/2018	0-6"	-	X		<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<5.05
AH-10	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.95
AH-11	9/10/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<5.00
AH-12	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.99
AH-13	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.99
AH-14	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<5.00
AH-15	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.95
AH-16	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<4.95
AH-17	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.96
AH-18	9/10/2018	0-6"	-	X		<14.9	<14.9	<14.9	<14.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<5.00
AH-19	9/10/2018	0-6"	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<5.02
AH-20	9/10/2018	0-6"	-	X		<14.9	<14.9	<14.9	<14.9	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<4.99
AH-21	9/10/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<5.02
AH-22	9/10/2018	0-6"	-	X		<14.9	57.8	18.3	76.1	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.95

(-) Not Analyzed

Photos

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View East – Area of AH-1



View East – Area of AH-2

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View East – Area of AH-3



View North – Area of AH-4

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View East – Area of AH-5



View East – Area of AH-6

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View East – Area of AH-7



View Northwest – Area of AH-8

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View North – Area of AH-9



View East – Area of AH-10

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View East – Area of AH-11



View North – Area of AH-12

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View Northwest – Area of AH-13



View East – Area of AH-14

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View West – Area of AH-15



View West – Area of AH-16

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View West – Area of AH-17



View North – Area of AH-18

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View North – Area of AH-19



View North – Area of AH-20

EOG Resources
Koonunga Hill BX Fed. #1
Eddy County, New Mexico



View North – Area of AH-21



View North – Area of AH-22

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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ 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

☐ The source of the release has been stopped.	
☐ The impacted area has been secured to protect human health and the environment.	
☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
☐ 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: <u>James Kennedy</u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
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?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☐ 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)?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☐ 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?	☐ Yes ☐ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☐ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☐ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☐ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☐ 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: _____ Date: _____

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: Brittany Hall Date: 2/16/2023

Printed Name: Brittany Hall Title: Environmental Specialist

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Received by OGD: 2/24/2022 1:01:42 PM
Released to Imaging: 2/16/2023 9:26:13 AM

District I
625 N. French Dr., Hobbs, NM 88240
District II
301 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

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 Yates Petroleum Corporation	OGRID Number 25575	Contact Amanda Trujillo
Address 104 S. 4 TH Street	Telephone No. 575-748-1471	
Facility Name Koonunga Hill BGX Federal #1 Pipeline	API Number	Facility Type pipeline
		Order Number 2RP-
Surface Owner Federal	Mineral Owner Federal	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	NORTH	1072	WEST	EDDY

NATURE OF RELEASE

Type of Release WATER	Volume of Release 75	Volume Recovered 0
Source of Release Cold weather caused 6"zaplock waterline to freeze.	Date and Hour of Occurrence 2/10/2011	Date and Hour of Discovery 2/10/2011 - AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - NMOCD/Artesia	
By Whom? Amanda Trujillo - Yates Petroleum Corporation	Date and Hour 02/11/2011 am	
Was a Watercourse Reached? ☐ Yes ☒ 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.* Zaplock line froze and separated in multiple places. Line was shut in at the time. The line begins at the Koonunga Hill BGX Fed #1 Battery and terminates at the Atom Ant #1.		
Describe Area Affected and Cleanup Action Taken.* An approximate length of line is 7 miles. Cold weather caused 6"zaplock waterline to freeze. The line pulled apart in 22 places. The line was shut down at the time. It was estimated at the time that approximately 2-3 bbls was released at each spot. At the time of the release the line was shut in. Depth to Ground Water: >100' (approx. 100', per New Mexico Chevron Texaco Trend Map); Wellhead Protection Area: No; Distance to Surface Water Body: >1000'; SITE RANKING IS 0. Analytical Results Enclosed		
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.		

OIL CONSERVATION DIVISION

Signature: *A Trujillo*
Printed Name: Amanda Trujillo
Title: Environmental Scientist
E-mail Address: atrujillo@yatespetroleum.com
Date: Tuesday, September 27, 2011 Phone: 575-748-4310

Approved by District Supervisor:

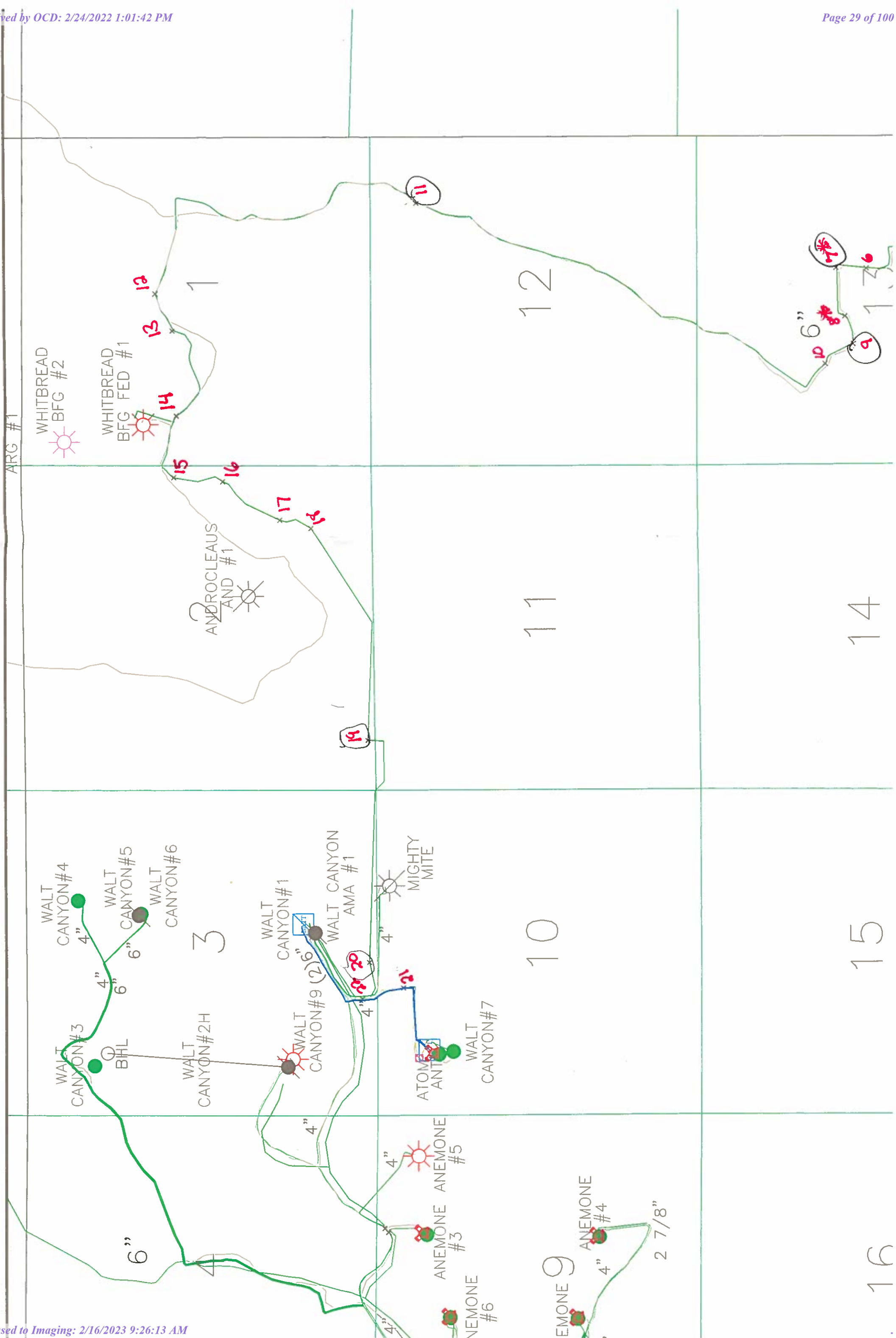
Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

Attach Additional Sheets If Necessary





LEGEND

- OIL WELL
- GAS WELL
- OIL WELL PROPOSED
- GAS WELL PROPOSED
- BATTERY
- GAS WELL 3RD PARTY
- OIL WELL 3RD PARTY
- PLUGGED OIL WELL
- WORKING INTEREST GAS WELL
- SALT WATER DISPOSAL

GPS ROADS

NM STATE

US BUREAU OF LAND MANAGEMENT

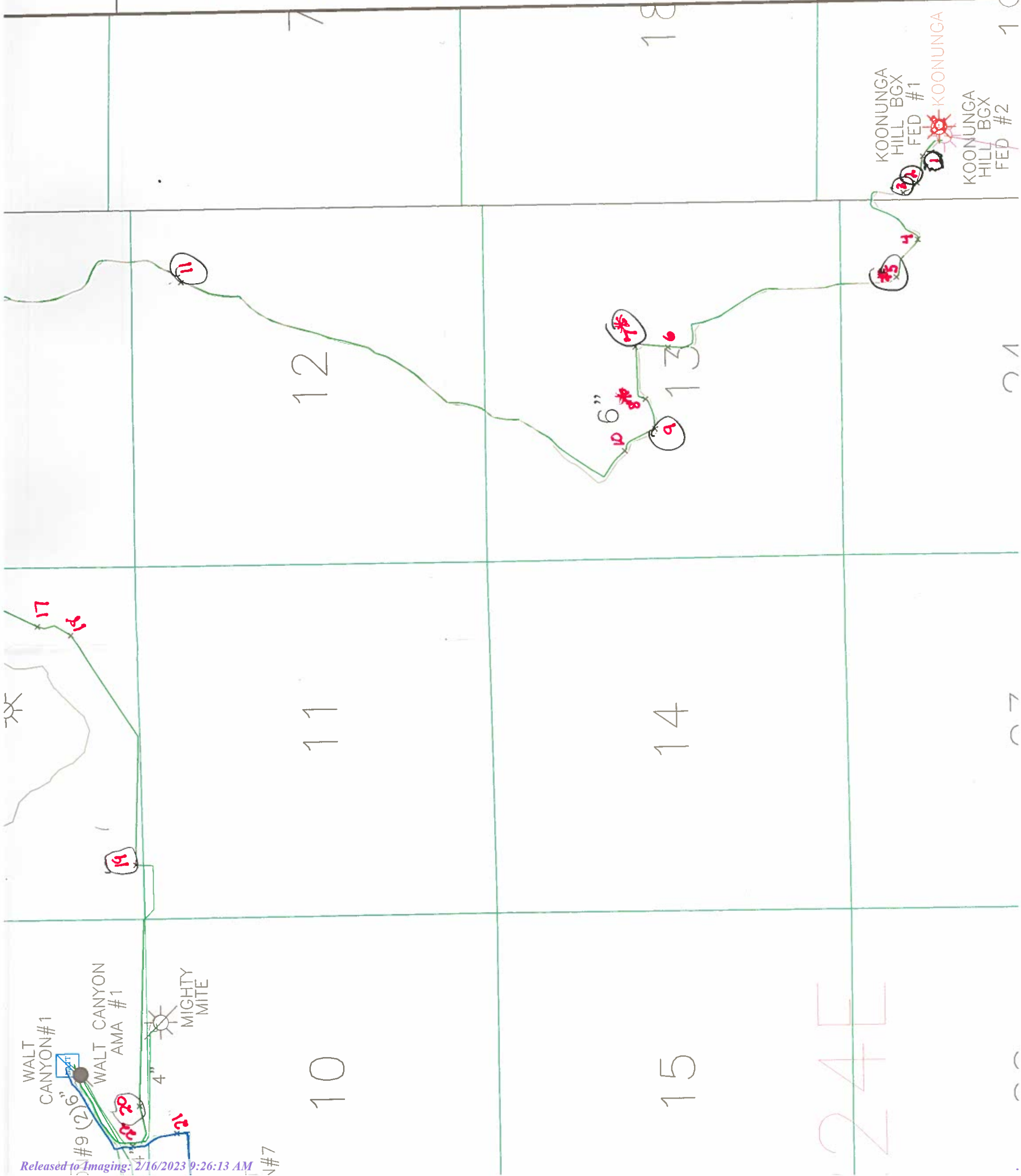
DRAWN BY: JAH

DATE DRAWN: 01-11-11

COUNTY: CHAVES, LEA

STATE: NEW MEXICO

SHEET NUMBER: 1 OF 1



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

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 EOG Resources, Inc.	Contact James Kennedy
Address 5509 Champions Drive, Midland, TX 79706	Telephone No. (432) 258-4346
Facility Name Koonunga Hills BGX Federal #1 Pipeline	Facility Type pipeline
Surface Owner: Federal	Mineral Owner: Federal
API No.	

LOCATION OF RELEASE

Unit Letter E	Section 19	Township 22S	Range 25E	Feet from the 1838	North/South Line North	Feet from the 1072	East/West Line West	County Eddy
------------------	---------------	-----------------	--------------	-----------------------	---------------------------	-----------------------	------------------------	----------------

Latitude N 32.41249° Longitude W 104.47927°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 75 bbls	Volume Recovered 0 bbls
Source of Release: Cold weather Caused 6" zaplock waterline to freeze	Date and Hour of Occurrence 2/10/2011	Date and Hour of Discovery 2/10/2011
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher	
By Whom? Jerry Fanning	Date and Hour 2/11/2011	
Was a Watercourse Reached? ☐ Yes ☒ 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 line from the Koonuga Hills BGX Fed #1 developed a leak due to the zaplock line freezing and separating in multiple places. The area was sampled for chlorides, TPH, and BTEX. All the analysis was non-detect.		
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: 	OIL CONSERVATION DIVISION	
Printed Name: Clair Gonzales	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Clair.Gonzales@TetraTech.com	Conditions of Approval:	Attached ☐
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 Fed. #1
Eddy County, New Mexico

21 South			24 East		
6	5	4	3	2 260	1
7	8	9	10 160 153	11	12
18	17	16	15	14	13
19	20 90	21	22 80	23 50 54	24 28 119
30	29	28 83	27	26 150 38	25
31	32	33	34	35	36

21 South			25 East		
6 264	5 348 95	4 97	3 65	2	1
7	8	9	10	11 25 67	12
18 60 220	17	16	15	14	13
19	20	21	22 260	23	24
30	29	28	27	26 90	25
31	32	33 17	34	35	36

21 South			26 East		
6	5 65	4	3 140	2 120	1 89
7	8 170 152	9 150	10 115	11	12
18 150 240	17 174 178 35	16 139 65	15 93 65	14	13 76 170
19 254	20 210	21 70	22 55	23 36 34	24 50 43
30 115	29 220	28 75 190	27	26 40	25 41 40
31 200	32 164	33 45 120	34	35 90	36 23 26

22 South			24 East		
6	5	4 79	3	2	1
7 49	8	9 136	10	11	12 400
18	17	16	15 100 36	14	13
19 218	20	21 400	22	23	24 213 170
30	29	28	27 22	26 500	25
31 240	32 245	33	34	35	36 22

22 South			25 East		
6	5	4	3	2	1 20 21.54
7	8	9 151	10	11 385	12
18	17	16	15 150	14	13 120
19 60 56	20	21	22	23	24
30	29 60 49	28 52	27 98	26	25
31	32	33	34	35	36

22 South			26 East		
6	5	4 68	3 140 135	2 105	1 32 41
7	8	9 73	10 95	11 60 60	12 32 45
18	17	16	15	14 68 30	13 45 60
19	20 180	21	22	23 78	24 85 108
30	29	28 140	27 96	26 71	25 96
31 105	32	33	34	35 150	36 115

19 South			26 East		
6	5	4 70	3	2	1 70
7	8	9	10 50	11	12 24
18 69	17	16	15	14 67	13
19	20 52	21	22	23 80	24
30 105	29	28	27 49	26	25
31 95	32 95	33	34	35	36

19 South			27 East		
6	5 20	4	3	2	1
7	8 50	9	10	11	12
18	17	16 18	15	14 82.4 107.7	13 60.7
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

19 South			28 East		
6	5	4	3	2	1
7	8	9 246 265	10	11	12
18 91	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36 75

- 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
- 123** Tetra Tech installed temporary wells and field water level
- 143** NMOCD Groundwater map well location

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	Code	POD Sub-basin	County	Q Q Q						X	Y	DepthWell	DepthWater	Water Column	
				64	16	4	Sec	Tws	Rng						
C 01403		C	ED	3	2	1	24	22S	24E	551238	3582798*	☐	238	213	25
C 01879		C	ED	3	2	3	26	22S	24E	549635	3580374*	☐	770	500	270
C 02351		CUB	ED	3	2	2	15	22S	24E	548817	3584393*	☐	120	100	20
C 02352		CUB	ED	2	1	3	21	22S	24E	546212	3582164*	☐	432	400	32
C 02353		CUB	ED	2	1	4	27	22S	24E	548630	3580568*	☐	250	22	228
C 02354		CUB	ED	2	3	4	27	22S	24E	548631	3580165*	☐	120	22	98
C 02355		CUB	ED	1	1	4	32	22S	24E	545220	3578941*	☐	280	245	35
C 02356		CUB	ED	4	1	3	36	22S	24E	551046	3578772*	☐	42	22	20
C 02357		CUB	ED	4	3	3	19	22S	24E	543063	3581542*	☐	278	218	60
C 02358		CUB	ED	2	1	3	21	22S	24E	546212	3582164*	☐	432	400	32
C 02359		CUB	ED	2	4	1	31	22S	24E	543411	3579333*	☐	270	240	30
C 02360		CUB	ED	1	1	4	32	22S	24E	545220	3578941*	☐	280	245	35
C 02384		CUB	ED	3	2	2	15	22S	24E	548817	3584393*	☐	120	100	20
C 02406		C	ED			3	08	22S	24E	544703	3585071*	☐	155		
C 02428		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.

9/24/18 9:18 AM

WATER COLUMN/ AVERAGE DEPTH
TO WATER

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
C 00959		C	ED	1	1	1	27	22S	25E	557349	3581495*	☐		
C 00960		C	ED	3	1	2	28	22S	25E	556534	3581303*	☐	69	52 17
C 00961		C	ED	4	1	2	19	22S	25E	553461	3582890*	☐	80	60 20
C 00988		C	ED				4 01	22S	25E	561503	3586854*	☐	55	20 35
C 01288		C	ED				1 4 20	22S	25E	554996	3582193*	☐	800	
C 01492		C	ED				1 2 4 30	22S	25E	553689	3580659*	☐		
C 01738		C	ED				4 2 3 16	22S	25E	556273	3583728*	☐	204	
C 01758		C	ED				4 2 3 16	22S	25E	556273	3583728*	☐		
C 01856		C	ED				4 09	22S	25E	556774	3585236*	☐	460	
C 02362		CUB	ED	1	3	3	29	22S	25E	554108	3580247*	☐	83	60 23
C 02874		C	ED	4	3	2	11	22S	25E	559796	3585738*	☐	740	385 355
C 03552 POD1		C	ED	4	4	2	15	22S	25E	558548	3584192	☐	250	150 100

Average Depth to Water: **121 feet**

Minimum Depth: **20 feet**

Maximum Depth: **3 5 feet**

Record Count: 12

PLSS Search:

Township: 22S **Range:** 25E

*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.

9/24/18 9:44 AM

WATER COLUMN/ AVERAGE DEPTH
TO WATER



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National Water Information System: Web Interface

USGS Water Resources

Data Category:
Groundwater

Geographic Area:
New Mexico

GO

- Click to hide News Bulletins
- [Please see news on new formats](#)
 - [Full News](#) 

Groundwater levels for New Mexico

- Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 322259104255002

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 322259104255002 22S.25E.19.21411 A

Eddy County, New Mexico
Latitude 32°22'59", Longitude 104°25'50" NAD27
Land-surface elevation 3,738 feet above NAVD88
The depth of the well is 81 feet below land surface.
This well is completed in the Yates Formation, Guadalupe Group (313YATS) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	Water-level accuracy	Status	Method of measurement	Measuring agency	Source of measurement	Water-level approval status
1978-01-04		D	56.62			2		U		U	A
1983-01-26		D	55.08			2		U		U	A
1987-10-09		D	54.30			2		U		U	A
1992-12-11		D	52.53			2		S		U	A
1998-01-29		D	56.49			2		S		U	A

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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National Water Information System: Web Interface

USGS Water Resources

Data Category:
Groundwater

Geographic Area:
New Mexico

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Groundwater levels for New Mexico

- Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 322303104265901

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 3223031042 5901 22S.24E.24.211113

Eddy County, New Mexico
Latitude 32°23'03", Longitude 104°26'59" NAD27
Land-surface elevation 3,909 feet above NAVD88
This well is completed in the Yates Formation, Guadalupe Group (313YATS) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	Water-level accuracy	Status	Method of measurement	Measuring agency	Source of measurement	Water-level approval status
1948-01-15		D	137.10			2		U		U	A
1978-01-04		D	248.62			2	R	U		U	A
1987-10-09		D	139.55			2		U		U	A
1993-01-14		D	138.31			2		S		U	A
1998-02-05		D	170.46			2		S		U	A

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Status	R	Site had been pumped recently.
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Appendix C



Certificate of Analysis Summary 598554

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Koonunga Hills Water Line



Project Id: 212C-MD-01238-400
Contact: Clair Gonzales
Project Location: Eddy, CO. NM

Date Received in Lab: Tue Sep-11-18 08:38 am
Report Date: 19-SEP-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	598554-001	598554-002	598554-003	598554-004	598554-005	598554-006
	<i>Field Id:</i>	AH #1 (0-1')	AH #2 (0-6")	AH #3 (0-6")	AH #4 (0-6")	AH #5 (0-6")	AH #6 (0-6")
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-11-18 15:00	Sep-12-18 08:15	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00
	<i>Analyzed:</i>	Sep-12-18 00:03	Sep-12-18 10:14	Sep-12-18 00:24	Sep-12-18 00:44	Sep-12-18 01:05	Sep-12-18 01:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00401 0.00401	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Sep-14-18 10:00	Sep-14-18 10:00	Sep-14-18 10:00	Sep-14-18 10:00	Sep-14-18 10:00	Sep-14-18 10:00
	<i>Analyzed:</i>	Sep-14-18 14:45	Sep-14-18 14:52	Sep-14-18 15:22	Sep-14-18 15:30	Sep-14-18 15:52	Sep-14-18 15:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.02 5.02	16.6 4.99	<4.95 4.95	<4.95 4.95	<5.00 5.00	<5.01 5.01
TPH By SW8015 Mod	<i>Extracted:</i>	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00
	<i>Analyzed:</i>	Sep-11-18 18:15	Sep-11-18 19:14	Sep-11-18 19:34	Sep-11-18 19:54	Sep-11-18 20:14	Sep-11-18 20:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	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	<15.0 15.0	<14.9 14.9
Diesel Range Organics (DRO)		<15.0 15.0	61.4 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	61.4 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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



Certificate of Analysis Summary 598554

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Koonunga Hills Water Line



Project Id: 212C-MD-01238-400
Contact: Clair Gonzales
Project Location: Eddy, CO. NM

Date Received in Lab: Tue Sep-11-18 08:38 am
Report Date: 19-SEP-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	598554-007	598554-008	598554-009	598554-010	598554-011	598554-012
	<i>Field Id:</i>	AH #7 (0-6")	AH #8 (0-6")	AH #9 (0-6")	AH #10 (0-6")	AH #11 (0-1')	AH #12 (0-6")
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00
	<i>Analyzed:</i>	Sep-12-18 01:45	Sep-12-18 02:06	Sep-12-18 02:26	Sep-12-18 02:46	Sep-12-18 03:07	Sep-12-18 04:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00404 0.00404	<0.00402 0.00402	<0.00401 0.00401	<0.00398 0.00398	<0.00399 0.00399	<0.00400 0.00400
o-Xylene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Sep-14-18 10:00	Sep-14-18 10:00	Sep-14-18 10:00	Sep-14-18 10:00	Sep-14-18 10:00	Sep-14-18 10:00
	<i>Analyzed:</i>	Sep-14-18 15:59	Sep-14-18 16:07	Sep-14-18 16:14	Sep-14-18 16:22	Sep-14-18 16:29	Sep-14-18 16:36
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<4.95 4.95	<4.96 4.96	<5.05 5.05	<4.95 4.95	<5.00 5.00	<4.99 4.99
TPH By SW8015 Mod	<i>Extracted:</i>	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00
	<i>Analyzed:</i>	Sep-11-18 20:53	Sep-11-18 21:13	Sep-11-18 21:33	Sep-11-18 21:52	Sep-11-18 22:52	Sep-11-18 23:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 598554

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Koonunga Hills Water Line



Project Id: 212C-MD-01238-400
Contact: Clair Gonzales
Project Location: Eddy, CO. NM

Date Received in Lab: Tue Sep-11-18 08:38 am
Report Date: 19-SEP-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	598554-013	598554-014	598554-015	598554-016	598554-017	598554-018
	<i>Field Id:</i>	AH #13 (0-6")	AH #14 (0-6")	AH #15 (0-6")	AH #16 (0-6")	AH #17 (0-6")	AH #18 (0-6")
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00
	<i>Analyzed:</i>	Sep-12-18 04:46	Sep-12-18 05:07	Sep-12-18 05:27	Sep-12-18 05:48	Sep-12-18 06:08	Sep-12-18 06:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<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	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402	<0.00401 0.00401	<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<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	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	Sep-14-18 15:45	Sep-14-18 15:45	Sep-14-18 15:45	Sep-14-18 15:45	Sep-14-18 15:45	Sep-14-18 15:45
	<i>Analyzed:</i>	Sep-14-18 19:50	Sep-14-18 20:12	Sep-14-18 20:20	Sep-14-18 20:27	Sep-14-18 20:34	Sep-14-18 20:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<4.99 4.99	<5.00 5.00	<4.95 4.95	<4.95 4.95	<4.96 4.96	<5.00 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 16:00
	<i>Analyzed:</i>	Sep-11-18 23:31	Sep-11-18 23:51	Sep-12-18 00:11	Sep-12-18 00:31	Sep-12-18 00:51	Sep-12-18 01:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	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	<15.0 15.0	<14.9 14.9
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 598554

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Koonunga Hills Water Line



Project Id: 212C-MD-01238-400
Contact: Clair Gonzales
Project Location: Eddy, CO. NM

Date Received in Lab: Tue Sep-11-18 08:38 am
Report Date: 19-SEP-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	598554-019	598554-020	598554-021	598554-022		
	<i>Field Id:</i>	AH #19 (0-6")	AH #20 (0-6")	AH #21 (0-1')	AH #22 (0-6")		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00	Sep-10-18 00:00		
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-11-18 15:00	Sep-11-18 15:00	Sep-11-18 15:00	Sep-12-18 08:15		
	<i>Analyzed:</i>	Sep-12-18 06:49	Sep-12-18 07:29	Sep-12-18 07:09	Sep-12-18 10:35		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402	<0.00399 0.00399	<0.00401 0.00401		
o-Xylene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Chloride by EPA 300	<i>Extracted:</i>	Sep-14-18 15:45	Sep-14-18 15:45	Sep-14-18 15:45	Sep-14-18 15:45		
	<i>Analyzed:</i>	Sep-14-18 21:04	Sep-14-18 21:12	Sep-14-18 21:19	Sep-14-18 21:34		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		<5.02 5.02	<4.99 4.99	<5.02 5.02	<4.95 4.95		
TPH By SW8015 Mod	<i>Extracted:</i>	Sep-11-18 16:00	Sep-11-18 16:00	Sep-11-18 12:00	Sep-11-18 12:00		
	<i>Analyzed:</i>	Sep-12-18 01:30	Sep-12-18 01:50	Sep-11-18 16:49	Sep-12-18 07:02		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9		
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	57.8 14.9		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	18.3 14.9		
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	76.1 14.9		

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Kelsey Brooks
Project Manager

Analytical Report 598554

for Tetra Tech- Midland

Project Manager: Clair Gonzales

EOG-Koonunga Hills Water Line

212C-MD-01238-400

19-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)



19-SEP-18

Project Manager: **Clair Gonzales**

Tetra Tech- Midland

4000 N. Big Spring Suite 401

Midland, TX 79705

Reference: XENCO Report No(s): **598554**

EOG-Koonunga Hills Water 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) 598554. 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. 598554 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,

A handwritten signature in black ink, appearing to read 'Kelsey Brooks', written over a horizontal line.

Kelsey Brooks

Project Manager

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Sample Cross Reference 598554

Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH #1 (0-1')	S	09-10-18 00:00		598554-001
AH #2 (0-6")	S	09-10-18 00:00		598554-002
AH #3 (0-6")	S	09-10-18 00:00		598554-003
AH #4 (0-6")	S	09-10-18 00:00		598554-004
AH #5 (0-6")	S	09-10-18 00:00		598554-005
AH #6 (0-6")	S	09-10-18 00:00		598554-006
AH #7 (0-6")	S	09-10-18 00:00		598554-007
AH #8 (0-6")	S	09-10-18 00:00		598554-008
AH #9 (0-6")	S	09-10-18 00:00		598554-009
AH #10 (0-6")	S	09-10-18 00:00		598554-010
AH #11 (0-1')	S	09-10-18 00:00		598554-011
AH #12 (0-6")	S	09-10-18 00:00		598554-012
AH #13 (0-6")	S	09-10-18 00:00		598554-013
AH #14 (0-6")	S	09-10-18 00:00		598554-014
AH #15 (0-6")	S	09-10-18 00:00		598554-015
AH #16 (0-6")	S	09-10-18 00:00		598554-016
AH #17 (0-6")	S	09-10-18 00:00		598554-017
AH #18 (0-6")	S	09-10-18 00:00		598554-018
AH #19 (0-6")	S	09-10-18 00:00		598554-019
AH #20 (0-6")	S	09-10-18 00:00		598554-020
AH #21 (0-1')	S	09-10-18 00:00		598554-021
AH #22 (0-6")	S	09-10-18 00:00		598554-022

**CASE NARRATIVE****Client Name: Tetra Tech- Midland****Project Name: EOG-Koonunga Hills Water Line**

Project ID: 212C-MD-01238-400
Work Order Number(s): 598554

Report Date: 19-SEP-18
Date Received: 09/11/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3062941 BTEX by EPA 8021B

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

Lab Sample ID 598554-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 598554-001, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021.

The Laboratory Control Sample for m,p-Xylenes, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3063028 BTEX by EPA 8021B

Ethylbenzene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 598554-002, -022

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

Lab Sample ID 598554-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 598554-002, -022.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analytical Results 598554

Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #1 (0-1')**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-001

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	09.14.18 14.45	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 18.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 18.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 18.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 18.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.11.18 18.15	
o-Terphenyl	84-15-1	90	%	70-135	09.11.18 18.15	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #1 (0-1')**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-001

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.18 00.03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.18 00.03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.18 00.03	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.18 00.03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.18 00.03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.18 00.03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.18 00.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	70-130	09.12.18 00.03		
1,4-Difluorobenzene	540-36-3	93	%	70-130	09.12.18 00.03		



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #2 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-002

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.6	4.99	mg/kg	09.14.18 14.52		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 19.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	61.4	15.0	mg/kg	09.11.18 19.14		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 19.14	U	1
Total TPH	PHC635	61.4	15.0	mg/kg	09.11.18 19.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.11.18 19.14	
o-Terphenyl	84-15-1	88	%	70-135	09.11.18 19.14	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #2 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-002

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.12.18 08.15

Basis: Wet Weight

Seq Number: 3063028

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.18 10.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.18 10.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.18 10.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.18 10.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.18 10.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.18 10.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.18 10.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.12.18 10.14		
4-Bromofluorobenzene	460-00-4	100	%	70-130	09.12.18 10.14		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #3 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-003

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.14.18 15.22	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 19.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 19.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 19.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 19.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	09.11.18 19.34	
o-Terphenyl	84-15-1	93	%	70-135	09.11.18 19.34	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #3 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-003

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.18 00.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.18 00.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.18 00.24	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.12.18 00.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.18 00.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.18 00.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.18 00.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.12.18 00.24		
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.12.18 00.24		



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #4 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-004

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.14.18 15.30	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 19.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 19.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 19.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 19.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.11.18 19.54	
o-Terphenyl	84-15-1	85	%	70-135	09.11.18 19.54	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #4 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-004

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.12.18 00.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.12.18 00.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.12.18 00.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.12.18 00.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.12.18 00.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.12.18 00.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.12.18 00.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	09.12.18 00.44		
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.12.18 00.44		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #5 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-005

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.18 15.52	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 20.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 20.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 20.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 20.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	09.11.18 20.14	
o-Terphenyl	84-15-1	92	%	70-135	09.11.18 20.14	



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #5 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-005

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.18 01.05	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.18 01.05	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.18 01.05	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.18 01.05	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.18 01.05	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.18 01.05	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.18 01.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.12.18 01.05		
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.12.18 01.05		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #6 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-006

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.01	5.01	mg/kg	09.14.18 15.00	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.11.18 20.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.11.18 20.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.11.18 20.33	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.11.18 20.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.11.18 20.33	
o-Terphenyl	84-15-1	92	%	70-135	09.11.18 20.33	



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #6 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-006

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.18 01.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.18 01.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.18 01.25	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.12.18 01.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.18 01.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.18 01.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.18 01.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	70-130	09.12.18 01.25		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.12.18 01.25		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #7 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-007

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.14.18 15.59	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.11.18 20.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.11.18 20.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.11.18 20.53	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.11.18 20.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	09.11.18 20.53	
o-Terphenyl	84-15-1	91	%	70-135	09.11.18 20.53	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #7 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-007

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.12.18 01.45	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.12.18 01.45	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.12.18 01.45	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.12.18 01.45	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.12.18 01.45	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.12.18 01.45	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.12.18 01.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	09.12.18 01.45		
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.12.18 01.45		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #8 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-008

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	09.14.18 16.07	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 21.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 21.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 21.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 21.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.11.18 21.13	
o-Terphenyl	84-15-1	91	%	70-135	09.11.18 21.13	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #8 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-008

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.12.18 02.06	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.12.18 02.06	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.12.18 02.06	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.12.18 02.06	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.12.18 02.06	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.12.18 02.06	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.12.18 02.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.12.18 02.06		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.12.18 02.06		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #9 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-009

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.05	5.05	mg/kg	09.14.18 16.14	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.11.18 21.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.11.18 21.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.11.18 21.33	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.11.18 21.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	09.11.18 21.33	
o-Terphenyl	84-15-1	92	%	70-135	09.11.18 21.33	



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #9 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-009

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.18 02.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.18 02.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.18 02.26	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.12.18 02.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.18 02.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.18 02.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.18 02.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.12.18 02.26		
4-Bromofluorobenzene	460-00-4	98	%	70-130	09.12.18 02.26		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #10 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-010

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.14.18 16.22	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 21.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 21.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 21.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 21.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	94	%	70-135	09.11.18 21.52		
o-Terphenyl	84-15-1	91	%	70-135	09.11.18 21.52		



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #10 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-010

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.18 02.46	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.18 02.46	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.18 02.46	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.18 02.46	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.18 02.46	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.18 02.46	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.18 02.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	09.12.18 02.46		
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.12.18 02.46		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #11 (0-1')**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-011

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.18 16.29	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 22.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 22.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 22.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 22.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.11.18 22.52	
o-Terphenyl	84-15-1	91	%	70-135	09.11.18 22.52	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #11 (0-1')**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-011

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.18 03.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.18 03.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.18 03.07	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.12.18 03.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.18 03.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.18 03.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.18 03.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	70-130	09.12.18 03.07		
1,4-Difluorobenzene	540-36-3	86	%	70-130	09.12.18 03.07		



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #12 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-012

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 10.00

Basis: Wet Weight

Seq Number: 3063232

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	09.14.18 16.36	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 23.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 23.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 23.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 23.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	09.11.18 23.11	
o-Terphenyl	84-15-1	92	%	70-135	09.11.18 23.11	



Certificate of Analytical Results 598554

Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #12 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-012

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.18 04.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.18 04.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.18 04.26	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.12.18 04.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.18 04.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.18 04.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.18 04.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	09.12.18 04.26		
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.12.18 04.26		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #13 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-013

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	09.14.18 19.50	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 23.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 23.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 23.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 23.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.11.18 23.31	
o-Terphenyl	84-15-1	92	%	70-135	09.11.18 23.31	



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #13 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-013

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.18 04.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.18 04.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.18 04.46	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.12.18 04.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.18 04.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.18 04.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.18 04.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	86	%	70-130	09.12.18 04.46		
1,4-Difluorobenzene	540-36-3	93	%	70-130	09.12.18 04.46		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #14 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-014

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.18 20.12	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 23.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 23.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 23.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 23.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.11.18 23.51	
o-Terphenyl	84-15-1	90	%	70-135	09.11.18 23.51	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #14 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-014

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.12.18 05.07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.12.18 05.07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.12.18 05.07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.12.18 05.07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.12.18 05.07	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.12.18 05.07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.12.18 05.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	09.12.18 05.07		
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.12.18 05.07		



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Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #15 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-015

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.14.18 20.20	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.18 00.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.18 00.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.12.18 00.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.18 00.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	09.12.18 00.11	
o-Terphenyl	84-15-1	87	%	70-135	09.12.18 00.11	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #15 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-015

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.18 05.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.18 05.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.18 05.27	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.12.18 05.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.18 05.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.18 05.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.18 05.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.12.18 05.27		
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.12.18 05.27		



Certificate of Analytical Results 598554

Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #16 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-016

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.14.18 20.27	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.18 00.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.18 00.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.12.18 00.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.18 00.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	09.12.18 00.31	
o-Terphenyl	84-15-1	89	%	70-135	09.12.18 00.31	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #16 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-016

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.12.18 05.48	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.12.18 05.48	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.12.18 05.48	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.12.18 05.48	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.12.18 05.48	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.12.18 05.48	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.12.18 05.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.12.18 05.48		
4-Bromofluorobenzene	460-00-4	99	%	70-130	09.12.18 05.48		



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #17 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-017

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	09.14.18 20.34	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.18 00.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.18 00.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.12.18 00.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.18 00.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	09.12.18 00.51	
o-Terphenyl	84-15-1	95	%	70-135	09.12.18 00.51	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #17 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-017

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.18 06.08	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.18 06.08	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.18 06.08	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.18 06.08	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.18 06.08	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.18 06.08	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.18 06.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	09.12.18 06.08		
4-Bromofluorobenzene	460-00-4	85	%	70-130	09.12.18 06.08		



Certificate of Analytical Results 598554

Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #18 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-018

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.18 20.57	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.12.18 01.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.12.18 01.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.12.18 01.11	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.12.18 01.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	93	%	70-135	09.12.18 01.11		
o-Terphenyl	84-15-1	92	%	70-135	09.12.18 01.11		



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #18 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-018

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.18 06.28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.18 06.28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.18 06.28	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.18 06.28	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.18 06.28	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.18 06.28	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.18 06.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.12.18 06.28		
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.12.18 06.28		



Certificate of Analytical Results 598554

Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #19 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-019

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	09.14.18 21.04	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.18 01.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.18 01.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.12.18 01.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.18 01.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.12.18 01.30	
o-Terphenyl	84-15-1	88	%	70-135	09.12.18 01.30	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #19 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-019

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.12.18 06.49	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.12.18 06.49	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.12.18 06.49	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.12.18 06.49	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.12.18 06.49	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.12.18 06.49	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.12.18 06.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.12.18 06.49		
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.12.18 06.49		



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #20 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-020

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	09.14.18 21.12	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 16.00

Basis: Wet Weight

Seq Number: 3062892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.12.18 01.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.12.18 01.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.12.18 01.50	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.12.18 01.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.12.18 01.50	
o-Terphenyl	84-15-1	90	%	70-135	09.12.18 01.50	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #20 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-020

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.12.18 07.29	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.12.18 07.29	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.12.18 07.29	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.12.18 07.29	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.12.18 07.29	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.12.18 07.29	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.12.18 07.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	09.12.18 07.29		
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.12.18 07.29		



Certificate of Analytical Results 598554

Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #21 (0-1')**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-021

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	09.14.18 21.19	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 12.00

Basis: Wet Weight

Seq Number: 3062894

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 16.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 16.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 16.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 16.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.11.18 16.49	
o-Terphenyl	84-15-1	100	%	70-135	09.11.18 16.49	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #21 (0-1')**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-021

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.18 15.00

Basis: Wet Weight

Seq Number: 3062941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.18 07.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.18 07.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.18 07.09	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.12.18 07.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.18 07.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.18 07.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.18 07.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.12.18 07.09		
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.12.18 07.09		



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #22 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-022

Date Collected: 09.10.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 09.14.18 15.45

Basis: Wet Weight

Seq Number: 3063380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.14.18 21.34	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.18 12.00

Basis: Wet Weight

Seq Number: 3062894

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.12.18 07.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	57.8	14.9	mg/kg	09.12.18 07.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	18.3	14.9	mg/kg	09.12.18 07.02		1
Total TPH	PHC635	76.1	14.9	mg/kg	09.12.18 07.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.12.18 07.02	
o-Terphenyl	84-15-1	100	%	70-135	09.12.18 07.02	



Certificate of Analytical Results 598554



Tetra Tech- Midland, Midland, TX

EOG-Koonunga Hills Water Line

Sample Id: **AH #22 (0-6")**

Matrix: Soil

Date Received: 09.11.18 08.38

Lab Sample Id: 598554-022

Date Collected: 09.10.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.12.18 08.15

Basis: Wet Weight

Seq Number: 3063028

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.18 10.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.18 10.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.18 10.35	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.12.18 10.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.18 10.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.18 10.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.18 10.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.12.18 10.35		
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.12.18 10.35		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Tetra Tech- Midland
EOG-Koonunga Hills Water Line

Analytical Method: Chloride by EPA 300

Seq Number: 3063232

MB Sample Id: 7662273-1-BLK

Matrix: Solid

LCS Sample Id: 7662273-1-BKS

Prep Method: E300P

Date Prep: 09.14.18

LCSD Sample Id: 7662273-1-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	267	107	267	107	90-110	0	20	mg/kg	09.14.18 13:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3063380

MB Sample Id: 7662354-1-BLK

Matrix: Solid

LCS Sample Id: 7662354-1-BKS

Prep Method: E300P

Date Prep: 09.14.18

LCSD Sample Id: 7662354-1-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	262	105	261	104	90-110	0	20	mg/kg	09.14.18 19:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3063232

Parent Sample Id: 598554-006

Matrix: Soil

MS Sample Id: 598554-006 S

Prep Method: E300P

Date Prep: 09.14.18

MSD Sample Id: 598554-006 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	262	104	261	104	90-110	0	20	mg/kg	09.14.18 15:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3063232

Parent Sample Id: 598680-007

Matrix: Soil

MS Sample Id: 598680-007 S

Prep Method: E300P

Date Prep: 09.14.18

MSD Sample Id: 598680-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	149	248	410	105	409	105	90-110	0	20	mg/kg	09.14.18 13:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3063380

Parent Sample Id: 598554-013

Matrix: Soil

MS Sample Id: 598554-013 S

Prep Method: E300P

Date Prep: 09.14.18

MSD Sample Id: 598554-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.857	250	249	100	248	99	90-110	0	20	mg/kg	09.14.18 19:57	

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 Water Line

Analytical Method: Chloride by EPA 300

Seq Number: 3063380

Parent Sample Id: 598554-022

Matrix: Soil

MS Sample Id: 598554-022 S

Prep Method: E300P

Date Prep: 09.14.18

MSD Sample Id: 598554-022 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	243	98	244	98	90-110	0	20	mg/kg	09.14.18 21:41	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3062894

MB Sample Id: 7662103-1-BLK

Matrix: Solid

LCS Sample Id: 7662103-1-BKS

Prep Method: TX1005P

Date Prep: 09.11.18

LCSD Sample Id: 7662103-1-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	1040	104	1050	105	70-135	1	20	mg/kg	09.11.18 13:05	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	1140	114	70-135	6	20	mg/kg	09.11.18 13:05	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		123		126		70-135	%	09.11.18 13:05
o-Terphenyl	97		114		114		70-135	%	09.11.18 13:05

Analytical Method: TPH By SW8015 Mod

Seq Number: 3062892

MB Sample Id: 7662101-1-BLK

Matrix: Solid

LCS Sample Id: 7662101-1-BKS

Prep Method: TX1005P

Date Prep: 09.11.18

LCSD Sample Id: 7662101-1-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	1020	102	945	95	70-135	8	20	mg/kg	09.11.18 17:36	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	985	99	70-135	8	20	mg/kg	09.11.18 17:36	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		126		116		70-135	%	09.11.18 17:36
o-Terphenyl	89		116		106		70-135	%	09.11.18 17:36

Analytical Method: TPH By SW8015 Mod

Seq Number: 3062894

Parent Sample Id: 598400-001

Matrix: Soil

MS Sample Id: 598400-001 S

Prep Method: TX1005P

Date Prep: 09.11.18

MSD Sample Id: 598400-001 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)	9.10	1040	993	95	1010	96	70-135	2	20	mg/kg	09.11.18 14:01	
Diesel Range Organics (DRO)	8.72	1040	1060	101	1080	103	70-135	2	20	mg/kg	09.11.18 14:01	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		113		70-135	%	09.11.18 14:01
o-Terphenyl	96		96		70-135	%	09.11.18 14:01

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

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

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 Water Line

Analytical Method: TPH By SW8015 Mod

Seq Number: 3062892

Parent Sample Id: 598554-001

Matrix: Soil

MS Sample Id: 598554-001 S

Prep Method: TX1005P

Date Prep: 09.11.18

MSD Sample Id: 598554-001 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)	<7.99	999	855	86	874	88	70-135	2	20	mg/kg	09.11.18 18:35	
Diesel Range Organics (DRO)	<8.12	999	889	89	913	92	70-135	3	20	mg/kg	09.11.18 18:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		125		70-135	%	09.11.18 18:35
o-Terphenyl	91		93		70-135	%	09.11.18 18:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3062941

MB Sample Id: 7662125-1-BLK

Matrix: Solid

LCS Sample Id: 7662125-1-BKS

Prep Method: SW5030B

Date Prep: 09.11.18

LCSD Sample Id: 7662125-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0961	95	0.100	99	70-130	4	35	mg/kg	09.11.18 22:03	
Toluene	<0.00201	0.101	0.0977	97	0.100	99	70-130	2	35	mg/kg	09.11.18 22:03	
Ethylbenzene	<0.00201	0.101	0.101	100	0.102	101	70-130	1	35	mg/kg	09.11.18 22:03	
m,p-Xylenes	<0.00402	0.201	0.200	100	0.199	99	70-130	1	35	mg/kg	09.11.18 22:03	
o-Xylene	<0.00201	0.101	0.100	99	0.0991	98	70-130	1	35	mg/kg	09.11.18 22:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		89		91		70-130	%	09.11.18 22:03
4-Bromofluorobenzene	98		95		86		70-130	%	09.11.18 22:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063028

MB Sample Id: 7662188-1-BLK

Matrix: Solid

LCS Sample Id: 7662188-1-BKS

Prep Method: SW5030B

Date Prep: 09.12.18

LCSD Sample Id: 7662188-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.102	102	0.0953	96	70-130	7	35	mg/kg	09.12.18 08:08	
Toluene	<0.00199	0.0996	0.0924	93	0.0875	88	70-130	5	35	mg/kg	09.12.18 08:08	
Ethylbenzene	<0.00199	0.0996	0.101	101	0.0963	97	70-130	5	35	mg/kg	09.12.18 08:08	
m,p-Xylenes	<0.00398	0.199	0.196	98	0.189	95	70-130	4	35	mg/kg	09.12.18 08:08	
o-Xylene	<0.00199	0.0996	0.0981	98	0.0941	95	70-130	4	35	mg/kg	09.12.18 08:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		89		93		70-130	%	09.12.18 08:08
4-Bromofluorobenzene	99		100		101		70-130	%	09.12.18 08:08

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 Water Line

Analytical Method: BTEX by EPA 8021B

Seq Number: 3062941

Parent Sample Id: 598554-001

Matrix: Soil

MS Sample Id: 598554-001 S

Prep Method: SW5030B

Date Prep: 09.11.18

MSD Sample Id: 598554-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0803	81	0.0715	72	70-130	12	35	mg/kg	09.11.18 22:43	
Toluene	<0.00199	0.0996	0.0777	78	0.0732	73	70-130	6	35	mg/kg	09.11.18 22:43	
Ethylbenzene	<0.00199	0.0996	0.0717	72	0.0697	70	70-130	3	35	mg/kg	09.11.18 22:43	
m,p-Xylenes	<0.00398	0.199	0.138	69	0.136	68	70-130	1	35	mg/kg	09.11.18 22:43	X
o-Xylene	<0.00199	0.0996	0.0680	68	0.0669	67	70-130	2	35	mg/kg	09.11.18 22:43	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		86		70-130	%	09.11.18 22:43
4-Bromofluorobenzene	96		88		70-130	%	09.11.18 22:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063028

Parent Sample Id: 598554-002

Matrix: Soil

MS Sample Id: 598554-002 S

Prep Method: SW5030B

Date Prep: 09.12.18

MSD Sample Id: 598554-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0804	80	0.0655	65	70-130	20	35	mg/kg	09.12.18 08:50	X
Toluene	<0.00201	0.100	0.0678	68	0.0482	48	70-130	34	35	mg/kg	09.12.18 08:50	X
Ethylbenzene	<0.00201	0.100	0.0604	60	0.0390	39	70-130	43	35	mg/kg	09.12.18 08:50	XF
m,p-Xylenes	<0.00402	0.201	0.113	56	0.0717	35	70-130	45	35	mg/kg	09.12.18 08:50	XF
o-Xylene	<0.00201	0.100	0.0592	59	0.0376	37	70-130	45	35	mg/kg	09.12.18 08:50	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	125		121		70-130	%	09.12.18 08:50
4-Bromofluorobenzene	93		116		70-130	%	09.12.18 08:50

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, Inc.

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Fax (432) 682-3946

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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

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Page 2 of 3

Client Name:						EOG								Site Manager:		Clair Gonzales												
Project Name:						Koonunga Hills Water Line																						
Project Location: (county, state)						Eddy CO. NM										Project #:		212C-MD-01238 - 400										
Invoice to:						EOG - James Kennedy																						
Receiving Laboratory:						Xenco										Sampler Signature:		Conner Moehring										
Comments:																												
LAB # (LAB USE ONLY)		SAMPLE IDENTIFICATION				SAMPLING			MATRIX		PRESERVATIVE METHOD			# CONTAINERS		FILTERED (Y/N)												
						YEAR: 2018																						
		AH #11 (0-1')				DATE		TIME		WATER		SOIL		HCL	HNO ₃	ICE	None											
		AH #12 (0-6")				9/10/2018				X		X		X	X	X	X	1 N		X								
		AH #13 (0-6")				9/10/2018				X		X		X	X	X	X	1 N		X								
		AH #14 (0-6")				9/10/2018				X		X		X	X	X	X	1 N		X								
		AH #15 (0-6")				9/10/2018				X		X		X	X	X	X	1 N		X								
		AH #16 (0-6")				9/10/2018				X		X		X	X	X	X	1 N		X								
		AH #17 (0-6")				9/10/2018				X		X		X	X	X	X	1 N		X								
		AH #18 (0-6")				9/10/2018				X		X		X	X	X	X	1 N		X								
		AH #19 (0-6")				9/10/2018				X		X		X	X	X	X	1 N		X								
		AH #20 (0-6")				9/10/2018				X		X		X	X	X	X	1 N		X								
Relinquished by:		Date: Time:				Received by:		Date: Time:		LAB USE ONLY		REMARKS:																
Relinquished by:		Date: Time:				Received by:		Date: Time:		LAB USE ONLY		STANDARD																
Relinquished by:		Date: Time:				Received by:		Date: Time:		LAB USE ONLY		RUSH: Same Day 24 hr 48 hr 72 hr																
Relinquished by:		Date: Time:				Received by:		Date: Time:		LAB USE ONLY		Rush Charges Authorized																
Relinquished by:		Date: Time:				Received by:		Date: Time:		LAB USE ONLY		Special Report Limits or TRRP Report																

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Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 09/11/2018 08:38:00 AM

Work Order #: 598554

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 *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: 09/11/2018

Checklist reviewed by:

Kelsey Brooks

Date: 09/11/2018

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 84010

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 84010
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	2/16/2023