	SITE INFORMATION									
	Re	port Type:	Closure R	eport	1RP-47	45				
General Site Inf	ormation:			_						
Site:		Beowulf 33 S	tate Com 601H							
Company:		EOG Resource								
	ship and Range	Unit N	Sec. 33	T 23S	R 35E					
Lease Number:		API No. 30-02	5-435310000							
County:		Lea County								
GPS:			32.2551° N			103.3	3752° W			
Surface Owner		NM State Lan								
Mineral Owner: Directions:	1	NM State Land		and Live 40	Llood Mast	til Dalama:-	Basin Road, Turn Rt.,			
		and go approx. arrive on locatio		nio lease roa	ia, Go South ap	oprox. 5m ar	nd then go East .25M and			
Release Data:										
Date Released:		6/28/2017								
Type Release:		Produced Wa	ter							
Source of Conta	mination:	Water Truck								
Fluid Released:		130 bbls								
Fluids Recovere		0bbls								
Official Commu	1				-					
Name:	Jamon Hohensee				Ike Tavare					
Company:	EOG Resources				Tetra Tech					
Address:	5509 Champions I	Or			4000 N. Big	g Spring				
					Ste 401					
City:	Midland Texas, 79	706			Midland, Te	exas				
Phone number:	(432) 556-8074				(432) 687-8	3110				
Fax:										
Email:	jamon hohense									

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	275'
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	- 10 - 110
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:	0	
Accor	table Soil RRAL (m	a/ka)
Benzene		TPH
10	50	5,000



September 15, 2017

Ms. Olivia Yu Environmental Engineer Specialist Oil Conservation Division, District 1 1625 North French Drive Hobbs. New Mexico 88240

Re: Closure Report for the EOG Resources, Beowulf 33 State Com 601H, Unit N, Section 33, Township 23 South, Range 35 East, Lea County, New Mexico. 1RP-4745

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by EOG Resources to assess and remediate a spill that occurred at the Beowulf 33 State Com 601H, Unit N, Section 33, Township 23 South, Range 35 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.2551°, W 103.3752°. The site location is shown on Figures 1 and 2.

Background

On June 28, 2016, a produced water release occurred at the site due to an illegal dump located behind the facility in the adjacent pasture. Approximately one hundred and thirty (130) barrels of produced water was released and none of the fluids were recovered. The release occurred in the pasture and migrated onto a proposed pipeline right-of-way area. The spill impacted an area measuring approximately 180' x 40', 190' x 5' and 50' x 50'. The initial C-141 form is included in Appendix A. The release areas are shown on Figure 3.

Groundwater

No water wells were listed within Section 33 on the New Mexico Office of the State Engineer database. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in this area is around 275' below surface. 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, dated August 13, 1993. 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, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment

Soil Sampling

On July 10, 2017, Tetra Tech personnel were onsite to inspect and sample the spill area. A total of seven (7) sample trenches (T-1 through T-7) were installed to total depths ranging from 1.0' to 14.0' below surface using a backhoe. The samples were field screened for salinity using an ExStick II EC400 meter. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The trench locations are shown on Figure 3.

Pipeline Right-of-Way

During the site inspection, field personnel noted that the release footprint was along a marked proposed pipeline right-of-way for Lucid Energy. Lucid Energy was contacted and stated that the proposed line was scheduled to be installed the following week. Due to timing of the installation, the removal of the shallow impacted soil along the right-of-way area was performed on July 11-12, 2017. The excavation and sampling details are summarized in the Remediation Section in the report.

Sample Analysis and Results

Referring to Table 1, none of the collected samples exceeded the RRALs for TPH, benzene or total BTEX.

The chlorides detected showed a shallow impact to the subsurface soils. The areas of trenches (T-1, T-2 and T-3) showed concentrations that declined at 2.0' below surface, with chloride concentrations of 16.4 mg/kg, 6.01 mg/kg and 67.3 mg/kg, respectively. The areas of trenches (T-4, T-5 and T-6) showed a slightly deeper impact to the soils, which declined at a depth of approximately 3'-4' below surface. The area of trench (T-5) showed a chloride spike of 3,010 mg/kg at 8.0' below surface, which then declined at 10.0' to 302 mg/kg. The chloride spike appears to be sloughing of the upper soil that cross-contaminated the deeper sample. Trench (T-7) showed a shallow impact to soil declining to 42.8 mg/kg at 2.0' below surface.



Soil Remediation and Confirmation Sampling

The excavation areas and depths are highlighted (green) in Table 1 and shown on Figure 4. One excavated to the appropriate depths, Tetra Tech collected confirmation samples from the area. The confirmation samples are shown in Table 2. Approximately 775 cubic yards were removed from the area and stockpiled onsite pending disposal. The excavated areas were backfield with clean material to surface grade.

Tetra Tech supervised the initial remediation of the release area along the proposed pipeline right-of-way on July 11 and 12, 2017. These excavated areas encompassed trenches (T-1, T-2, T-3 and T-6). The areas of trenches (T-1, T-2, and T-3) were excavated to a depth of 1.5' below surface area and measured approximately 180' x 40'. The area of trench (T-6) was excavated to a depth of 3.0' and measured an area of approximately 50' x 50'. Once removed to appropriate depths, Tetra Tech collected bottom hole and sidewall samples to confirm the impacted soil was properly removed.

After the installation of the pipeline was completed, Tetra Tech returned to the site on August 28, 2017 to complete the remediation for the areas of trenches (T-4, T-5 and T-7). The areas of trenches (T-4 and T-5) were excavated to depths of 3.0' and the area of trench (T-7) was excavated to 2.0' below surface, measuring approximately 190' x 5'. For additional confirmation, the area of trench (T-5) was re-trenched at a depth of 8.0' to collect an additional sample and to confirm the chloride spike at that depth. Referring to Table 1, the chloride showed a concentration of <4.96 mg/kg, which confirmed the sample was cross-contaminated by the upper soils.

Conclusion and Recommendations

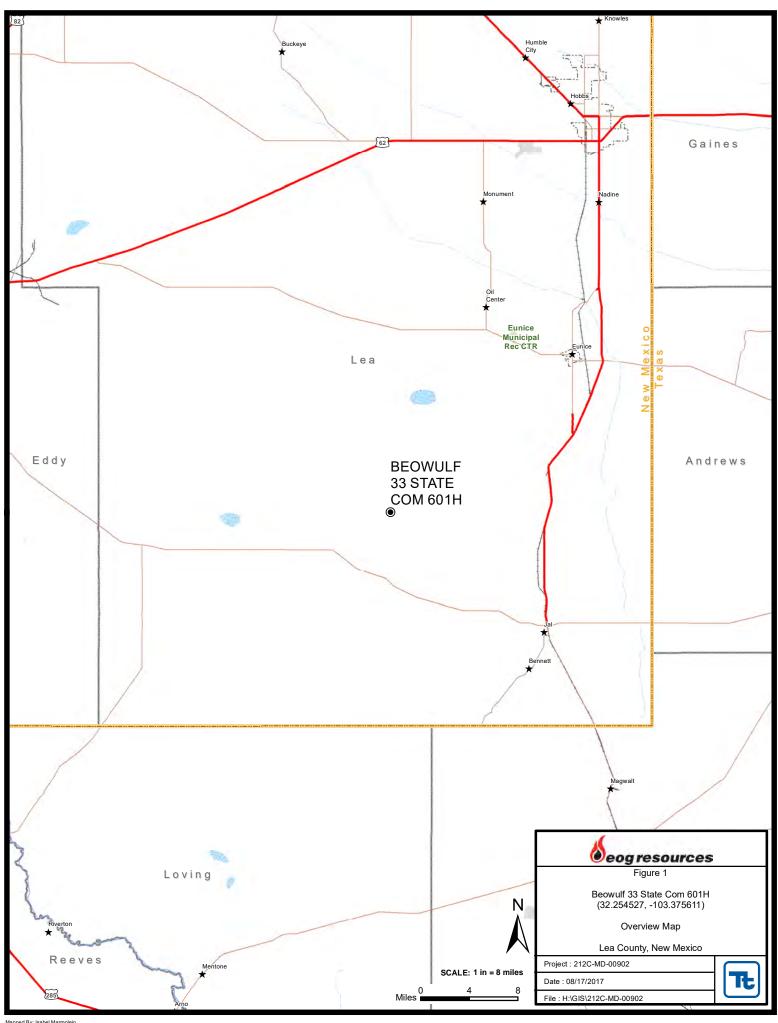
Based on the remediation work performed, EOG Resources requests closure of this spill issue. The final C-141 is shown in Appendix A. If you have any questions or comments concerning the assessment or remediation activities for this site, please call me at (432) 682-4559.

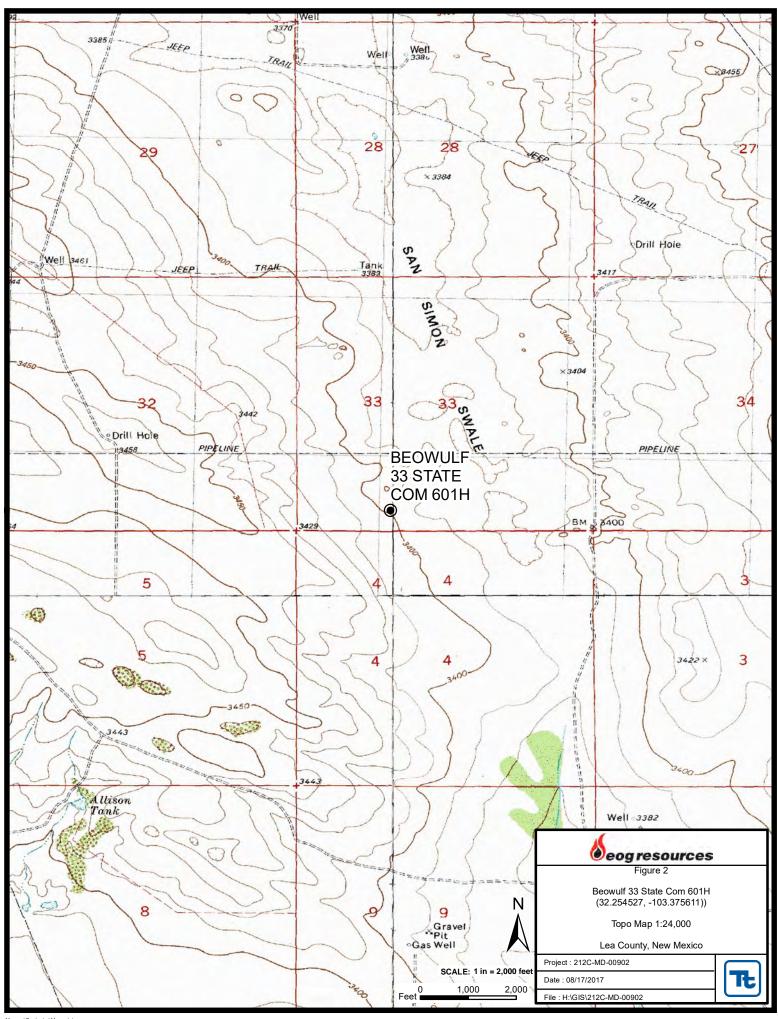
Respectfully submitted, TETRA TECH

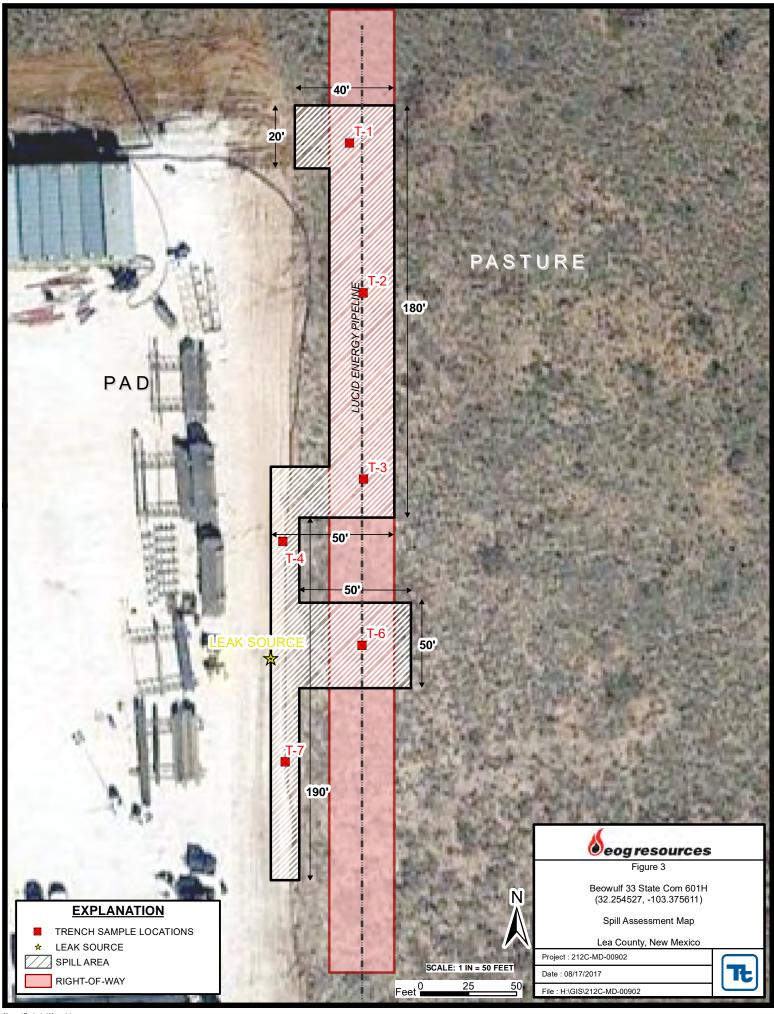
Clair Gonzales, Geologist I

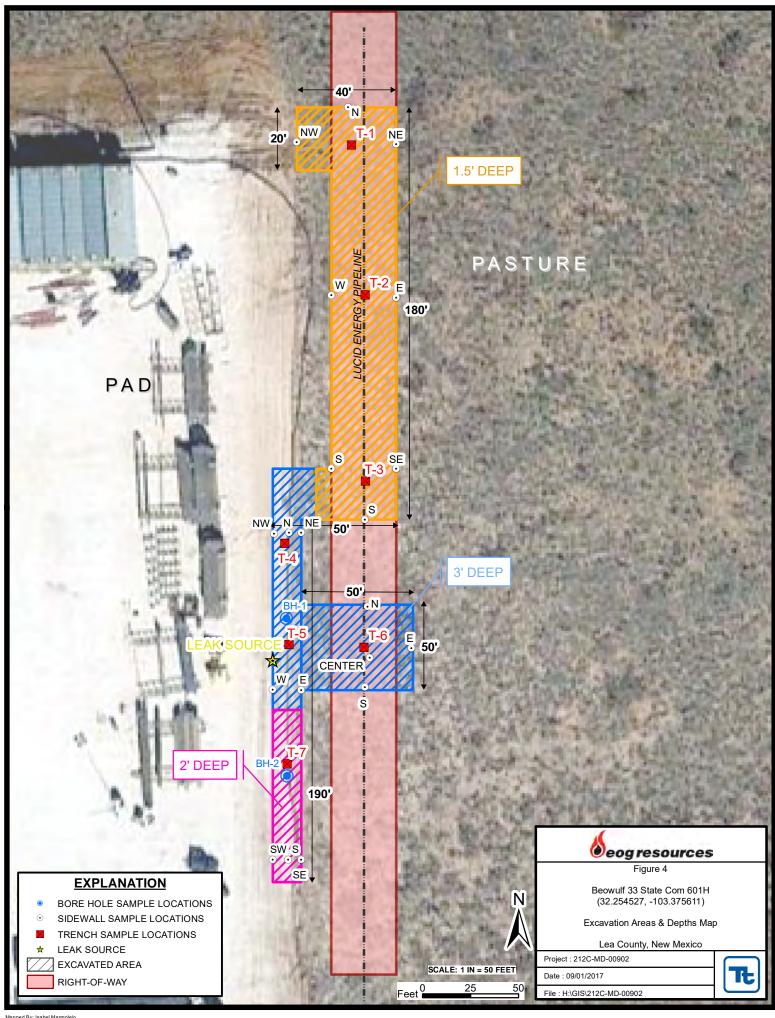
EOG – Jamon Hohensee EOG – Zane Kurtz SLO – Amber Groves Ike Tavarez, Senior Project Manager, P.G.

Figures









Tables

Commis ID	Camania Data	Sample	Soil	Status		TPH	(mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
Sample ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	ORO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
Trench #1	7/10/2017	0-1		Х	<15.0	21.2	<15.0	21.2	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	1,540
	11	2	Χ		-	ı	ı	ı	-	-	-	-	1	16.4
	II .	4	Χ		-	ı	-	ı	-	-	-	-	-	17.9
	11	6	Χ		-	ı	ı	ı	-	-	-	-	1	18.4
	11	8	Χ		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	107
Trench #2	7/10/2017	0-1		Х	<15.0	<15.0	<15.0	<15.0	<0.00351	<0.00351	<0.00351	<0.00351	<0.00351	781
	"	1		Х	-	-	-	-	-	-	-	-	-	1,150
	"	2	Χ		-	-	-	-	-	-	-	-	-	6.01
	"	4	Х		-	-	-	-	-	-	-	-	-	6.13
	"	6	Χ		-	-	-	-	-	-	-	-	-	<5.00
	"	8	Χ		<14.9	<14.9	<14.9	<14.9	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	14.3
Trench #3	7/10/2017	0-1		Х	<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	2,600
	"	1		Х	-	-	-	-	-	-	-	-	-	2,750
	"	2	Χ		-	1	-	1	-	-	-	-	-	67.3
	II .	4	Χ		-	ı	-	ı	-	-	-	-	-	7.90
	11	6	Χ		-	ı	ı	ı	-	-	-	-	ı	6.39
	"	8	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	11.8
Trench #4	7/10/2017	0-1		Х	<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	3,830
	II .	1		X	-	1	•	1	-	-	-	-	ı	3,080
	"	2		Х	-	-	•	•	-	-	-	-	-	1,380
	"	4	Χ		-	-	-	-	-	-	-	-	-	252
	II .	6	Χ		-	-	-	1	-	-	-	-	-	35.9
	"	8	Χ		-	ı	-	1	-	-	-	-	-	108
	"	10	Χ		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	26.8

Table 1 EOG Resources

Beowulf 33 State Commingle 601H Lea County, New Mexico

Occurrie ID	Osmula Data	Sample	Soil	Status		TPH	(mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
Sample ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	ORO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
Trench #5	7/10/2017	0-1		Х	<15.0	187	<15.0	187	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	5,030
	II .	1		Х	-	-	-	1	-	-	-	-	-	3,370
	II .	2		Х	-	-	ı	1	-	-	-	-	-	2,340
	11	4	Χ		-	-	-	-	-	-	-	-	-	875
	II	6	Χ		-	-	-	-	-	-	-	-	-	399
	11	8	Χ		-	-	-	-	-	-	-	-	-	3,010
	"	10	Χ		-	-	-	-	-	-	-	-	-	302
	"	12	Χ		-	-	-	-	-	-	-	-	-	568
	"	14	Χ		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	98.5
Trench #5	8/28/2017	8	Χ		-	-	-	-	-	-	-	-	-	<4.96
Trench #6	7/10/2017	0-1	Х		<14.9	<14.9	<14.9	<14.9	<0.00337	<0.00337	<0.00337	<0.00337	<0.00337	2,030
	II .	1	Χ		-	-	1	1	-	1	-	-	-	1,780
	II .	2	Χ		-	-	ı	1	-	-	-	-	-	1,070
	"	4	Χ		-	-	ı	1	-	-	-	-	-	234
	11	6	Χ		-	-	-	-	-	-	-	-	-	7.30
	11	8	Χ		-	-	-	-	-	-	-	-	-	9.67
	"	10	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	9.98
Trench #7	7/10/2017	0-1	Χ		<15.0	66.0	<15.0	66.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1,200
	II	1	Χ		-	-	-	-	-	-	-	-	-	1,200
	II.	2	Х		-	-	-	-	-	-	-	-	-	42.8
	"	4	Х		-	-	-	-	-	-	-	-	-	10.4
	"	6	Х		-	-	-	-	-	-	-	-	-	6.32
	"	8	Х		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	44.0

(-) Not Analyzed

(EB) Excavation Bottom

Areas Excavated and Removed

Sample ID	Sample Date	Sample	EB Sample	Soil	Status	Chloride
Sample 15	Sample Date	Depth (ft)	Depth (ft)	In-Situ	Removed	(mg/kg)
Area T-6						
Center	7/11/2017	-	3	Х		<4.96
South Sidewall	7/11/2017	-	-	Χ		13.2
North Sidewall	7/11/2017	-	-	Χ		5.22
East Sidewall	7/11/2017	-	-	Χ		14.3
Areas of T1, T2 and T3						
South East Sidewall	7/12/2017	-	-	Χ		56.7
South West Sidewall	7/12/2017	-	-	Χ		<4.97
North West Sidewall	7/12/2017	-	-	Χ		12.8
North East Sidewall	7/12/2017	-	-	Х		14.6
East Sidewall	7/12/2017	-	-	Χ		69.0
West Sidewall	7/12/2017	-	-	Χ		6.43
South Bottomhole	7/12/2017	1.5	1.5	Х		10.7
Center Bottomhole	7/12/2017	1.5	1.5	Х		8.29
North Bottomhole	7/12/2017	1.5	1.5	Х		251
Areas of T4, T5 and T7						
North Bottom Hole	8/28/2017	3	3	Χ		22.1
North West Sidewall	8/28/2017	-	-	Χ		<4.98
North East Sidewall	8/28/2017	-	-	Χ		<4.98
Bottom Hole #1	8/28/2017	3	3	Χ		64.9
Bottom Hole #2	8/28/2017	2	2	Χ		<4.90
South Bottom Hole	8/28/2017	2	2	Χ		<4.90
South West Sidewall	8/28/2017	-	-	Χ		<4.92
South East Sidewall	8/28/2017	-	-	Χ		62.2
West Sidewall	8/28/2017	-	-	Х		18.1
East Sidewall	8/28/2017	-	-	Х		<4.99

^(-) Not Analyzed

⁽EB) Excavation Bottom

Photos





View North East, Trench #1



View East, Trench#1





View South, Trench#2



View West, Trench #2





View South, Trench#3



View North, Trench #3





View South West, Trench #4



View South, Trench #4





View North, Trench #5



View West, Trench #5





View East, Pasture Area Trench #6



View East, Pasture Area Trench #6





View North, Trench #7



View South, Trench #7





View North, Excavation Area T1, T2, T3 (1.5')



View South, Excavation Area T1, T2, T3 (1.5')





View East, Excavation Pasture Area T#6 (3')



View South, Re-Trench#5





View South, Excavated Area T-5, T-7



View North, Excavated Area T-7, T-5, T-4

Appendix A

<u>District I</u> 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

Revised April 3, 2017 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Form C-141

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

Release Notification and Corrective Action

	OPERATOR	Initial Report Final Repor						
Name of Company: EOG Resources	Contact: Jamon Hohensee							
Address: 5509 Champions Drive, Midland, TX 79706	Telephone No. 432-556-8074							
Facility Name: Beowulf 33 State Com 601H	Facility Type: Production Facility							
Surface Owner: NM State Lands Mineral Owne	er: NM State Lands API No. 30025435310000							
LOCATION	ON OF RELEASE							
	th/South Line Feet from the Ea	st/West Line County						
33 N 23S 35E								
Latitude32.25511	Longitude103.3752	NAD83						
NATUR	E OF RELEASE							
Type of Release: PW	Volume of Release: 130bbls	Volume Recovered: 0						
Source of Release: Water Truck	Date and Hour of Occurrence: 6/28/17, time unknown	Date and Hour of Discovery: 6/29/17						
Was Immediate Notice Given?	If YES, To Whom?							
Yes ⊠ No ☐ Not Require								
By Whom?	Date and Hour							
Was a Watercourse Reached? ☐ Yes ☑ No	If YES, Volume Impacting the V	Vatercourse.						
If a Watercourse was Impacted, Describe Fully.*	DECEUVED							
The manifest of the same of th	RECEIVED							
	By Olivia Yu at 3	2:02 pm, Jul 03, 2017						
		тод рин, сан се, де н						
Describe Cause of Problem and Remedial Action Taken.*	-611/2							
Produced water was released from a water hauler truck on the side of a	production well pad 130hbls released	and Obbls recovered. Lease operator						
discovered the spill and contacted the EOG environmental group.	production wen pad 1500013 released	and occasionate appropriate						
discovered the spin and contavore are								
Cleanup Action Taken *								
Describe Area Affected and Cleanup Action Taken.*								
Area is a pipeline ROW just east of the pad. No visible surface waters	were impacted. 3 rd party environmenta	al firm will investigate site and take necessary						
steps properly remediate the affected area to regulatory standards.								
I hereby certify that the information given above is true and complete to	o the best of my knowledge and under	rstand that pursuant to NMOCD rules and						
to the certain release	e notifications and perform corrective	actions for releases which may enganger						
public health or the environment. The acceptance of a C-141 report by should their operations have failed to adequately investigate and remed	liate contamination that pose a threat t	o ground water, surface water, human health						
or the environment. In addition, NMOCD acceptance of a C-141 report	t does not relieve the operator of response	onsibility for compliance with any other						
federal, state, or local laws and/or regulations.								
111	OIL CONSEI	RVATION DIVISION						
3-1/1		ALD.						
Signature:	Approved by Environmental Speci	alist:						
Printed Name: Jamon Hohensee	Approved by Environmental Specia	anst.						
Title: Environmental Representative	Approval Date: 7/3/2017	Expiration Date:						
		,						
E-mail Address: jamon_hohensee@eogresources.com	Conditions of Approval:	Attached Q						
Date: 6/30/17 Phone: 432-556-8074	see attached directiv	e						
1 1)216 0/30/1/								

nOY1718454674

pOY1718454979

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II 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

Submit 2 Copies to appropriate District Office in accordance

with Rule 116 on back side of form

Form C-141

Revised October 10, 2003

Release Notification and Corrective Action

						OPERA	ΓOR		☐ Initia	al Report	\boxtimes	Final R	eport
Name of Co	mpany E	EOG Resour	ces			Contact Jar	non Hohensee			_			
		pions Drive,					Vo. (432)556-80						
Facility Nar	ne Beowi	ılf 33 State C	om 601F	I		Facility Typ	e Production	Facility	7				
Surface Ow	ner: NM S	State Lands		Mineral O	wner:	NM State La	ands		API No	. 30025435	31000	00	
				LOCA	TIO	N OF REI	FASE						
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/W	Vest Line	County			
N	33	23S	35E		1,0101	, 20 4011 23110	1 000 11 0111 1110	Zaoc v	. 050 20	county	Lea		
				Latitude N 32.	2551°	Longitud	e W 103.3752°	>					
				NAT	URE	OF RELI	EASE						
Type of Relea							Release 130 bbls			Recovered 0			
Source of Re	lease: Wate	r Truck				Date and H 6/28/17	our of Occurrence	e	Date and 6/29/17	Hour of Dis	covery		
Was Immedia	ate Notice C	Given?				If YES, To	Whom?		0/29/17				
			Yes 🗵	No Not Rec	quired								
By Whom? Jo						Date and H	lour 3/15/10 4:5	69 p.m.					
Was a Watero	course Read	_	3 7 \	Lar			lume Impacting the	he Wate	rcourse.				
		Ц	Yes 🗵			N/A							
If a Watercou	ırse was Im	pacted, Descri	be Fully.	•									
N/A													
1071													
Dogoriha Cou	as of Duobl	em and Remed	lial Aatio	Tokon *									
Describe Cau	ise of Probl	em and Remed	nai Actioi	i raken."									
				r truck on the side									
				ental group. The so ean material to sur			re removed; mate	rial was	transporte	d offsite for	proper	disposal.	
THE EXCAVALE	u areas wer	e then backing	ied with C	ean material to sur	irace g.	raue.							
Describe Are	a Affected	and Cleanup A	Action Tak	en.*									
Tetra Tech in	spected site	e and collected	samples	to define spills exte	ent. So	il that exceede	ed RRAL was ren	noved ar	nd hauled a	way for pro	per dis	posal. Site	e
				backfill material. T								•	
I haraby carti	fy that the	information gi	van above	is true and comple	ete to t	ha bast of my	knowledge and u	ndoreton	d that pure	uant to NM(OCD #	ules and	
				id/or file certain re	_							_	
public health	or the envi	ronment. The	acceptanc	e of a C-141 repor	rt by th	e NMOCD ma	arked as "Final Ro	eport" de	oes not reli	eve the oper	ator of	liability	
				investigate and retance of a C-141 re									th
		ws and/or regu		tance of a C-141 fo	eport d	ioes not renev	e the operator of i	responsi	offity for co	эшриансе w	im any	omer	
, ,		<u> </u>					OIL CONS	SERV	ATION	DIVISIO	N		
Cianatura													
Signature:						Anneoused by	District Superviso	041					
Printed Name	e: Ike Tavar	rez				Approved by	District Superviso	01.					
Title: Project	Manager					Approval Dat	e:	E	Expiration 1	Date:			
E-mail Addre	ess: Ike.Tav	arez@TetraTe	ech.com			Conditions of	Approval:			Attached			
Date:			Phone:	(432) 682-4559									

^{*} Attach Additional Sheets If Necessary

Appendix B

Water Well Data Average Depth to Groundwater (ft) Beowulf 33 State Com 601H Lea County, New Mexico

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

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

_	22 S	outh	36 E	East	
6	5	4	3	2	1
195	212				137
7	8	9	10	11	12
18	17	16 170	15	14	13
19	20	21	22 22	23	24
30	29	28	27 160	26	25 118
31	32	33	34	35 181 187	36

	23 S	outh	3		
6	5	4	3	2	1
7	8 255	9	10	11	12
18	17	16	15	14 318	13
19	20	21	22 295	23 265	24
30	29	28	27	26	25
31	32 130	33	34	35	36

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

	23 \$	South	3	6 East	:
6	5	4	3	2	1
		160			
7	8	9	10	11	12
18	17	16	15	14	13
		220	149		
19	20	21	22	23	24
			400	143	
30	29	28	27	26	25
31	32	33	34	35	36
189					127
109	J				12/

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

	24 Sc	uth	35	East	
6	5	4	3	2	1
7	8	9	10 300	11	12
18	17	16	15	14	13
19	20 97	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	24 Sc	uth	36	East	
6	5	4 165	3	2	1
7	8	9	10	11	12
18	17	16	15 312	14	13
19	20	21	22	23 160	24
30	29	28	27	26	25
31	32	33 54 53	34	35	36

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

9 ,	/	` '				U	, ,		,	,
	POD									
	Sub-	C	QQ						Depth	Depth Water
POD Number	Code basin C	ounty 6	4164	Sec	Tws	Rng	Х	Υ	Well	Water Column
CP 00499	СР	LE	3 3	23	23S	35E	655875	3573194* 🎒	150	
CP 00568	СР	LE 2	2 4	09	23S	35E	653908	3576878* 🌍	875	
CP 00843 POD1	СР	LE	4 2	36	23S	35E	658729	3570823*	250	

Average Depth to Water:

Minimum Depth:

Maximum Depth:

Record Count: 3

PLSS Search:

Township: 23S Range: 35E

Appendix C

Analytical Report 557206

for Tetra Tech- Midland

Project Manager: Ike Tavarez Beowulf 33 State Com 601H

13-JUL-17

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





13-JUL-17

Project Manager: **Ike Tavarez Tetra Tech- Midland** 4000 N. Big Spring Suite 401 Midland, TX 79705

Reference: XENCO Report No(s): **557206 Beowulf 33 State Com 601H**

Project Address: Lea County, New Mexico

Ike Tavarez:

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) 557206. 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. 557206 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks

Knus Hoah

Project Manager

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 557206



Tetra Tech- Midland, Midland, TX

Beowulf 33 State Com 601H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench #1 (0-1')	S	07-10-17 00:00		557206-001
Trench #1 (2')	S	07-10-17 00:00		557206-002
Trench #1 (4')	S	07-10-17 00:00		557206-003
Trench #1 (6')	S	07-10-17 00:00		557206-004
Trench #1 (8')	S	07-10-17 00:00		557206-005
Trench #2 (0-1')	S	07-10-17 00:00		557206-006
Trench #2 (1')	S	07-10-17 00:00		557206-007
Trench #2 (2')	S	07-10-17 00:00		557206-008
Trench #2 (4')	S	07-10-17 00:00		557206-009
Trench #2 (6')	S	07-10-17 00:00		557206-010
Trench #2 (8')	S	07-10-17 00:00		557206-011
Trench #3 (0-1')	S	07-10-17 00:00		557206-012
Trench #3 (1')	S	07-10-17 00:00		557206-013
Trench #3 (2')	S	07-10-17 00:00		557206-014
Trench #3 (4')	S	07-10-17 00:00		557206-015
Trench #3 (6')	S	07-10-17 00:00		557206-016
Trench #3 (8')	S	07-10-17 00:00		557206-017
Trench #4 (0-1')	S	07-10-17 00:00		557206-018
Trench #4 (1')	S	07-10-17 00:00		557206-019
Trench #4 (2')	S	07-10-17 00:00		557206-020
Trench #4 (4')	S	07-10-17 00:00		557206-021
Trench #4 (6')	S	07-10-17 00:00		557206-022
Trench #4 (8')	S	07-10-17 00:00		557206-023
Trench #4 (10')	S	07-10-17 00:00		557206-024
Trench #5 (0-1')	S	07-10-17 00:00		557206-025
Trench #5 (1')	S	07-10-17 00:00		557206-026
Trench #5 (2')	S	07-10-17 00:00		557206-027
Trench #5 (4')	S	07-10-17 00:00		557206-028
Trench #5 (6')	S	07-10-17 00:00		557206-029
Trench #5 (8')	S	07-10-17 00:00		557206-030
Trench #5 (10')	S	07-10-17 00:00		557206-031
Trench #5 (12')	S	07-10-17 00:00		557206-032
Trench #5 (14')	S	07-10-17 00:00		557206-033
Trench #6 (0-1')	S	07-10-17 00:00		557206-034
Trench #6 (1')	S	07-10-17 00:00		557206-035
Trench #6 (2')	S	07-10-17 00:00		557206-036
Trench #6 (4')	S	07-10-17 00:00		557206-037
Trench #6 (6')	S	07-10-17 00:00		557206-038
Trench #6 (8')	S	07-10-17 00:00		557206-039
Trench #6 (10')	S	07-10-17 00:00		557206-040
Trench #7 (0-1')	S	07-10-17 00:00		557206-041
Trench #7 (1')	S	07-10-17 00:00		557206-042
Trench #7 (2')	S	07-10-17 00:00		557206-043



Sample Cross Reference 557206



Tetra Tech- Midland, Midland, TX

Beowulf 33 State Com 601H

Trench #7 (4')	S	07-10-17 00:00	557206-044
Trench #7 (6')	S	07-10-17 00:00	557206-045
Trench #7 (8')	S	07-10-17 00:00	557206-046

XENCO

CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Beowulf 33 State Com 601H

Project ID: Report Date: 13-JUL-17
Work Order Number(s): 557206 Date Received: 07/11/2017

Sample receipt non conformances and comments:

07/12/17: Per Jeanne Finch, run Chlorides that were originally marked on the COC on hold.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3022018 BTEX by EPA 8021B

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

Batch: LBA-3022023 Inorganic Anions by EPA 300/300.1

Lab Sample ID 557206-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 557206-001, -005, -006, -011, -012, -017, -018, -024, -025, -033, -034, -040, -041, -046.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



$Tetra\ Tech\ Midland,\ Midland,\ TX$

Project Name: Beowulf 33 State Com 601H



Project Id:

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 13-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557206-0	101	557206-0	02	557206-0	03	557206-0	04	557206-	005	557206-	006
	Field Id:	Trench #1 (-							Trench #1		Trench #2	
Analysis Requested		Hench #1 (0-1)	Trench #1	(2)	Trench #1	(4)	Trench #1	(6)	Trench #1	(8)	Hench #2	(0-1)
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	.	SOIL	
	Sampled:	Jul-10-17 0	00:00	Jul-10-17 0	0:00	Jul-10-17 0	0:00	Jul-10-17 0	0:00	Jul-10-17	00:00	Jul-10-17	00:00
BTEX by EPA 8021B	Extracted:	Jul-11-17 1	6:00							Jul-11-17	16:00	Jul-11-17	16:00
	Analyzed:	Jul-11-17 1	7:44							Jul-11-17	18:00	Jul-12-17	07:39
	Units/RL:	mg/kg	RL							mg/kg	RL	mg/kg	RL
Benzene		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Toluene		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Ethylbenzene		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
m,p-Xylenes		< 0.00398	0.00398							< 0.00401	0.00401	< 0.00702	0.00702
o-Xylene		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Total Xylenes		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Total BTEX		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-11-17 1	7:00	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-11-17	17:00	Jul-11-17	17:00
	Analyzed:	Jul-11-17 1	8:00	Jul-12-17 1	4:35	Jul-12-17 1	4:58	Jul-12-17 1	5:14	Jul-11-17	17:37	Jul-11-17	18:08
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1540	24.6	16.4	5.00	17.9	5.00	18.4	5.00	107	4.93	781	4.96
TPH By SW8015 Mod	Extracted:	Jul-11-17 1	1:00				ĺ			Jul-11-17	11:00	Jul-11-17	11:00
	Analyzed:	Jul-11-17 1	3:22							Jul-11-17	14:23	Jul-11-17	14:44
	Units/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
Diesel Range Organics (DRO)		21.2	15.0							<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0							<15.0	15.0	<15.0	15.0
Total TPH		21.2	15.0							<15.0	15.0	<15.0	15.0

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

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Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id:

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 13-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557206-0	007	557206-0	008	557206-0	09	557206-0	10	557206-0	011	557206-	012
Analysis Dogwoods	Field Id:	Trench #2	(1')	Trench #2	2 (2')	Trench #2	(4')	Trench #2	(6')	Trench #2	(8')	Trench #3	(0-1')
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL	.	SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-10-17 0	00:00	Jul-10-17 (00:00	Jul-10-17 0	0:00	Jul-10-17 0	0:00	Jul-10-17 (00:00	Jul-10-17	00:00
BTEX by EPA 8021B	Extracted:									Jul-11-17 1	6:00	Jul-11-17	16:00
	Analyzed:									Jul-12-17 (7:56	Jul-11-17	18:48
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene										< 0.00344	0.00344	< 0.00202	0.00202
Toluene										< 0.00344	0.00344	< 0.00202	0.00202
Ethylbenzene										< 0.00344	0.00344	< 0.00202	0.00202
m,p-Xylenes										< 0.00687	0.00687	< 0.00404	0.00404
o-Xylene										< 0.00344	0.00344	< 0.00202	0.00202
Total Xylenes										< 0.00344	0.00344	< 0.00202	0.00202
Total BTEX										< 0.00344	0.00344	< 0.00202	0.00202
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-12-17 1	3:30	Jul-12-17	13:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-11-17 1	7:00	Jul-11-17	17:00
	Analyzed:	Jul-12-17 1	5:21	Jul-12-17	15:29	Jul-12-17 1	6:06	Jul-12-17 1	6:13	Jul-11-17 1	8:16	Jul-11-17	18:23
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1150	5.00	6.01	5.00	6.13	5.00	< 5.00	5.00	14.3	4.98	2600	25.0
TPH By SW8015 Mod	Extracted:									Jul-11-17 1	1:00	Jul-11-17	11:00
	Analyzed:									Jul-11-17 1	5:04	Jul-11-17	15:25
	Units/RL:									mg/kg	RL	mg/kg	RL
asoline Range Hydrocarbons (GRO)										<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)										<14.9	14.9	<15.0	15.0
Oil Range Hydrocarbons (ORO)										<14.9	14.9	<15.0	15.0
Total TPH										<14.9	14.9	<15.0	15.0

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Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H

TNI TABORATORS

Project Id: Contact:

Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 13-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557206-0	013	557206-0	14	557206-0)15	557206-0)16	557206-0	017	557206-	018
Analysis Requested	Field Id:	Trench #3	(1')	Trench #3	(2')	Trench #3	(4')	Trench #3	(6')	Trench #3	(8')	Trench #4	(0-1')
Anaiysis Requesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	SOIL	
	Sampled:	Jul-10-17 (00:00	Jul-10-17 0	0:00	Jul-10-17 (00:00	Jul-10-17 (00:00	Jul-10-17	00:00	Jul-10-17	00:00
BTEX by EPA 8021B	Extracted:									Jul-11-17	16:00	Jul-11-17	16:00
	Analyzed:									Jul-11-17	19:05	Jul-11-17	19:20
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene	"									< 0.00200	0.00200	< 0.00201	0.00201
Toluene										< 0.00200	0.00200	< 0.00201	0.00201
Ethylbenzene										< 0.00200	0.00200	< 0.00201	0.00201
m,p-Xylenes										< 0.00401	0.00401	< 0.00402	0.00402
o-Xylene										< 0.00200	0.00200	< 0.00201	0.00201
Total Xylenes										< 0.00200	0.00200	< 0.00201	0.00201
Total BTEX										< 0.00200	0.00200	< 0.00201	0.00201
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-11-17	17:00	Jul-11-17	17:00
	Analyzed:	Jul-12-17 1	6:21	Jul-12-17 1	6:29	Jul-12-17 1	6:37	Jul-12-17 1	6:44	Jul-11-17	18:46	Jul-11-17	18:54
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2750	25.0	67.3	5.00	7.90	5.00	6.39	5.00	11.8	4.94	3830	24.9
TPH By SW8015 Mod	Extracted:									Jul-11-17	11:00	Jul-11-17	11:00
	Analyzed:									Jul-11-17	15:46	Jul-11-17	16:06
	Units/RL:									mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	'									<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)										<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)										<15.0	15.0	<15.0	15.0
Total TPH										<15.0	15.0	<15.0	15.0

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



Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id:

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 13-JUL-17 **Project Manager:** Kelsey Brooks

	1												
	Lab Id:	557206-0)19	557206-0	020	557206-0	21	557206-0	22	557206-0)23	557206-	024
Analysis Requested	Field Id:	Trench #4	(1')	Trench #4	(2')	Trench #4	(4')	Trench #4	(6')	Trench #4	(8')	Trench #4	(10')
Anaiysis Requesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-10-17 0	00:00	Jul-10-17 (00:00	Jul-10-17 0	0:00	Jul-10-17 0	0:00	Jul-10-17 (00:00	Jul-10-17	00:00
BTEX by EPA 8021B	Extracted:											Jul-11-17	16:00
	Analyzed:											Jul-11-17	19:36
	Units/RL:											mg/kg	RL
Benzene	'											< 0.00198	0.00198
Toluene												< 0.00198	0.00198
Ethylbenzene												< 0.00198	0.00198
m,p-Xylenes												< 0.00396	0.00396
o-Xylene												< 0.00198	0.00198
Total Xylenes												< 0.00198	0.00198
Total BTEX												< 0.00198	0.00198
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17	3:30	Jul-11-17	17:00
	Analyzed:	Jul-12-17 1	7:07	Jul-12-17 1	7:15	Jul-12-17 1	7:38	Jul-12-17 1	7:46	Jul-12-17	7:53	Jul-11-17	19:02
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3080	25.0	1380	25.0	252	4.95	35.9	4.94	108	4.91	26.8	4.99
TPH By SW8015 Mod	Extracted:											Jul-11-17	11:00
	Analyzed:											Jul-11-17	16:27
	Units/RL:											mg/kg	RL
Gasoline Range Hydrocarbons (GRO)												<15.0	15.0
Diesel Range Organics (DRO)		<u> </u>										<15.0	15.0
Oil Range Hydrocarbons (ORO)		· · · · · · · · · · · · · · · · · · ·										<15.0	15.0
Total TPH												<15.0	15.0

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Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id:

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 13-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557206-0	125	557206-0	26	557206-0	27	557206-0	120	557206-0	20	557206-0	20
Analysis Requested	Field Id:	Trench #5 ((0-1')	Trench #5	(I')	Trench #5	(2')	Trench #5	(4')	Trench #5	(6.)	Trench #5	(8.)
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-10-17 0	00:00	Jul-10-17 0	00:00	Jul-10-17 0	00:00	Jul-10-17 (00:00	Jul-10-17 (00:00	Jul-10-17 0	0:00
BTEX by EPA 8021B	Extracted:	Jul-11-17 1	16:00										
	Analyzed:	Jul-11-17 1	19:53										
	Units/RL:	mg/kg	RL										
Benzene	'	< 0.00201	0.00201										
Toluene		< 0.00201	0.00201										
Ethylbenzene		< 0.00201	0.00201										
m,p-Xylenes		< 0.00402	0.00402										
o-Xylene		< 0.00201	0.00201										
Total Xylenes		< 0.00201	0.00201										
Total BTEX		< 0.00201	0.00201										
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-11-17 1	17:00	Jul-12-17 1	3:30	Jul-12-17 1:	5:00						
	Analyzed:	Jul-11-17 1	19:09	Jul-12-17 1	8:01	Jul-12-17 1	8:09	Jul-12-17 1	8:16	Jul-12-17 1	8:24	Jul-12-17 1	9:33
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5030	49.5	3370	24.8	2340	24.8	875	5.00	399	4.99	3010	24.8
TPH By SW8015 Mod	Extracted:	Jul-11-17 1	11:00										
	Analyzed:	Jul-11-17 1	16:47										
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0										
Diesel Range Organics (DRO)		187	15.0										
Oil Range Hydrocarbons (ORO)		<15.0	15.0										
Total TPH		187	15.0										

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Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id:

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 13-JUL-17 **Project Manager:** Kelsey Brooks

	1		1		1		1				1		
	Lab Id:	557206-0	031	557206-0	32	557206-03	33	557206-0)34	557206-0	35	557206-0	36
Analysis Requested	Field Id:	Trench #5	(10')	Trench #5	(12')	Trench #5 ((14')	Trench #6 (0-1')	Trench #6	(1')	Trench #6	(2')
Analysis Requesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-10-17 0	00:00	Jul-10-17 0	0:00	Jul-10-17 00	0:00	Jul-10-17 (00:00	Jul-10-17 0	0:00	Jul-10-17 0	0:00
BTEX by EPA 8021B	Extracted:					Jul-11-17 16	6:00	Jul-11-17 1	6:00				
	Analyzed:					Jul-11-17 20	0:41	Jul-12-17 0	8:12				
	Units/RL:					mg/kg	RL	mg/kg	RL				
Benzene						< 0.00202	0.00202	< 0.00337	0.00337				
Toluene						< 0.00202	0.00202	< 0.00337	0.00337				
Ethylbenzene						< 0.00202	0.00202	< 0.00337	0.00337				
m,p-Xylenes						< 0.00404	0.00404	< 0.00673	0.00673				
o-Xylene						< 0.00202	0.00202	< 0.00337	0.00337				
Total Xylenes						< 0.00202	0.00202	< 0.00337	0.00337				
Total BTEX						< 0.00202	0.00202	< 0.00337	0.00337				
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-12-17 1	15:00	Jul-12-17 1	5:00	Jul-11-17 17	7:00	Jul-11-17 1	7:00	Jul-12-17 1	5:00	Jul-12-17 1	5:00
	Analyzed:	Jul-12-17 1	19:10	Jul-12-17 1	9:41	Jul-11-17 19	9:17	Jul-11-17 1	9:48	Jul-12-17 1	9:49	Jul-12-17 1	9:56
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		302	4.96	706	4.95	98.5	4.97	2030	24.9	1780	24.8	1070	4.98
TPH By SW8015 Mod	Extracted:					Jul-11-17 11	1:00	Jul-11-17 1	1:00				
	Analyzed:					Jul-11-17 17	7:07	Jul-11-17 1	8:07				
	Units/RL:					mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)	·					<15.0	15.0	<14.9	14.9				
Diesel Range Organics (DRO)						<15.0	15.0	<14.9	14.9				
Oil Range Hydrocarbons (ORO)						<15.0	15.0	<14.9	14.9				
Total TPH						<15.0	15.0	<14.9	14.9				

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$Tetra\ Tech-\ Midland,\ Midland,\ TX$

Project Name: Beowulf 33 State Com 601H



Project Id:

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 13-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557206-0)37	557206-0	38	557206-0)39	557206-0)40	557206-0		557206-0	142
Analysis Requested	Field Id:	Trench #6	(4')	Trench #6	(6')	Trench #6	(8')	Trench #6	(10')	Trench #7 ((0-1')	Trench #7	(1')
Analysis Requesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-10-17 0	00:00	Jul-10-17 0	0:00	Jul-10-17 (00:00	Jul-10-17 0	00:00	Jul-10-17 (00:00	Jul-10-17 0	00:00
BTEX by EPA 8021B	Extracted:							Jul-11-17 1	6:00	Jul-11-17 1	6:00		
	Analyzed:							Jul-11-17 1	7:27	Jul-11-17 2	21:14		
	Units/RL:							mg/kg	RL	mg/kg	RL		
Benzene								< 0.00200	0.00200	< 0.00200	0.00200		
Toluene								< 0.00200	0.00200	< 0.00200	0.00200		
Ethylbenzene								< 0.00200	0.00200	< 0.00200	0.00200		
m,p-Xylenes								< 0.00401	0.00401	< 0.00401	0.00401		
o-Xylene								< 0.00200	0.00200	< 0.00200	0.00200		
Total Xylenes								< 0.00200	0.00200	< 0.00200	0.00200		
Total BTEX								< 0.00200	0.00200	< 0.00200	0.00200		
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-12-17 1	5:00	Jul-12-17 1	5:00	Jul-12-17 1	5:00	Jul-11-17 1	7:00	Jul-11-17 1	7:00	Jul-12-17 1	5:00
	Analyzed:	Jul-12-17 2	20:19	Jul-12-17 2	0:27	Jul-12-17 2	20:35	Jul-11-17 1	9:25	Jul-11-17 1	9:55	Jul-12-17 2	0:42
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		234	4.98	7.30	4.93	9.67	4.99	9.98	4.99	1200	24.9	1200	4.97
TPH By SW8015 Mod	Extracted:				ĺ			Jul-11-17 1	1:00	Jul-11-17 1	1:00		
	Analyzed:							Jul-11-17 1	8:26	Jul-11-17 1	8:46		
	Units/RL:							mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)	·							<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)								<15.0	15.0	66.0	15.0		
Oil Range Hydrocarbons (ORO)								<15.0	15.0	<15.0	15.0		
Total TPH								<15.0	15.0	66.0	15.0		

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Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id: Contact:

Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 13-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557206-0	M3	557206-0	44	557206-0	M5	557206-0	46		
			-						-		
Analysis Requested	Field Id:	Trench #7	(2')	Trench #7	(4')	Trench #7	(6.)	Trench #7	(8.)		
	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Jul-10-17 0	0:00	Jul-10-17 0	0:00	Jul-10-17 0	00:00	Jul-10-17 0	0:00		
BTEX by EPA 8021B	Extracted:							Jul-11-17 1	6:00		
	Analyzed:							Jul-11-17 2	1:30		
	Units/RL:							mg/kg	RL		
Benzene								< 0.00199	0.00199		
Toluene								< 0.00199	0.00199		
Ethylbenzene								< 0.00199	0.00199		
m,p-Xylenes								< 0.00398	0.00398		
o-Xylene									0.00199		
Total Xylenes								< 0.00199	0.00199		
Total BTEX								< 0.00199	0.00199		
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-12-17 1	5:00	Jul-12-17 1	5:00	Jul-12-17 1	5:00	Jul-11-17 1	7:00		
	Analyzed:	Jul-12-17 2	0:50	Jul-12-17 2	0:58	Jul-12-17 2	1:21	Jul-11-17 2	0:18		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		42.8	4.96	10.4	4.98	6.32	5.00	44.0	4.99		
TPH By SW8015 Mod	Extracted:							Jul-11-17 1	1:00		
	Analyzed:							Jul-11-17 1	9:06		
	Units/RL:							mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)	'							<15.0	15.0		
Diesel Range Organics (DRO)								<15.0	15.0		
Oil Range Hydrocarbons (ORO)								<15.0	15.0		
Total TPH								<15.0	15.0		

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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

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 (432) 563-1800
 (432) 563-1713

 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282
 (602) 437-0330

Final 1.001



Project Name: Beowulf 33 State Com 601H

 Work Orders:
 557206, 557206
 Project ID:

 Lab Batch #:
 3022004
 Sample:
 557206-001 / SMP
 Batch:
 1
 Matrix:
 Soil

Units: mg/kg Date Analyzed: 07/11/17 13:22	SU	RROGATE RI	ECOVERY S	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			. ,		
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	58.7	49.9	118	70-135	

Lab Batch #: 3022004 **Sample:** 557206-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 14:23 SURROGATE RECOVERY STUDY **Amount** True Control TPH By SW8015 Mod Found Limits Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1-Chlorooctane 111 99.7 111 70-135 o-Terphenyl 57.0 49.9 114 70-135

Lab Batch #: 3022004 **Sample:** 557206-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg Date Analyzed: 07/11/17 14:44 SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.7	109	70-135	
o-Terphenyl	55.8	49.9	112	70-135	

Lab Batch #: 3022004 **Sample:** 557206-011 / SMP **Batch:** 1 **Matrix:** Soil

Units:	mg/kg	Date Analyzed: 07/11/17 15:04	SU	RROGATE RE	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		111	99.6	111	70-135	
o-Terpheny	1		56.6	49.8	114	70-135	

Units:	mg/kg	Date Analyzed: 0//11/17 15:25	SU	RROGATE RI	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chloroocta	ane		127	99.9	127	70-135	
o-Terphenyl			64.9	50.0	130	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders:
 557206, 557206
 Project ID:

 Lab Batch #:
 3022004
 Sample:
 557206-017 / SMP
 Batch:
 1
 Matrix:
 Soil

Units:	mg/kg	Date Analyzed: 07/11/17 15:46	5:46 SURROGATE RECOVERY STUDY						
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes							
1-Chloroocta	nne		120	99.9	120	70-135			
o-Terphenyl			62.1	50.0	124	70-135			

Lab Batch #: 3022004 **Sample:** 557206-018 / SMP **Batch:** 1 **Matrix:** Soil

Units:	mg/kg Date Analyzed: 07/11/17/16:06 SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]			
1-Chlorooc	ctane		113	100	113	70-135		
o-Terpheny	yl		58.7	50.0	117	70-135		

Lab Batch #: 3022004 **Sample:** 557206-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg Date Analyzed: 07/11/17 16:27 SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	57.9	49.9	116	70-135	

Lab Batch #: 3022004 **Sample:** 557206-025 / SMP **Batch:** 1 **Matrix:** Soil

Units:	mg/kg	Date Analyzed: 07/11/17 16:47	SURROGATE RECOVERY STUDY						
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	ane		112	99.9	112	70-135			
o-Terpheny			57.4	50.0	115	70-135			

Units:	mg/kg	Date Analyzed: 0//11/17/17:07	O/ SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]					
1-Chloroocta	ane		110	99.8	110	70-135				
o-Terphenyl			57.5	49.9	115	70-135				

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders:
 557206, 557206
 Project ID:

 Lab Batch #:
 3022018
 Sample:
 557206-040 / SMP
 Batch:
 1
 Matrix:
 Soil

Units:	mg/kg	Date Analyzed: 07/11/17 17:27	7:27 SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluorobenzene		0.0255	0.0300	85	80-120				
4-Bromofluorobenzene			0.0344	0.0300	115	80-120			

Lab Batch #: 3022018 Sample: 557206-001 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/11/17 17:44	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluor	obenzene		0.0311	0.0300	104	80-120			
4-Bromofluorobenzene			0.0295	0.0300	98	80-120			

Units: mg/kg Date Analyzed: 07/11/17 18:00 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 3022004 Sample: 557206-034 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/11/17 18:07	SURROGATE RECOVERY STUDY						
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	ane		111	99.6	111	70-135			
o-Terphenyl			57.3	49.8	115	70-135			

Units:	mg/kg	Date Analyzed: 07/11/17 18:26	SURROGATE RECOVERY STUDY						
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	tane		114	99.7	114	70-135			
o-Terpheny	1		59.1	49.9	118	70-135			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders:
 557206, 557206
 Project ID:

 Lab Batch #:
 3022004
 Sample:
 557206-041 / SMP
 Batch:
 1
 Matrix:
 Soil

Units: mg/kg Date Analyzed: 07/11/17 18:	46 SI	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	112	99.7	112	70-135				
o-Terphenyl	57.9	49.9	116	70-135				

Date Analyzed: 07/11/17 18:48 **Units:** mg/kg SURROGATE RECOVERY STUDY **Amount** True Control BTEX by EPA 8021B Found Limits Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0268 0.0300 89 80-120 4-Bromofluorobenzene 0.0292 0.0300 97 80-120

Units: mg/kg Date Analyzed: 07/11/17 19:05 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 3022004 **Sample:** 557206-046 / SMP **Batch:** 1 **Matrix:** Soil

Units:	mg/kg	Date Analyzed: 07/11/17 19:06	SURROGATE RECOVERY STUDY					
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooct	ane		108	99.8	108	70-135		
o-Terpheny	1		56.2	49.9	113	70-135		

Units: mg/l	Date Analyzed: 07/11/17 19:20	SURROGATE RECOVERY STUDY					
	BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene		0.0296	0.0300	99	80-120		
4-Bromofluorobenze	ne	0.0343	0.0300	114	80-120		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders:
 557206, 557206
 Project ID:

 Lab Batch #:
 3022018
 Sample:
 557206-024 / SMP
 Batch:
 1
 Matrix:
 Soil

Units: mg/kg Date Analyzed: 07/11/17 19:36	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0328	0.0300	109	80-120			
4-Bromofluorobenzene	0.0293	0.0300	98	80-120			

Units:	mg/kg	Date Analyzed: 07/11/17 19:53	SURROGATE RECOVERY STUDY					
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
		Analytes			[2]			
1,4-Difluore	obenzene		0.0317	0.0300	106	80-120		
4-Bromoflu	orobenzene		0.0274	0.0300	91	80-120		

Units: mg/kg Date Analyzed: 07/11/17 20:41 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Units:	mg/kg	Date Analyzed: 07/11/17 21:14	SURROGATE RECOVERY STUDY					
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluore	obenzene		0.0259	0.0300	86	80-120		
4-Bromofluorobenzene			0.0341	0.0300	114	80-120		

Units:	mg/kg	Date Analyzed: 07/11/17 21:30	SURROGATE RECOVERY STUDY					
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobe	enzene	Timery tes	0.0247	0.0300	82	80-120		
4-Bromofluorobenzene			0.0253	0.0300	84	80-120		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders:
 557206, 557206
 Project ID:

 Lab Batch #:
 3022018
 Sample:
 557206-006 / SMP
 Batch:
 1
 Matrix:
 Soil

Units: mg/kg Date Analyzed: 07/12/17 07:39 SURROGATE RECOVERY STUDY								
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1,4-Difluorobenzene			0.0320	0.0300	107	80-120		
4-Bromofluorobenzene			0.0305	0.0300	102	80-120		

Lab Batch #: 3022018 Sample: 557206-011 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/12/17 07:56	SURROGATE RECOVERY STUDY					
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1,4-Difluor	obenzene		0.0288	0.0300	96	80-120		
4-Bromoflu	uorobenzene		0.0296	0.0300	99	80-120		

Units: mg/kg Date Analyzed: 07/12/17 08:12 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 3022004 Sample: 727483-1-BLK / BLK Batch: 1 Matrix: Solid

Units:	mg/kg	Date Analyzed: 07/11/17 12:00	SURROGATE RECOVERY STUDY					
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooct	ane		114	100	114	70-135		
o-Terpheny			59.6	50.0	119	70-135		

Lab Batch #: 3022018 Sample: 727492-1-BLK / BLK Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/11/17 17:11 SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
1,4-Difluorobenzene	0.0297	0.0300	99	80-120				
4-Bromofluorobenzene	0.0316	0.0300	105	80-120				

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

Work Orders: 557206, 557206 **Project ID: Lab Batch #:** 3022004 **Sample:** 727483-1-BKS / BKS Batch: 1 Matrix: Solid

Units:	mg/kg	Date Analyzed: 07/11/17 12:41	SURROGATE RECOVERY STUDY								
	TPH 1	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
		Analytes			[2]						
1-Chlorooct	ane		123	100	123	70-135					
o-Terphenyl			62.5	50.0	125	70-135					

Lab Batch #: 3022018 **Sample:** 727492-1-BKS / BKS Batch: 1 Matrix: Solid

Units:	mg/kg	Date Analyzed: 07/11/17 15:46	SURROGATE RECOVERY STUDY									
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluor	obenzene	-	0.0240	0.0300	80	80-120						
4-Bromoflu	iorobenzene		0.0266	0.0300	89	80-120						

Lab Batch #: 3022004 **Sample:** 727483-1-BSD / BSD Matrix: Solid Batch: 1

Units: mg/kg Date Analyzed: 07/11/17 13:02 SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	62.1	50.0	124	70-135	

Sample: 727492-1-BSD / BSD **Lab Batch #:** 3022018 Batch: 1 Matrix: Solid

Units:	mg/kg	Date Analyzed: 07/11/17 16:02	SURROGATE RECOVERY STUDY									
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluor	obenzene		0.0307	0.0300	102	80-120						
4-Bromoflu	orobenzene		0.0353	0.0300	118	80-120						

Lab Batch #: 3022004 **Sample:** 557206-001 S / MS Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/11/17 13:42	SURROGATE RECOVERY STUDY									
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooct	ane		111	100	111	70-135						
o-Terphenyl			57.1	50.0	114	70-135						

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders: 557206, 557206
 Project ID:

 Lab Batch #: 3022018
 Sample: 557206-040 S / MS
 Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 07/11/17 16:18	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1,4-Difluorobenzene	0.0308	0.0300	103	80-120					
4-Bromofluorobenzene	0.0345	0.0300	115	80-120					

Lab Batch #: 3022004 Sample: 557206-001 SD / MSD Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/11/17 14:03	SURROGATE RECOVERY STUDY								
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooct	tane	-	129	99.8	129	70-135					
o-Terpheny	1		64.4	49.9	129	70-135					

Units: mg/kg Date Analyzed: 07/11/17 16:34 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B **Found** Limits Flags Amount Recovery [B] %R %R [A] [D] **Analytes** 1,4-Difluorobenzene 0.0329 0.0300 110 80-120 4-Bromofluorobenzene 0.0334 0.0300 111 80-120

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206, 557206 **Project ID:**

 Analyst:
 ALJ
 Date Prepared:
 07/11/2017
 Date Analyzed:
 07/11/2017

 Lab Batch ID: 3022018
 Sample: 727492-1-BKS
 Batch #: 1
 Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes Benzene	<0.00200	0.100	0.115	115	0.0998	0.121	121	5	70-130	35	
Toluene	<0.00200	0.100	0.113	111	0.0998	0.121	108	3	70-130	35	
Ethylbenzene	<0.00200	0.100	0.115	115	0.0998	0.118	118	3	71-129	35	
m,p-Xylenes	< 0.00401	0.200	0.206	103	0.200	0.205	103	0	70-135	35	
o-Xylene	< 0.00200	0.100	0.114	114	0.0998	0.120	120	5	71-133	35	

Analyst: MGO Date Prepared: 07/11/2017 Date Analyzed: 07/11/2017

Lab Batch ID: 3022023 Sample: 727493-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 5.00	250	258	103	250	254	102	2	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206, 557206 **Project ID:**

Analyst: MGO Date Prepared: 07/12/2017 Date Analyzed: 07/12/2017

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	258	103	250	259	104	0	90-110	20	

Analyst: MGO **Date Prepared:** 07/12/2017 **Date Analyzed:** 07/12/2017

Lab Batch ID: 3022113 **Sample:** 727554-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 5.00	250	262	105	250	263	105	0	90-110	20	

Analyst: ARM **Date Prepared:** 07/11/2017 **Date Analyzed:** 07/11/2017

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1150	115	1000	1100	110	4	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1120	112	1000	1100	110	2	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206 Project ID:

Lab Batch ID: 3022018 **QC- Sample ID:** 557206-040 S **Batch #:** 1 **Matrix:** Soil

 Date Analyzed:
 07/11/2017
 Date Prepared:
 07/11/2017
 Analyst:
 ALJ

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.103	102	0.100	0.119	119	14	70-130	35	
Toluene	< 0.00202	0.101	0.0942	93	0.100	0.103	103	9	70-130	35	
Ethylbenzene	< 0.00202	0.101	0.101	100	0.100	0.118	118	16	71-129	35	
m,p-Xylenes	< 0.00403	0.202	0.181	90	0.200	0.203	102	11	70-135	35	
o-Xylene	< 0.00202	0.101	0.0996	99	0.100	0.110	110	10	71-133	35	

Lab Batch ID: 3022023 **QC- Sample ID:** 557206-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/11/2017 **Date Prepared:** 07/11/2017 **Analyst:** MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	107	247	378	110	247	387	113	2	90-110	20	X

Lab Batch ID: 3022023 **QC- Sample ID:** 557206-040 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/11/2017 Date Prepared: 07/11/2017 Analyst: MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	9.98	250	284	110	250	286	110	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference RPD = 200*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E



Form 3 - MS / MSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206 Project ID:

Lab Batch ID: 3022109 **QC- Sample ID:** 557206-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/12/2017 **Date Prepared:** 07/12/2017 **Analyst:** MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	%R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Chloride	16.4	250	273	103	250	275	103	1	90-110	20	

Lab Batch ID: 3022109 **QC- Sample ID:** 557206-016 S **Batch #:** 1 **Matrix:** Soil

 Date Analyzed:
 07/12/2017
 Date Prepared:
 07/12/2017
 Analyst:
 MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.39	250	270	105	250	269	105	0	90-110	20	

Lab Batch ID: 3022113 **QC- Sample ID:** 557206-031 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/12/2017 Date Prepared: 07/12/2017 Analyst: MGO

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	302	248	554	102	248	550	100	1	90-110	20	



Form 3 - MS / MSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206 Project ID:

Lab Batch ID: 3022113 **QC- Sample ID:** 557206-044 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/12/2017 **Date Prepared:** 07/12/2017 **Analyst:** MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	10.4	249	279	108	249	274	106	2	90-110	20	

Lab Batch ID: 3022004 **QC- Sample ID:** 557206-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/11/2017 **Date Prepared:** 07/11/2017 **Analyst:** ARM

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1030	103	998	1060	106	3	70-135	35	
Diesel Range Organics (DRO)	21.2	1000	1000	98	998	1070	105	7	70-135	35	

Final 1.001

(6-23: +0.2°C) Corrected Temp:

Page

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		Date: Time:	Louis, lime:	1	Date: Time:	Trench #4 (2")	Trench #4 (0-1')	Trench #3 (8')	Trench #3 (6')	Irench #3 (4')	Irench #3 (2')	rench #3 (1')	Trench #3 (0-1')	Trank #2 (8)	00 h 40 / 00	SAMPLE IDENTIFICATION		Kush	Xenco Midland Tx	Tetra Tech	Lea County, New Mexico	Gounty.	102 1 McKery	1	Tetra Tech, Inc.	
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Temp: 7, 0 CF:(0-6: -0.2°C) (6-23: +0.2°C) Corrected Temp: 2	Date: Time:	П	Date: Time:	17	Date: Time:		×	×	×	×	×	×	×	×	WATER SOIL HCL HNO ₃ ICE None	3	MATRIX PRESERVATIVE METHOD						Ike Tavarez		4000 N. Big Spring Street, Ste 401 Midland, Texas 79705 Tel (432) 682-4559 Fay 1479 682-7405	
IR ID:R-8			Sample Temperature	(I) LAB USE ONLY		Z	Z	-1 Z		Z		Z	1 N	Ş	# CONTA FILTERE BTEX 80: TPH TX1 TPH 801: PAH 8270 Total Meta	21B) 005 (5M (0	BTEX Ext to GRO -	035) DRO - 0	RO - N							
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TCLP Metals Ag As Ba Cd Cr Pb Se Hg TCLP Volatiles TCLP Semi Volatiles
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UPS	Repo	San	STANDARD		-	+	+	1	1	1	1	1	_	GC/MS Se PCB's 808			70C/625					3	RE	/	1
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ORIGINAL COPY	Received by:	Heceived by:	-	Refeired hy	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	DATE	YEAR: 2017	SAMPLING		Sampler Signature:		Project #:		one manager.		
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of

Corrected Temp: 5.0

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TCLP Semi Volatiles	TCLP Semi Volatiles RCI RCI Special Report Limits or TRRP Report Limits or TRRP Report FEDEX UPS Tracking #: TCLP Semi Volatiles RCI GC/MS Vol. 8260B / 624 GC/MS Semi. Vol. 8270C/625 PCB's 8082 / 608 NORM PLM (Asbestos) X X X X X X X X X X X X X Chloride Chloride Sulfate TDS General Water Chemistry (see attached list) Anion/Cation Balance	ND DELIVER	perature	EONLY							3			Т	otal Metals A						(Circi		5
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	r: Date: Time:	Date: Time:	May 711 7 10.40				Trench #7 (6')	Trench #7 (4')	Trench #7 (2')	Trench #7 (1')	Trench #/ (0-1')	1	SAMPLE IDENTIFICATION		Kush	Xenco Midland Tx	Tetra Tech	n: (county, Lea County, New Mexico	1	EOG / Det forse and	Tetra Tech, Inc.	
ORIGINAL COPY	Received by:	Received by:	Received by:			7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	DATE	YEAR: 2017	SAMPLING		Sampler Signature:		Project #:		Site Manager:		
Temp: CF:(0-6: -0.2°C) (6-23: +0.2°C) Corrected Temp:	Date:	Date:	Date:			×	×	×	×	×	×	WATEF SOIL HCL HNO ₃	1	MATRIX						Ike Tavarez	4000 N. Big Spring Street, Ste 401 Midland, Texas 79705 Tel (422) 882-4559 Fax (432) 682-3946	
190 J. IR ID:R-8	Time:	Time:	Time: 10:20			×	×	×	×	×	×	ICE None # CONTA	AINE	PRESERVATIVE S							Street, Ste xas 79705 -4559 -3946	
AND DELIVERED		Sample Temperature	LAB USE ONLY		×					×	FILTERED (*) BTEX 8021B TPH TX1005 TPH 8015M PAH 8270C Total Metals A		Ext to GRO -	C35) DRO - O	RO - N	lg .		(Circle		SS		
- I	Rush Charges Authorized Special Report Limits or T	IA	REMARKS:									TCLP Met TCLP Vola TCLP Sem RCI GC/MS Va GC/MS Se PCB's 808	atiles ni Vo ol. 82 emi. V	olatiles 260B / 6 Vol. 82	524		нg		tle or Specify Method	ANALYSIS REQUEST	7208	6
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	4	72 hr					,		.	Page	37	ofi-38					Fina	al 1.00	- - -			5 of



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland

Work Order #: 557206

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Date/ Time Received: 07/11/2017 10:37:00 AM

Temperature Measuring device used: R8

\$	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		5	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seal present on shipping contain	ner/ cooler?	No	
#5 *Custody Seals intact on shipping contained	er/ cooler?	N/A	
#6 Custody Seals intact on sample bottles?		N/A	
#7 *Custody Seals Signed and dated?		N/A	
#8 *Chain of Custody present?		Yes	
#9 Sample instructions complete on Chain of	Custody?	Yes	
#10 Any missing/extra samples?		No	
#11 Chain of Custody signed when relinquish	ed/ received?	Yes	
#12 Chain of Custody agrees with sample lab	el(s)?	Yes	
#13 Container label(s) legible and intact?		Yes	
#14 Sample matrix/ properties agree with Cha	ain of Custody?	Yes	
#15 Samples in proper container/ bottle?		Yes	
#16 Samples properly preserved?		Yes	
#17 Sample container(s) intact?		Yes	
#18 Sufficient sample amount for indicated te	st(s)?	Yes	
#19 All samples received within hold time?		Yes	
#20 Subcontract of sample(s)?		No	
#21 VOC samples have zero headspace?		N/A	

Must be completed for after-hours de	elivery of samples prior to placin	ng in the refrigerator
Analyst: ss	PH Device/Lot#:	
Checklist completed by:	Shauree SynAto	Date: 07/11/2017
	Shawnee Smith	
Checklist reviewed by:	Mike Kimmel	Date: 07/11/2017

Analytical Report 557206

for Tetra Tech- Midland

Project Manager: Ike Tavarez
Beowulf 33 State Com 601H

14-JUL-17

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





14-JUL-17

Project Manager: **Ike Tavarez Tetra Tech- Midland**4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **557206 Beowulf 33 State Com 601H**

Project Address: Lea County, New Mexico

Ike Tavarez:

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) 557206. 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. 557206 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks

Knus Hoah

Project Manager

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 557206



Tetra Tech- Midland, Midland, TX

Beowulf 33 State Com 601H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench #1 (0-1')	S	07-10-17 00:00		557206-001
Trench #1 (2')	S	07-10-17 00:00		557206-002
Trench #1 (4')	S	07-10-17 00:00		557206-003
Trench #1 (6')	S	07-10-17 00:00		557206-004
Trench #1 (8')	S	07-10-17 00:00		557206-005
Trench #2 (0-1')	S	07-10-17 00:00		557206-006
Trench #2 (1')	S	07-10-17 00:00		557206-007
Trench #2 (2')	S	07-10-17 00:00		557206-008
Trench #2 (4')	S	07-10-17 00:00		557206-009
Trench #2 (6')	S	07-10-17 00:00		557206-010
Trench #2 (8')	S	07-10-17 00:00		557206-011
Trench #3 (0-1')	S	07-10-17 00:00		557206-012
Trench #3 (1')	S	07-10-17 00:00		557206-013
Trench #3 (2')	S	07-10-17 00:00		557206-014
Trench #3 (4')	S	07-10-17 00:00		557206-015
Trench #3 (6')	S	07-10-17 00:00		557206-016
Trench #3 (8')	S	07-10-17 00:00		557206-017
Trench #4 (0-1')	S	07-10-17 00:00		557206-018
Trench #4 (1')	S	07-10-17 00:00		557206-019
Trench #4 (2')	S	07-10-17 00:00		557206-020
Trench #4 (4')	S	07-10-17 00:00		557206-021
Trench #4 (6')	S	07-10-17 00:00		557206-022
Trench #4 (8')	S	07-10-17 00:00		557206-023
Trench #4 (10')	S	07-10-17 00:00		557206-024
Trench #5 (0-1')	S	07-10-17 00:00		557206-025
Trench #5 (1')	S	07-10-17 00:00		557206-026
Trench #5 (2')	S	07-10-17 00:00		557206-027
Trench #5 (4')	S	07-10-17 00:00		557206-028
Trench #5 (6')	S	07-10-17 00:00		557206-029
Trench #5 (12')	S	07-10-17 00:00		557206-032
Trench #5 (14')	S	07-10-17 00:00		557206-033
Trench #6 (0-1')	S	07-10-17 00:00		557206-034
Trench #6 (10')	S	07-10-17 00:00		557206-040
Trench #7 (0-1')	S	07-10-17 00:00		557206-041
Trench #7 (8')	S	07-10-17 00:00		557206-046
Trench #5 (8')	S	07-10-17 00:00		Not Analyzed
Trench #5 (10')	S	07-10-17 00:00		Not Analyzed
Trench #6 (1')	S	07-10-17 00:00		Not Analyzed
Trench #6 (2')	S	07-10-17 00:00		Not Analyzed
Trench #6 (4')	S	07-10-17 00:00		Not Analyzed
Trench #6 (6')	S	07-10-17 00:00		Not Analyzed
Trench #6 (8')	S	07-10-17 00:00		Not Analyzed
Trench #7 (1')	S	07-10-17 00:00		Not Analyzed



Sample Cross Reference 557206



Tetra Tech- Midland, Midland, TX

Beowulf 33 State Com 601H

Trench #7 (2')	S	07-10-17 00:00	Not Analyzed
Trench #7 (4')	S	07-10-17 00:00	Not Analyzed
Trench #7 (6')	S	07-10-17 00:00	Not Analyzed

XENCO

CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Beowulf 33 State Com 601H

Project ID: Report Date: 14-JUL-17
Work Order Number(s): 557206

Report Date: 07/11/2017

Sample receipt non conformances and comments:

07/12/17: Per Jeanne Finch, run Chlorides that were originally marked on the COC on hold.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3022018 BTEX by EPA 8021B

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

Batch: LBA-3022023 Inorganic Anions by EPA 300/300.1

Lab Sample ID 557206-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 557206-001, -005, -006, -011, -012, -017, -018, -024, -025, -033, -034, -040, -041, -046.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id:

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 14-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557206-0	001	557206-0	02	557206-0	03	557206-0	004	557206-	005	557206-	006
A suplimin D a sus and a I	Field Id:	Trench #1 ((0-1')	Trench #1	(2')	Trench #1	(4')	Trench #1	(6')	Trench #1	1 (8')	Trench #2	(0-1')
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-10-17 (00:00	Jul-10-17 0	0:00	Jul-10-17 0	0:00	Jul-10-17 (00:00	Jul-10-17	00:00	Jul-10-17	00:00
BTEX by EPA 8021B	Extracted:	Jul-11-17	16:00							Jul-11-17	16:00	Jul-11-17	16:00
	Analyzed:	Jul-11-17	17:44							Jul-11-17	18:00	Jul-12-17	07:39
	Units/RL:	mg/kg	RL							mg/kg	RL	mg/kg	RL
Benzene		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Toluene		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Ethylbenzene		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
m,p-Xylenes		< 0.00398	0.00398							< 0.00401	0.00401	< 0.00702	0.00702
o-Xylene		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Total Xylenes		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Total BTEX		< 0.00199	0.00199							< 0.00200	0.00200	< 0.00351	0.00351
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-11-17	17:00	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-11-17	17:00	Jul-11-17	17:00
	Analyzed:	Jul-11-17	18:00	Jul-12-17 1	4:35	Jul-12-17 1	4:58	Jul-12-17 1	5:14	Jul-11-17	17:37	Jul-11-17	18:08
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1540	24.6	16.4	5.00	17.9	5.00	18.4	5.00	107	4.93	781	4.96
TPH By SW8015 Mod	Extracted:	Jul-11-17	11:00							Jul-11-17	11:00	Jul-11-17	11:00
	Analyzed:	Jul-11-17	13:22							Jul-11-17	14:23	Jul-11-17	14:44
	Units/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
Diesel Range Organics (DRO)		21.2	15.0							<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0							<15.0	15.0	<15.0	15.0
Total TPH		21.2	15.0							<15.0	15.0	<15.0	15.0

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Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id: Contact:

Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 14-JUL-17

Project Manager: Kelsey Brooks

	Lab Id:	557206-0	007	557206-0	08	557206-0	09	557206-0	10	557206-	011	557206-	012
Analysis Requested	Field Id:	Trench #2	(1')	Trench #2	(2')	Trench #2	(4')	Trench #2	(6')	Trench #2	2 (8')	Trench #3	(0-1')
Anulysis Requesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	SOIL	
	Sampled:	Jul-10-17 0	00:00	Jul-10-17 0	0:00	Jul-10-17 0	0:00	Jul-10-17 0	0:00	Jul-10-17	00:00	Jul-10-17	00:00
BTEX by EPA 8021B	Extracted:									Jul-11-17	16:00	Jul-11-17	16:00
	Analyzed:									Jul-12-17	07:56	Jul-11-17	18:48
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene										< 0.00344	0.00344	< 0.00202	0.00202
Toluene										< 0.00344	0.00344	< 0.00202	0.00202
Ethylbenzene										< 0.00344	0.00344	< 0.00202	0.00202
m,p-Xylenes										< 0.00687	0.00687	< 0.00404	0.00404
o-Xylene										< 0.00344	0.00344	< 0.00202	0.00202
Total Xylenes										< 0.00344	0.00344	< 0.00202	0.00202
Total BTEX										< 0.00344	0.00344	< 0.00202	0.00202
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 13	3:30	Jul-12-17 1	3:30	Jul-11-17	17:00	Jul-11-17	17:00
	Analyzed:	Jul-12-17 1	5:21	Jul-12-17 1	5:29	Jul-12-17 1	6:06	Jul-12-17 1	6:13	Jul-11-17	18:16	Jul-11-17	18:23
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1150	5.00	6.01	5.00	6.13	5.00	< 5.00	5.00	14.3	4.98	2600	25.0
TPH By SW8015 Mod	Extracted:									Jul-11-17	11:00	Jul-11-17	11:00
	Analyzed:									Jul-11-17	15:04	Jul-11-17	15:25
	Units/RL:									mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)										<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)										<14.9	14.9	<15.0	15.0
Oil Range Hydrocarbons (ORO)										<14.9	14.9	<15.0	15.0
Total TPH										<14.9	14.9	<15.0	15.0

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Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id: Contact:

Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 14-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557206-0	013	557206-0	14	557206-0	015	557206-0	016	557206-	017	557206-	018
Analysis Requested	Field Id:	Trench #3	(1')	Trench #3	(2')	Trench #3	(4')	Trench #3	(6')	Trench #3	3 (8')	Trench #4	(0-1')
mutysis Requesicu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	SOIL	_
	Sampled:	Jul-10-17 0	00:00	Jul-10-17 0	0:00	Jul-10-17 (00:00	Jul-10-17 0	00:00	Jul-10-17	00:00	Jul-10-17	00:00
BTEX by EPA 8021B	Extracted:									Jul-11-17	16:00	Jul-11-17	16:00
	Analyzed:									Jul-11-17	19:05	Jul-11-17	19:20
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene										< 0.00200	0.00200	< 0.00201	0.00201
Toluene										< 0.00200	0.00200	< 0.00201	0.00201
Ethylbenzene										< 0.00200	0.00200	< 0.00201	0.00201
m,p-Xylenes										< 0.00401	0.00401	< 0.00402	0.00402
o-Xylene										< 0.00200	0.00200	< 0.00201	0.00201
Total Xylenes										< 0.00200	0.00200	< 0.00201	0.00201
Total BTEX										< 0.00200	0.00200	< 0.00201	0.00201
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-11-17	17:00	Jul-11-17	17:00
	Analyzed:	Jul-12-17 1	6:21	Jul-12-17 1	6:29	Jul-12-17 1	6:37	Jul-12-17 1	6:44	Jul-11-17	18:46	Jul-11-17	18:54
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2750	25.0	67.3	5.00	7.90	5.00	6.39	5.00	11.8	4.94	3830	24.9
TPH By SW8015 Mod	Extracted:									Jul-11-17	11:00	Jul-11-17	11:00
	Analyzed:									Jul-11-17	15:46	Jul-11-17	16:06
	Units/RL:									mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	·									<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)										<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)										<15.0	15.0	<15.0	15.0
Total TPH										<15.0	15.0	<15.0	15.0

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Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id: Contact:

Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 14-JUL-17 **Project Manager:** Kelsey Brooks

			1										
	Lab Id:	557206-0)19	557206-0	20	557206-0	21	557206-0	22	557206-0	23	557206-0	024
Analysis Requested	Field Id:	Trench #4	(1')	Trench #4	(2')	Trench #4	(4')	Trench #4	(6')	Trench #4	(8')	Trench #4	(10')
Anaiysis Requesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-10-17 (00:00	Jul-10-17 0	0:00	Jul-10-17 (00:00						
BTEX by EPA 8021B	Extracted:											Jul-11-17 1	6:00
	Analyzed:											Jul-11-17 1	9:36
	Units/RL:											mg/kg	RL
Benzene												< 0.00198	0.00198
Toluene												< 0.00198	0.00198
Ethylbenzene												< 0.00198	0.00198
m,p-Xylenes												< 0.00396	0.00396
o-Xylene												< 0.00198	0.00198
Total Xylenes												< 0.00198	0.00198
Total BTEX												< 0.00198	0.00198
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-12-17 1	3:30	Jul-11-17 1	7:00
	Analyzed:	Jul-12-17 1	7:07	Jul-12-17 1	7:15	Jul-12-17 1	7:38	Jul-12-17 1	7:46	Jul-12-17 1	7:53	Jul-11-17 1	9:02
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3080	25.0	1380	25.0	252	4.95	35.9	4.94	108	4.91	26.8	4.99
TPH By SW8015 Mod	Extracted:											Jul-11-17 1	1:00
	Analyzed:											Jul-11-17 1	6:27
	Units/RL:											mg/kg	RL
Gasoline Range Hydrocarbons (GRO)												<15.0	15.0
Diesel Range Organics (DRO)												<15.0	15.0
Oil Range Hydrocarbons (ORO)												<15.0	15.0
Total TPH												<15.0	15.0

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Kelsey Brooks Project Manager

Knis Roah



Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H

TNI CABORATORA

Project Id:

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 14-JUL-17 **Project Manager:** Kelsey Brooks

			1						1				
	Lab Id:	557206-0)25	557206-0)26	557206-0)27	557206-0)28	557206-0)29	557206-0	32
Analysis Requested	Field Id:	Trench #5 ((0-1')	Trench #5	(1')	Trench #5	(2')	Trench #5	(4')	Trench #5	(6')	Trench #5	(12')
Anaiysis Kequesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-10-17 (00:00	Jul-10-17 0	00:00	Jul-10-17 0	00:00	Jul-10-17 (00:00	Jul-10-17 0	00:00	Jul-10-17 0	00:00
BTEX by EPA 8021B	Extracted:	Jul-11-17	16:00										
	Analyzed:	Jul-11-17	19:53										
	Units/RL:	mg/kg	RL										
Benzene		< 0.00201	0.00201										
Toluene		< 0.00201	0.00201										
Ethylbenzene		< 0.00201	0.00201										
m,p-Xylenes		< 0.00402	0.00402										
o-Xylene		< 0.00201	0.00201										
Total Xylenes		< 0.00201	0.00201										
Total BTEX		< 0.00201	0.00201										
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-11-17	17:00	Jul-12-17 1	3:30	Jul-13-17 1	2:30						
	Analyzed:	Jul-11-17	19:09	Jul-12-17 1	8:01	Jul-12-17 1	8:09	Jul-12-17 1	8:16	Jul-12-17 1	8:24	Jul-13-17 1	8:06
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5030	49.5	3370	24.8	2340	24.8	875	5.00	399	4.99	568	4.96
TPH By SW8015 Mod	Extracted:	Jul-11-17	11:00										
	Analyzed:	Jul-11-17	16:47										
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)	·	<15.0	15.0										
Diesel Range Organics (DRO)		187	15.0										
Oil Range Hydrocarbons (ORO)		<15.0	15.0										
Total TPH		187	15.0			<u> </u>						<u> </u>	

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Tetra Tech- Midland, Midland, TX

Project Name: Beowulf 33 State Com 601H



Project Id:

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-11-17 10:37 am

Report Date: 14-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557206-0	22	557206-0	12.4	557206-0	10	557206)41	557206 (046	
								557206-0		557206-0		
Analysis Requested	Field Id:	Trench #5	(14')	Trench #6 (0-1')	Trench #6	(10')	Trench #7	(0-1')	Trench #7	(8')	
Titulysis Requesicu	Depth:											
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	
	Sampled:	Jul-10-17 (00:00									
BTEX by EPA 8021B	Extracted:	Jul-11-17	16:00	Jul-11-17 1	6:00	Jul-11-17 1	6:00	Jul-11-17	6:00	Jul-11-17	16:00	
	Analyzed:	Jul-11-17 2	20:41	Jul-12-17 0	8:12	Jul-11-17 1	7:27	Jul-11-17 2	21:14	Jul-11-17 2	21:30	
	Units/RL:	mg/kg	RL									
Benzene		< 0.00202	0.00202	< 0.00337	0.00337	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199	
Toluene		< 0.00202	0.00202	< 0.00337	0.00337	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199	
Ethylbenzene		< 0.00202	0.00202	< 0.00337	0.00337	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199	
m,p-Xylenes		< 0.00404	0.00404	< 0.00673	0.00673	< 0.00401	0.00401	< 0.00401	0.00401	< 0.00398	0.00398	
o-Xylene		< 0.00202	0.00202	< 0.00337	0.00337	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199	
Total Xylenes		< 0.00202	0.00202	< 0.00337	0.00337	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199	
Total BTEX		< 0.00202	0.00202	< 0.00337	0.00337	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199	
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-11-17	17:00	Jul-11-17 1	7:00	Jul-11-17 1	7:00	Jul-11-17	7:00	Jul-11-17	17:00	
	Analyzed:	Jul-11-17	19:17	Jul-11-17 1	9:48	Jul-11-17 1	9:25	Jul-11-17	9:55	Jul-11-17 2	20:18	
	Units/RL:	mg/kg	RL									
Chloride		98.5	4.97	2030	24.9	9.98	4.99	1200	24.9	44.0	4.99	
TPH By SW8015 Mod	Extracted:	Jul-11-17	11:00	Jul-11-17 1	1:00	Jul-11-17 1	1:00	Jul-11-17	1:00	Jul-11-17	11:00	
	Analyzed:	Jul-11-17	17:07	Jul-11-17 1	8:07	Jul-11-17 1	8:26	Jul-11-17	8:46	Jul-11-17	19:06	
	Units/RL:	mg/kg	RL									
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	66.0	15.0	<15.0	15.0	
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	
Total TPH		<15.0	15.0	<14.9	14.9	<15.0	15.0	66.0	15.0	<15.0	15.0	

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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

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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Project Name: Beowulf 33 State Com 601H

 Work Orders: 557206,
 Project ID:

 Lab Batch #: 3022004
 Sample: 557206-001 / SMP
 Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/11/17 13:22	SU	RROGATE RI	ECOVERY S	STUDY	
	TPH 1	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	ane		114	99.8	114	70-135	
o-Terphenyl			58.7	49.9	118	70-135	

Lab Batch #: 3022004 **Sample:** 557206-005 / SMP **Batch:** 1 **Matrix:** Soil

Units:	mg/kg	Date Analyzed: 07/11/17/14:23	SU	RROGATE RI	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc	etane		111	99.7	111	70-135	
o-Terpheny	/1		57.0	49.9	114	70-135	

Lab Batch #: 3022004 **Sample:** 557206-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg Date Analyzed: 07/11/17 14:44 SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.7	109	70-135	
o-Terphenyl	55.8	49.9	112	70-135	

Lab Batch #: 3022004 Sample: 557206-011 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/11/17 15:04	SU	RROGATE RI	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		111	99.6	111	70-135	
o-Terpheny	1		56.6	49.8	114	70-135	

Units:	mg/kg	Date Analyzed: 0//11/17 15:25	SU	RROGATE RI	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chloroocta	ane		127	99.9	127	70-135	
o-Terphenyl			64.9	50.0	130	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders: 557206,
 Project ID:

 Lab Batch #: 3022004
 Sample: 557206-017 / SMP
 Batch: 1 Matrix: Soil

Units:	Units: mg/kg Date Analyzed: 07/11/17 15:46 SURROGATE RECOVERY STUDY									
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
		Analytes			[2]					
1-Chlorooct	ane		120	99.9	120	70-135				
o-Terphenyl			62.1	50.0	124	70-135				

Lab Batch #: 3022004 **Sample:** 557206-018 / SMP **Batch:** 1 **Matrix:** Soil

Units:	nits: mg/kg Date Analyzed: 07/11/17 16:06 SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]					
1-Chlorooc	tane		113	100	113	70-135				
o-Terpheny	1		58.7	50.0	117	70-135				

Lab Batch #: 3022004 **Sample:** 557206-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg Date Analyzed: 07/11/17 16:27 SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	57.9	49.9	116	70-135	

Units:	mg/kg	Date Analyzed: 07/11/17 16:47	SURROGATE RECOVERY STUDY						
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	ane		112	99.9	112	70-135			
o-Terpheny			57.4	50.0	115	70-135			

Units: mg/kg Date Analyzed: 0//11/17 17:07 SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chloroocta	ane		110	99.8	110	70-135			
o-Terphenyl			57.5	49.9	115	70-135			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders: 557206,
 Project ID:

 Lab Batch #: 3022018
 Sample: 557206-040 / SMP
 Batch: 1 Matrix: Soil

Units:	its: mg/kg Date Analyzed: 07/11/17 17:27 SURROGATE RECOVERY STUDY										
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
1,4-Difluoro	benzene	0.0255	0.0300	85	80-120						
4-Bromoflu	probenzene	0.0344	0.0300	115	80-120						

Lab Batch #: 3022018 Sample: 557206-001 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/11/17 17:44	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluor	obenzene		0.0311	0.0300	104	80-120			
4-Bromofluorobenzene			0.0295	0.0300	98	80-120			

Units: mg/kg Date Analyzed: 07/11/17 18:00 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 3022004 Sample: 557206-034 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/11/17 18:07	SURROGATE RECOVERY STUDY						
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	ane		111	99.6	111	70-135			
o-Terphenyl			57.3	49.8	115	70-135			

Units:	mg/kg	Date Analyzed: 07/11/17 18:26	SURROGATE RECOVERY STUDY						
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chloroocta	ane		114	99.7	114	70-135			
o-Terphenyl			59.1	49.9	118	70-135			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders: 557206,
 Project ID:

 Lab Batch #: 3022004
 Sample: 557206-041 / SMP
 Batch: 1
 Matrix: Soil

Units: mg/kg Date Analyzed: 07/11/17 18:46 SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]				
1-Chlorooct	ane		112	99.7	112	70-135			
o-Terphenyl			57.9	49.9	116	70-135			

Units:	mg/kg	Date Analyzed: 07/11/17 18:48	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluor	obenzene		0.0268	0.0300	89	80-120			
4-Bromofluorobenzene			0.0292	0.0300	97	80-120			

Units: mg/kg Date Analyzed: 07/11/17 19:05 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 3022004 **Sample:** 557206-046 / SMP **Batch:** 1 **Matrix:** Soil

Units:	mg/kg	Date Analyzed: 07/11/17 19:06	SURROGATE RECOVERY STUDY						
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	ane		108	99.8	108	70-135			
o-Terpheny	1		56.2	49.9	113	70-135			

Units:	mg/kg	Date Analyzed: 07/11/17 19:20	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorol	benzene		0.0296	0.0300	99	80-120			
4-Bromofluorobenzene			0.0343	0.0300	114	80-120			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders: 557206,
 Project ID:

 Lab Batch #: 3022018
 Sample: 557206-024 / SMP
 Batch: 1 Matrix: Soil

Units:	nits: mg/kg Date Analyzed: 07/11/17 19:36 SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]				
1,4-Difluorobe	enzene		0.0328	0.0300	109	80-120			
4-Bromofluorobenzene			0.0293	0.0300	98	80-120			

Units:	mg/kg	Date Analyzed: 07/11/17 19:53	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluor	obenzene		0.0317	0.0300	106	80-120			
4-Bromofluorobenzene			0.0274	0.0300	91	80-120			

Units: mg/kg Date Analyzed: 07/11/17 20:41 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Units:	mg/kg	Date Analyzed: 07/11/17 21:14	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluore	obenzene		0.0259	0.0300	86	80-120			
4-Bromofluorobenzene			0.0341	0.0300	114	80-120			

Units:	mg/kg	Date Analyzed: 07/11/17 21:30	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobe	enzene	Timery tes	0.0247	0.0300	82	80-120			
4-Bromofluorobenzene			0.0253	0.0300	84	80-120			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders: 557206,
 Project ID:

 Lab Batch #: 3022018
 Sample: 557206-006 / SMP
 Batch: 1 Matrix: Soil

Units:	its: mg/kg Date Analyzed: 07/12/17 07:39 SURROGATE RECOVERY STUDY								
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluor	obenzene		0.0320	0.0300	107	80-120			
4-Bromofluorobenzene			0.0305	0.0300	102	80-120			

Lab Batch #: 3022018 Sample: 557206-011 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/12/17 07:56	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0288	0.0300	96	80-120			
4-Bromofluorobenzene			0.0296	0.0300	99	80-120			

Units: mg/kg Date Analyzed: 07/12/17 08:12 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 3022004 Sample: 727483-1-BLK / BLK Batch: 1 Matrix: Solid

Units:	mg/kg	Date Analyzed: 07/11/17 12:00	SURROGATE RECOVERY STUDY					
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1-Chlorooc	ctane		114	100	114	70-135		
o-Terpheny	yl		59.6	50.0	119	70-135		

Lab Batch #: 3022018 Sample: 727492-1-BLK / BLK Batch: 1 Matrix: Solid

Units:	mg/kg	Date Analyzed: 0//11/17/17:11	SU	RROGATE RI	ECOVERY S	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoro	benzene		0.0297	0.0300	99	80-120	
4-Bromofluo	orobenzene		0.0316	0.0300	105	80-120	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

Work Orders: 557206,
Lab Batch #: 3022004
Sample: 727483-1-BKS / BKS
Batch: 1 Matrix: Solid

Units:	mg/kg	Date Analyzed: 07/11/17 12:41	SU	SURROGATE RECOVERY STUDY									
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
		Analytes			[D]								
1-Chlorooct	ane		123	100	123	70-135							
o-Terphenyl	1		62.5	50.0	125	70-135							

Lab Batch #: 3022018 Sample: 727492-1-BKS / BKS Batch: 1 Matrix: Solid

Units:	mg/kg	Date Analyzed: 07/11/17 15:46	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluore	obenzene		0.0240	0.0300	80	80-120	
4-Bromoflu	4-Bromofluorobenzene		0.0266	0.0300	89	80-120	

Lab Batch #: 3022004 Sample: 727483-1-BSD / BSD Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 07/11/17 13:02 SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	62.1	50.0	124	70-135	

Lab Batch #: 3022018 Sample: 727492-1-BSD/BSD Batch: 1 Matrix: Solid

Units:	(nits: mg/kg Date Analyzed: 07/11/17 16:02			SURROGATE RECOVERY STUDY									
	ВТЕ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1,4-Difluoro	obenzene	Timury ees	0.0307	0.0300	102	80-120							
4-Bromofluorobenzene			0.0353	0.0300	118	80-120							

Units:	Units: mg/kg Date Analyzed: 07/11/17 13:42			SURROGATE RECOVERY STUDY								
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chloroocta	ane		111	100	111	70-135						
o-Terphenyl			57.1	50.0	114	70-135						

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Beowulf 33 State Com 601H

 Work Orders: 557206,
 Project ID:

 Lab Batch #: 3022018
 Sample: 557206-040 S / MS
 Batch: 1 Matrix: Soil

Units:	mg/kg	Date Analyzed: 07/11/17 16:18	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
		Analytes			[D]							
1,4-Difluoro	obenzene		0.0308	0.0300	103	80-120						
4-Bromofluorobenzene		0.0345	0.0300	115	80-120							

Lab Batch #: 3022004 **Sample:** 557206-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units:	mg/kg	Date Analyzed: 0//11/17/14:03	SURROGATE RECOVERY STUDY									
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
		Analytes			[D]							
1-Chlorooc	tane		129	99.8	129	70-135						
o-Terpheny	o-Terphenyl			49.9	129	70-135						

Units: mg/kg Date Analyzed: 07/11/17 16:34 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B **Found** Limits Flags Amount Recovery [B] %R %R [A] [D] **Analytes** 1,4-Difluorobenzene 0.0329 0.0300 110 80-120 4-Bromofluorobenzene 0.0334 0.0300 111 80-120

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206 Project ID:

Analyst: ALJ **Date Prepared:** 07/11/2017 **Date Analyzed:** 07/11/2017

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	< 0.00200	0.100	0.115	115	0.0998	0.121	121	5	70-130	35	
Toluene	< 0.00200	0.100	0.111	111	0.0998	0.108	108	3	70-130	35	
Ethylbenzene	< 0.00200	0.100	0.115	115	0.0998	0.118	118	3	71-129	35	
m,p-Xylenes	< 0.00401	0.200	0.206	103	0.200	0.205	103	0	70-135	35	
o-Xylene	< 0.00200	0.100	0.114	114	0.0998	0.120	120	5	71-133	35	

Analyst: MGO **Date Prepared:** 07/11/2017 **Date Analyzed:** 07/11/2017

Lab Batch ID: 3022023 Sample: 727493-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 5.00	250	258	103	250	254	102	2	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206 Project ID:

Analyst: MGO Date Prepared: 07/12/2017 Date Analyzed: 07/12/2017

Lab Batch ID: 3022109 Sample: 727553-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 5.00	250	258	103	250	259	104	0	90-110	20	

Analyst: MGO **Date Prepared:** 07/13/2017 **Date Analyzed:** 07/13/2017

Lab Batch ID: 3022302 **Sample:** 727632-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 5.00	250	255	102	250	256	102	0	90-110	20	

Analyst: ARM **Date Prepared:** 07/11/2017 **Date Analyzed:** 07/11/2017

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1150	115	1000	1100	110	4	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1120	112	1000	1100	110	2	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206 Project ID:

Lab Batch ID: 3022018 **QC- Sample ID:** 557206-040 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/11/2017 Date Prepared: 07/11/2017 Analyst: ALJ

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	result [1]	[G]	, •	/014	/ VIAL D	
Benzene	< 0.00202	0.101	0.103	102	0.100	0.119	119	14	70-130	35	
Toluene	< 0.00202	0.101	0.0942	93	0.100	0.103	103	9	70-130	35	
Ethylbenzene	< 0.00202	0.101	0.101	100	0.100	0.118	118	16	71-129	35	
m,p-Xylenes	< 0.00403	0.202	0.181	90	0.200	0.203	102	11	70-135	35	
o-Xylene	< 0.00202	0.101	0.0996	99	0.100	0.110	110	10	71-133	35	

Lab Batch ID: 3022023 **QC- Sample ID:** 557206-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/11/2017 **Date Prepared:** 07/11/2017 **Analyst:** MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	107	247	378	110	247	387	113	2	90-110	20	X

Lab Batch ID: 3022023 **QC- Sample ID:** 557206-040 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/11/2017 Date Prepared: 07/11/2017 Analyst: MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	9.98	250	284	110	250	286	110	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference RPD = 200*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E



Form 3 - MS / MSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206 Project ID:

Lab Batch ID: 3022109 **QC- Sample ID:** 557206-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/12/2017 **Date Prepared:** 07/12/2017 **Analyst:** MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	16.4	250	273	103	250	275	103	1	90-110	20	

Lab Batch ID: 3022109 **QC- Sample ID:** 557206-016 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/12/2017 Date Prepared: 07/12/2017 Analyst: MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.39	250	270	105	250	269	105	0	90-110	20	

Lab Batch ID: 3022302 **QC- Sample ID:** 557114-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/13/2017 Date Prepared: 07/13/2017 Analyst: MGO

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	99.7	249	362	105	249	364	106	1	90-110	20	

Final 1.002



Form 3 - MS / MSD Recoveries



Project Name: Beowulf 33 State Com 601H

Work Order #: 557206 Project ID:

Lab Batch ID: 3022302 **QC- Sample ID:** 557114-018 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/13/2017 **Date Prepared:** 07/13/2017 **Analyst:** MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	67.3	248	338	109	248	346	112	2	90-110	20	X

Lab Batch ID: 3022004 **QC- Sample ID:** 557206-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/11/2017 **Date Prepared:** 07/11/2017 **Analyst:** ARM

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1030	103	998	1060	106	3	70-135	35	
Diesel Range Organics (DRO)	21.2	1000	1000	98	998	1070	105	7	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Final 1.002

(6-23: +0.2°C) Corrected Temp:

Page

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Analysis Request of Chain of Custody Record

		elinquished by:		elinquished by:	elinquished by:	77 ::	7 =		1 =		1 =	1 =	1 =	1 -	(LAB USE)	LAB#			Comments:	Receiving Laboratory:	state)	Project Location:	Project Name:	Client Name:	
		Date: Time:	Cons. lille:	1	Date: Time:	Trench #4 (2")	Trench #4 (0-1)	Trench #4 (8')	Trench #3 (6')	Irench #3 (4')	I rench #3 (2')	Irench #3 (1')	I rench #3 (0-1')	rench #2 (8')		SAMPLE IDENTIFICATION		Kush	Xenco Midland Tx	Tetra Tech	Lea County, New Mexico	Beowulf 33 State Com 601H	Eva 1 DE 1 (Pickers)	Tena Tech, Inc.	Total Took Inc
ORIGINAL COPY	nacalved by.	Received hy:	Received by:	Maures	Received by:	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	DATE	YEAR: 2017	SAMPLING		Sampler Signature:		Project #:			Site Manager:	
Temp: 7, 0 CF:(0-6: -0.2°C) (6-23: +0.2°C) Corrected Temp: 4	Date: Time:	П	Date: Time:	17	Date: Time:		×	×	×	×	×	×	×	×	WATER SOIL HCL HNO ₃ ICE None		MATRIX PRESERVATIVE METHOD						Ike Tavarez	401 Midland, Faxas 79705 Tel (432) 682-4559 Fax (432) 682-3946	ADDO N. Bix Spring Street Sto
D . O . See			Sample To	YYO LAB U	1 Z	Z		Z		Z	Z	-1 Z	_ Z		# CONTA FILTEREI BTEX 802 TPH TX10	D (Y	(N) BTEX	C35)							
D DELIVERED FEDEX U	Special	Rush C	Sample Temperature	USE ONLY ST			*						*	3	TPH 8015 PAH 8270 Total Meta TCLP Meta TCLP Vola TCLP Sem RCI GC/MS Vol	Is Ag als Ag tiles	As Ba g As Ba atiles	Cd Cr F	b Se F	łg		(Circle or specify	ANAL	Ř	
UPS Tracking #:	Special Report Limits or TRRP Report	Rush Charges Authorized	Same Day 24 hr 48 hr	STANDARD	×	×	×	×	× >	< >	× >	× ;	× >	F C C C	GC/MS Ser PCB's 808 NORM PLM (Asbe Chloride Chloride General W	stos) Sulfater	08 fate Chem	TDS		ched lis	t)	ary Method No.)	REQUEST	1206	Page
	ort		72 hr		,	1			,			IP:	age		S 36					Fina	al 1.00				2 of .

Tetra Tech, Inc. Site Manager: Beowulf 33 State Com 601H			Relinquished by:	neiliquished by.	Relinquished by	Relinquished by										(LAB USE)	LAB#			Comments:	Receiving Laboratory:	state)	o o o o o o o o o o o o o o o o o o o	Droing Name	Client Name:
Ch. Inc. Add All Agency State Manager: Ike Tavarez					M /K	(8)	Trench #5 (6')	Trench #5 (4')	Trench #5 (2')	Trench #5 (1')	Trench #5 (0-1')	Trench #4 (10')	Trench #4 (8')	Trench #4 (6')	Trench #4 (4 ')		SAME		1/1			(county,		EOG	Te
Sampler Signature:					17												LE IDENTIFICATION		1250	and Tx		v, New Mexico	State Com 601H	DET Porceion	tra Tech, Inc.
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TCLP Metals Ag As Ba Cd Cr Pb Se Hg TCLP Volatiles TCLP Semi Volatiles	D:R-8			Sa	7	-1 Z	_ Z	ı Z	z		Z	1 Z			Z F	FILTERED) (Y	/N)	X 8260F	3					
TCLP Semi Volatiles) HAND DELIVER			imple Temperature	AB USE ONLY							\$	-		T F	PH TX10 PH 8015 PAH 8270 Total Metals	05 (M (C s Ag	(Ext to GRO -	C35) DRO - C	Pb Se	Hg		(Circ		557
Tracking # Tracking # PCB'S 80827608 NORM PLM (Asbestos) X X X X X X X X X X X Chloride Chloride Sulfate TDS General Water Chemistry (see attached list)	FEDEX	Special Rep	Rush Charg	X RUSH: Sar	STANI										R G	CLP Semi ICI IC/MS Vol. IC/MS Sen	. 82 ni. V	latiles 260B / 6					or Specify	NALYSIS	200
	Tracking #:	ort Limits or TRRP I	es Authorized	(24 b)	DARD	×	× ;	× >	× >	< >	< >	< >	< >	< >	N P C C	ORM LM (Asbes hloride hloride	stos) Ifate		e atta	iched li	st)		7	

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Analysis Request of Chain of Custody Record

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	Date: Time:		Muy July	Date: Time:	Trench #6 (10')	Trench #6 (6)	Trench #6 (4')	Trench #6 (2')	Trench #6 (1')	Trench #6 (0-1")	Irench #5 (14")	Trench #5 (12')	Irench #5 (10')		SAMPLE IDENTIFICATION		Noch	Xenco Midland Tx	Tetra Tech	Lea County, New Mexico		EOG 1 22 F 15	Tetta Tech, Ilic.	Total Took
ORIGINAL COPY	Received by:		1040 Male	Received by:	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	DATE	YEAR: 2017	SAMPLING		Sampler Signature:		Project #:		Merce of Sino manager.		Two
СОРУ			rechish 7	×	«×	×	×	×	×	×	×	×	×	TIME WATER SOIL	2	LING MATRIX		ature:				lke Tavarez		4000 N
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0.2°C) :+0.2°C) d Temp: 5.0		Sam	LA	1 N	Z	Z		z	Z	Z		Z	Z	# CONTA	D (Y	/N) BTE	X 8260B							
O :R-8	_	Sample Temperature	LAB USE ONLY	×							<			TPH TX1 TPH 8015 PAH 8270 Total Meta	oC als Ag als A	GRO - g As B	DRO - O	b Se H	łg		(Circle		557	
FEDEX UPS Tr	Special Report Limits or T	X HUSH: Same Day	STANDARD	THAT IS NOT THE PARTY OF THE PA									F	TCLP Vola TCLP Sem RCI GC/MS Vo GC/MS Se	ni Vol	e60B / /ol. 82					or Specify Method	ANALYSIS REQUEST	200	(0)
Tracking #:	Special Report Limits or TRRP Report	Day 24 hr 48 hr	3	×	×	×	× ;	× >	× >	× >	× ;	× >	× 0	NORM PLM (Asbe Chloride Chloride General W	Sul /ater	fate Chem		e attac	ched lis	t)	lethod No.)	UEST		Page
	port	ır 72 hr									Pa	nge 2		nion/Cati	on B	alance			Final	1.002				4 of

Analysis Request of Chain of Custody Record

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ORIGINAL COPY	Received by:	neceived by:	-	Referred by:		710/2017	7110/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	DATE	YEAR: 2017	SAMPLING		Sampler Signature:		Project #:		Site Manager:		
			rocky										TIME		LING		ture:						
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np: / () (0-6: -0.2°C) (6-23: +0.2°C) rected Temp:	Date:	Date:	11-1		\perp		1	#	1				HCL								arez	4000 N. Big Spring Street, Ste 401 Midland, Texas 79705, Tet (432) 682-4559 Fax (432) 682-3946	1
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⟨ UPS	Special Report Limits or T	HS	Ť.					1	T	1	1	-	GC/MS Vol.	_						_ ec	SIS/	8	-
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- 11	Hush Charges Authorized Special Report Limits or TRRP Report	48 hr	1							1	\pm		eneral Wa nion/Catio	_			e attac	ched lis	st)	_			
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	Relinquished by:		Relinquished by:	neiliquisited by:	Delinquished has											LAB#		Comments:	Comments:	Receiving Labora	state)	Project Name:		Client Name:	
	Date: Time:		Date: Time:	Date: Time:		Trench #2 (4')	Trench #2 (2')	Trench #2 (1')	Trench #2 (0-1')	Trench #1 (8')	Trench #1 (6')	Trench #1 (4')	Irench #1 (2 ')	Trench #1 (0-1')	1	SAMPLE IDENTIFICATION		lash	Xenco Midland Tx	Tetra Tech	Lea County, New Mexico	Beowulf 33 State Com 601H	EOG / DET Irricking	Tetra Tech, Inc.	
ORIGINAL COPY	Received by:		ON MANO	Received by:	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	DATE	YEAR: 2017	SAMPLING		Sampler Signature:		Project #:		Site Manager:		
	Date:	Pale.	MAM 7-1	Date:	×	×	×	×	×	×	×	×	×	×	WATER SOIL		MATRIX						Ike Tavarez	4000 N. Big 401 Midda Tel (43 Fax (4*)	
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S.O. AII		(0.	2	4		z	Z	Z	Z	Z	-1 Z	ı Z	1 Z	_	# CONTA	D (Y	7/N)								
		Sample Temperature	LAB USE ONLY					×		<				X	TPH TX10 TPH 8015 PAH 8270 Total Meta	005 M ((Ext to)	C35) DRO - O)RO - N			_ _ _ (<u>C</u>			
LIVERED FEDEX (Specia			REMARKS:											TCLP Meta TCLP Vola TCLP Sem RCI GC/MS Vol	tiles ii Vo	latiles		Pb Se	Hg		Circle or Specify	ANALYSI	58,	
UPS Tracking #:	Rush Charges Authorized Special Report Limits or TRRP Report	X HUSH: Same Day (24 hr			××	< >	< >	< >	× >	× >	×	×	×		GC/MS Sei PCB's 808 NORM PLM (Asbe Chloride	mi. \ 12 / 6	/ol. 82 608					Method	ANALYSIS REQUEST	7201	Page
	TRRP Report	hr 48 hr 72 hr												0	Chloride General W Anion/Catio	ater	Chem		ee atta	ched lis	st)	No.)		6	e1 of
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Corrected Temp: 5.0

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EOG / DET Tobeico	Site Manager:	lke Tav	arez		(ANALYSIS RE	OUEST
Beowulf 33 State Com 601H					(Circl	e or Specify	Method No.
nty, Lea County, New Mexico	Project #:						
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16.26.31					035) 0RO - 0 Cd Cr F		TDS stry (se
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SAMPLE IDENTIFICATION	YEAH: 2017) (Y/ľ	05 (E M (G C s Ag	Vola 826 ni. Vo	stos) Sulfa
		VATER	INO ₃	LTEREC	PH TX10 PH 8015 AH 8270 otal Metal	CLP Semi CI C/MS Vol. C/MS Ser	
#4 (4 ')		1	H Id	Z F	Ti Fi	R(G)	PL Ch
#4 (6')	7/10/2017	×	×				< >
#4 (8')	7/10/2017	×	×				< >
#4 (10')	7/10/2017	×	×		< .		< >
#5 (0-1")	7/10/2017	×	×		×-		< >
#5 (1')	7/10/2017	×	×				< >
#5 (2')	7/10/2017	×	×	2			< >
15 (4")	7/10/2017	×	×	 Z :			< >
15 (6")	7/10/2017	×	×				× >
8")	7/10/2017	×	×	 Z			××
1	haull	And Man	Date: Time: 7.11-17 10:3	7	LAB USE ONLY	REMARKS: STANI	
Date: Time:	Heceived by:		Date: Time:	(0)	ample Temperature	X RUSH: Sa	me Day (24 br 48 hr
Date: Time:	Received by:		П			Rush Charg	Rush Charges Authorized
						Special Rep	Special Report Limits or TRRP Report
						הם הבחביי ניים	
	OG Beowulf 33 State Com 601H County, New Mexico Sample IDENTIFICATION Sample IDENTIFICATION Date: Time: Date: Time: Date: Time:	Tetra Tech, Inc. Site Manager: Sowulf 33 State Com 601H Ra County, New Mexico Sample IDENTIFICATION Sample IDENTIFICATION Sample Signature: 7/10/2017	## Tetra Tech. Inc. Sile Manager:	Tetra Tech, Inc.	## Tetra Tech, Inc. Control Con	Color Colo	Tetra Tech, Inc.

Analysis Request of Chain of Custody Record

		Relinquished by:		Relinquished by:	Relinquished by				1	I	1				-	LAB#			Comments:	Receiving Laboratory:	Invoice to:	Project Location: state)	Froject Name:		Client Name:	1
		Date: Time:	Date: Illie:	1	Date: Time:	Trench #6 (8')	Trench #6 (6')	Trench #6 (4')	Trench #6 (2')	Trench #6 (1')	Trench #6 (0-1')	Trench #5 (14')	Irench #5 (12')	Irench #5 (10')	SAMPLE DENIFICATION	SAMPLE IDENTIFICATION		Nuch	Xenco Midland Tx	Tetra Tech	rea County, INEW MEXICO	(county, Lea County New Mexico	Beowulf 33 State Com 601H	FOG / 197 fredering	Toom Toom Tile.	Tetra Tech Inc
ORIGINAL COPY	neceived by:	Dogodo	Received by:	Maine	7/10/2017 Received by:	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	7/10/2017	DATE	YEAR: 2017	SAMPLING		Sampler Signature:			Project #:		one manager:	Gio Managara	
PY				Schah 7	×	×	×	×	×	×	×	×	×	×	WATER SOIL		G MATRIX							Ike Tavarez	401 Te Fa	4000 N
Temp: 5, 2 CF:(0-6: -0.2°C) (6-23: +0.2°C) Corrected Temp:	Date: Time:		Date: Time:	8:01/11/P	Date: Time:	×	×	×	×	×	×	×	×	×	HCL HNO ₃ ICE None		PRESERVATIVE METHOD							arez	401 Midland,Texas 79705 Tel (432) 682-4559 Fax (432) 682-3946	. Big Spring Street, Ste
			S	7		 Z		Z		1 .			Z	Z	# CONTAIN	(Y/	N)									
S,O			Sample Temperature	LAB USE ONLY	X					-	< >	<			BTEX 8021 TPH TX100 TPH 8015M PAH 8270C Total Metals TCLP Metals)5 (I	Ext to (GRO - I	DRO - O	RO - N	łg			(Circ		555	
) FEDEX UPS T	Special Repo	Rush Charges Authorized	X RUSH: Same Day	STANDARD										F	TCLP Volatil TCLP Semi \ RCI GC/MS Vol. GC/MS Semi	Vola 826 i. V	atiles 60B / 6 ol. 827	24	-0 Se	ng			Circle or Specify Method	ANALYSIS REC	20 C	(0)
Tracking #:	Special Report Limits or TRRP Report	Authorized	e Day 24 hr 48 hr	ARD	×	××	× >	< >	< >	< >	< >	< >	< >	N F ≺ C	NORM PLM (Asbest Chloride	os) Sulf	ate Chemi		e attac	ched lis	st)		flethod No.)	REQUEST		Page
	ort		72 hr			,		1	. \			Pa	ge 3		P\$6	. 00	ardi i Ce			Fina	I 1.0	002				4 of

Tetra Tech, Inc. South Manager Record Name EOG Correct Name EOG Announce Announce EOG Correct Name EOG Announce Correct Name EOG Correct Name EOG Correct Name EOG Announce Announce EOG Correct Name EOG Correct Name EOG Announce Announce EOG Correct Name EOG Announce EOG Correct Name EOG Announce EOG Correct Name EOG Announce EOG Announce EOG Announce EOG Correct Name EOG Announce EOG Announce EOG Announce EOG Correct Name EOG Announce EOG Announce EOG Announce EOG Announce EOG EOG Announce EOG EOG Announce EOG EOG EOG EOG EOG EOG EOG EO
Samplur Signature Samp
WATER MATRIX PRESERVATIVE MATRIX MATRIX PRESERVATIVE MATRIX MA
CE
ANALYSIS REQUEST Sample Temperature
TCLP Semi Volatiles RCI GC/MS Vol. 8260B / 624 GC/MS Semi. Vol. 8270C/625 PCB's 8082 / 608 NORM PLM (Asbestos) PLM (Asbestos) Anion/Cation Balance
TRAPP Report Anion/Cation Balance



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland

Date/ Time Received: 07/11/2017 10:37:00 AM

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Work Order #: 557206

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		5
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seal present on shipping co	ontainer/ cooler?	No
#5 *Custody Seals intact on shipping cor	ntainer/ cooler?	N/A
#6 Custody Seals intact on sample bottle	es?	N/A
#7 *Custody Seals Signed and dated?		N/A
#8 *Chain of Custody present?		Yes
#9 Sample instructions complete on Cha	in of Custody?	Yes
#10 Any missing/extra samples?		No
#11 Chain of Custody signed when relind	quished/ received?	Yes
#12 Chain of Custody agrees with sampl	e label(s)?	Yes
#13 Container label(s) legible and intact?	?	Yes
#14 Sample matrix/ properties agree with	n Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	,	Yes
#16 Samples properly preserved?		Yes
#17 Sample container(s) intact?		Yes
#18 Sufficient sample amount for indicate	ed test(s)?	Yes
#19 All samples received within hold time	e?	Yes
#20 Subcontract of sample(s)?		No
#21 VOC samples have zero headspace	?	N/A
* Must be completed for after-hours de Analyst: ss	livery of samples prior to placing in	the refrigerator
Checklist completed by:	Shawnee Smith	Date: 07/11/2017
Checklist reviewed by:	Mike Kimmel	Date: <u>07/11/2017</u>

Mike Kimmel

Analytical Report 557682

for Tetra Tech- Midland

Project Manager: Ike Tavarez
EOG- Beowulf 33 State Com 6
212C-MD-00902
18-JUL-17

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





18-JUL-17

Project Manager: **Ike Tavarez Tetra Tech- Midland**4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): 557682

EOG- Beowulf 33 State Com 6

Project Address: Lea County, New Mexico

Ike Tavarez:

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) 557682. 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. 557682 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks

Knus Hoah

Project Manager

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Sample Cross Reference 557682



Tetra Tech- Midland, Midland, TX

EOG- Beowulf 33 State Com 6

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Pasture Area (3'BEB) Center Sample	S	07-11-17 00:00		557682-001
Pasture Area South Sidewall Sample	S	07-11-17 00:00		557682-002
Pasture Area North Sidewall Sample	S	07-11-17 00:00		557682-003
Pasture Area East Sidewall Sample	S	07-11-17 00:00		557682-004
(Areas of T1, T2 & T3) South East Sidewall	S	07-12-17 00:00		557682-005
(Areas of T1, T2 & T3) South West Sidewall	S	07-12-17 00:00		557682-006
(Areas of T1, T2 & T3) North West Sidewal	S	07-12-17 00:00		557682-007
(Areas of T1, T2 & T3) North East Sidewall	S	07-12-17 00:00		557682-008
(Areas of T1, T2 & T3) East Sidewall Sampl	S	07-12-17 00:00		557682-009
(Areas of T1, T2 & T3) West Sidewall Samp	S	07-12-17 00:00		557682-010
(Areas of T1, T2 & T3) South Bottomhole Sa	S	07-12-17 00:00		557682-011
(Areas of T1, T2 & T3) Center Bottomhole S	S	07-12-17 00:00		557682-012
(Areas of T1, T2 & T3) North Bottomhole Sa	S	07-12-17 00:00		557682-013



None

CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: EOG- Beowulf 33 State Com 6

 Project ID:
 212C-MD-00902
 Report Date:
 18-JUL-17

 Work Order Number(s):
 557682
 Date Received:
 07/17/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:



Tetra Tech- Midland, Midland, TX

Project Name: EOG-Beowulf 33 State Com 6



Project Id: 212C-MD-00902

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Mon Jul-17-17 09:51 am

Report Date: 18-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557682-00	01	557682-0	02	557682-0	03	557682-0	04	557682-0	005	557682-0	06
Analysis Requested	Field Id:	Pasture Area (3'BE	B) Center	Pasture Area Sout	h Sidewall	Pasture Area Nortl	n Sidewall	Pasture Area East S	Sidewall S	Areas of T1, T2 &	t T3) Sout	Areas of T1, T2 &	T3) South
Anaiysis Kequesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-11-17 0	Jul-11-17 00:00		Jul-11-17 00:00		Jul-11-17 00:00		Jul-11-17 00:00		00:00	Jul-12-17 0	0:00
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-17-17 12	Jul-17-17 12:30		Jul-17-17 12:30		Jul-17-17 12:30		2:30	Jul-17-17 12:30		Jul-17-17 12	2:30
	Analyzed:	Jul-17-17 1	Jul-17-17 14:05		Jul-17-17 14:28		Jul-17-17 14:36		Jul-17-17 14:44		4:51	Jul-17-17 1:	5:14
	Units/RL:	mg/kg	mg/kg RL		RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.96	<4.96 4.96		4.93	5.22	4.96	14.3	4.94	56.7	4.98	<4.97	4.97

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.

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Tetra Tech- Midland, Midland, TX

Project Name: EOG- Beowulf 33 State Com 6



Project Id: 212C-MD-00902

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Mon Jul-17-17 09:51 am

Report Date: 18-JUL-17 **Project Manager:** Kelsey Brooks

	Lab Id:	557682-0	557682-007		08	557682-0	09	557682-0	10	557682-0	11	557682-0	12
Analysis Requested	Field Id:	(Areas of T1, T2 &	T3) Nor	Areas of T1, T2 &	T3) North	(Areas of T1, T2 &	t T3) East	(Areas of T1, T2 &	T3) West	Areas of T1, T2 &	z T3) Soutl	Areas of T1, T2 &	T3) Cente
Anatysis Requestea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-12-17 0	Jul-12-17 00:00		Jul-12-17 00:00		Jul-12-17 00:00		Jul-12-17 00:00		Jul-12-17 00:00		0:00
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-17-17 1	Jul-17-17 12:30		Jul-17-17 12:30		Jul-17-17 12:30		Jul-17-17 12:30		2:30	Jul-17-17 1	2:30
	Analyzed:	Jul-17-17 15:22		Jul-17-17 15:30		Jul-17-17 15:37		5:37 Jul-17-17 15:45		Jul-17-17 15:53		Jul-17-17 1	6:16
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		12.8 4.97		14.6	4.98	69.0	4.96	6.43	4.95	10.7	4.99	8.29	4.93

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.

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Tetra Tech- Midland, Midland, TX

Project Name: EOG- Beowulf 33 State Com 6



Project Id: 212C-MD-00902

Contact: Ike Tavarez

Project Location: Lea County, New Mexico

Date Received in Lab: Mon Jul-17-17 09:51 am

Report Date: 18-JUL-17 **Project Manager:** Kelsey Brooks

	1		I	I	I	I	I
	Lab Id:	557682-013					
Analysis Requested	Field Id:	Areas of T1, T2 & T3) North	ł				
Anutysis Requesteu	Depth:						
	Matrix:	SOIL					
	Sampled:	Jul-12-17 00:00					
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-17-17 12:30					
	Analyzed:	Jul-17-17 16:23					
	Units/RL:	mg/kg RL					
Chloride		251 4.97					

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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

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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1211 W Florida Ave, Midland, TX 79701 (432) 563-1800 (432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282 (602) 437-0330



BS / BSD Recoveries



Project Name: EOG- Beowulf 33 State Com 6

Work Order #: 557682 Project ID: 212C-MD-00902

Analyst: MGO Date Prepared: 07/17/2017 Date Analyzed: 07/17/2017

Lab Batch ID: 3022477 Sample: 727779-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUL	ΟY	
Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	<5.00	250	268	107	250	269	108	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: EOG- Beowulf 33 State Com 6

Work Order #: 557682 Project ID: 212C-MD-00902

Lab Batch ID: 3022477 **QC- Sample ID:** 557682-001 S **Batch #:** 1 **Matrix:** Soil

 Date Analyzed:
 07/17/2017
 Date Prepared:
 07/17/2017
 Analyst:
 MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<4.96	248	263	106	248	266	107	1	90-110	20	

Lab Batch ID: 3022477 **QC- Sample ID:** 557682-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/17/2017 Date Prepared: 07/17/2017 Analyst: MGO

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	10.7	250	274	105	250	276	106	1	90-110	20	

Tetra Tech Inc.	Tetra Tech, Inc.
Temp: Date: Time: Date: Data: Date: Date: Date: Date: Date: Date: Date: Data	ANALYSIS REQUEST Circle or Specify Method No.) ANALYSIS REQUEST Circle or Specify Method No.)
Circle or CF:(0-6: -0.2°C)	## ANALYSIS REQUEST Temp: CF:(O-6:-0.2°C) G-23:+0.2°C) G-23:+0.2°C) CF-20:-0.2°C) G-23:+0.2°C) G-2
HNO3	HNO3 HNO3 HNO9 HOUSEST HOU
	RID:R-8
TCLP Metals Ag As Ba Cd Cr Pb Se Hg TCLP Volatiles TCLP Semi Volatiles	TCLP Metals Ag As Ba Cd Cr Pb Se Hg TCLP Volatiles TCLP Volatiles TCLP Semi Volatiles TCLP Semi Volatiles RCI GC/MS Vol. 8260B / 624 GC/MS Semi. Vol. 8270C/625 PCB's 8082 / 608 NORM NORM PLM (Asbestos) PLM (Asbestos) X X X X X X X X X X X X X Chloride Chloride Sulfate TDS General Water Chemistry (see attached list) Anion/Cation Balance
TCLP Volatiles TCLP Semi Volatiles	ANALYSIS REQUEST TCLP Volatiles TCLP Semi Volatiles RCI GC/MS Vol. 8260B / 624 GC/MS Semi. Vol. 8270C/625 PCB's 8082 / 608 NORM PLM (Asbestos) X X X X X X X X X X X X X X X X X X X
Tracking #: Tracking #: Tracking #: Tracking #: Tracking #: Tracking #: PCB's 8082 / 608 NORM PLM (Asbestos) X X X X X X X X X X Chloride Chloride Sulfate TDS	Chloride Sulfate TDS Chloride Sulfate TDS General Water Chemistry (see attached list) Anion/Cation Balance
	13

	manyone medacest or chain or custody necord			Page 2	2 of 2
4	Tetra Tech. Inc.		4000 N. Big Spring Street, Ste 401 Midland,Texas 79705 Tel (422) 852-4569 Fax (422) 828-2946		
Client Name:	EOG	Site Manager:	lke Tavarez	ANALYSIS REQUEST	
Project Name:	Beowulf 33 State Com 6			(Circle or Specify Method No.)	-
Project Location: state)	(county, Lea County, New Mexico	Project #:	212C-MD-00902	t)	1.000
Invoice to:	Tetra Tech			9	
Receiving Laboratory:		Sampler Signature:		Se H	
Comments:				Cd Cr Pb Cd Cr Pb	
		SAMPLING	+	BTEX Ext to (BRO - As Ba As Ba As Ba titles BOD 60 BOD 82	
LAB#	SAMPLE IDENTIFICATION	YEAR: 2017	INER	21B 2005 (E SM (G C C C C C C C C C C C C C C C C C C	
(LAB USE)		DATE	WATER SOIL HCL HNO ₃ CE None CONTA	PH TX10 PH 8015 AH 8270 otal Meta CLP Meta CLP Serr CI C/MS Vo C/MS Se CB's 808 DRM M (Asbe nloride	old
	(Areas of T1, T2 & T3) South Bottome Sample (1.5' BEB)	7/12/2017	×	E	н
	(Areas of 11, 12 & 13) Center Bottomhole Sample (1.5' BEB)	7/12/2017	×	×	
	(Aleas 0111, 12 & 13) North Bottomhole Sample (1.5' BEB)	7/12/2017	×	×	
Relinquished by:			\perp		
mike	Comme 7/7-/7 9:5/cm	Heceived by:	Date: Time:	LAB USE ONLY STANDARD	
neiinquisned by:	Date: Time:	Received by:	Date: Time:	Sample Temperature X RUSH: Same Day (24 m) 48 hr 72 hr	ž hr
Relinquished by:	Date: Time:	Received by:	Date: Time:	Rush Charges Authorized	
				Special Report Limits or TRRP Report	
		ORIGINAL COPY		D DELIVERED FEDEX UPS Tracking #:	
		OHIGINAL COPY	CF:(0-6: -0.2°C) (6-23: +0.2°C) Corrected Temp:		



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland

Date/ Time Received: 07/17/2017 09:51:00 AM

Work Order #: 557682

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Date: 07/17/2017

Date: 07/17/2017

Temperature Measuring device used: R8

Sampl	le Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.7	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seal present on shipping container/ co	oler? N/A	
#5 *Custody Seals intact on shipping container/ coo	oler? N/A	
#6 Custody Seals intact on sample bottles?	N/A	
#7 *Custody Seals Signed and dated?	N/A	
#8 *Chain of Custody present?	Yes	
#9 Sample instructions complete on Chain of Custo	dy? Yes	
#10 Any missing/extra samples?	No	
#11 Chain of Custody signed when relinquished/ re-	ceived? Yes	
#12 Chain of Custody agrees with sample label(s)?	Yes	
#13 Container label(s) legible and intact?	Yes	
#14 Sample matrix/ properties agree with Chain of 0	Custody? Yes	
#15 Samples in proper container/ bottle?	Yes	
#16 Samples properly preserved?	Yes	
#17 Sample container(s) intact?	Yes	
#18 Sufficient sample amount for indicated test(s)?	Yes	
#19 All samples received within hold time?	Yes	
#20 Subcontract of sample(s)?	No	
#21 VOC samples have zero headspace?	N/A	
* Must be completed for after-hours delivery of sa	amples prior to placing in the refrige	erator
Analyst: ss PH	Device/Lot#:	

Checklist completed by:

Shawnee Smith

Checklist reviewed by:

Kelsey Brooks

Analytical Report 561733

for Tetra Tech- Midland

Project Manager: Ike Tavarez
EOG- Beowulf 33 State Com 601H
212C-MD-00902
11-SEP-17

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





11-SEP-17

Project Manager: **Ike Tavarez Tetra Tech- Midland**4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): 561733

EOG- Beowulf 33 State Com 601H Project Address: Lea County NM

Ike Tavarez:

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) 561733. 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. 561733 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks

Knus Hoah

Project Manager

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Sample Cross Reference 561733



Tetra Tech- Midland, Midland, TX

EOG- Beowulf 33 State Com 601H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
North Bottom Hole	S	08-28-17 00:00		561733-001
North West Sidewall	S	08-28-17 00:00		561733-002
North East Sidewall	S	08-28-17 00:00		561733-003
Bottom Hole #1	S	08-28-17 00:00		561733-004
Bottom Hole #2	S	08-28-17 00:00		561733-005
South Bottom Hole	S	08-28-17 00:00		561733-006
South West Sidewall	S	08-28-17 00:00		561733-007
South East Sidewall	S	08-28-17 00:00		561733-008
West Sidewall	S	08-28-17 00:00		561733-009
East Sidewall	S	08-28-17 00:00		561733-010
Re-Trench #5 (8')	S	08-28-17 00:00		561733-011



CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: EOG- Beowulf 33 State Com 601H

 Project ID:
 212C-MD-00902
 Report Date:
 11-SEP-17

 Work Order Number(s):
 561733
 Date Received:
 08/30/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3027156 Inorganic Anions by EPA 300/300.1

Lab Sample ID 561733-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 561733-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Tetra Tech- Midland, Midland, TX

Project Name: EOG- Beowulf 33 State Com 601H

TNI TNI TABORATOR

Project Id: 212C-MD-00902

Lea County NM

Contact: Ike Tavarez

Project Location:

Date Received in Lab: Wed Aug-30-17 03:40 pm **Report Date:** 11-SEP-17

Project Manager: Kelsey Brooks

	Lab Id:	561733-0	001	561733-0	02	561733-0	03	561733-0	04	561733-0	05	561733-0	06
Analysis Requested	Field Id:	North Botton	n Hole	North West Si	dewall	North East Sic	lewall	Bottom Ho	le #1	Bottom Ho	le #2	South Bottom	n Hole
Anaiysis Requesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-28-17	Aug-28-17 00:00		Aug-28-17 00:00		Aug-28-17 00:00		Aug-28-17 00:00		00:00	Aug-28-17 (00:00
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-08-17	Sep-08-17 11:15		Sep-08-17 11:15		1:15	Sep-08-17 11:15		Sep-08-17 1	1:15	Sep-08-17 1	1:15
	Analyzed:	Sep-08-17	Sep-08-17 12:07		Sep-08-17 12:31		2:39	Sep-08-17 12:47		Sep-08-17 12:56		Sep-08-17 1	3:20
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		22.1	4.93	<4.98	4.98	<4.98	4.98	64.9	5.00	<4.90	4.90	<4.90	4.90

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.

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Tetra Tech- Midland, Midland, TX

Project Name: EOG- Beowulf 33 State Com 601H



Project Id: 212C-MD-00902

Lea County NM

Contact: Ike Tavarez

Project Location:

Date Received in Lab: Wed Aug-30-17 03:40 pm Report Date: 11-SEP-17 Project Manager: Kelsey Brooks

	Lab Id:	561733-0	07	561733-0	08	561733-0	09	561733-0	10	561733-0)11	
Analysis Requested	Field Id:	South West Sie	dewall	South East Si	dewall	West Sides	wall	East Sidew	all	Re-Trench #	5 (8')	
Anaiysis Requesieu	Depth:											
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Aug-28-17 (Aug-28-17 00:00		Aug-28-17 00:00		00:00	Aug-28-17 00:00		Aug-28-17 00:00		
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-08-17 1	Sep-08-17 11:15		Sep-08-17 11:15		1:15	Sep-08-17 11:15		Sep-08-17 11:15		
	Analyzed:	Sep-08-17 1	Sep-08-17 13:28		Sep-08-17 13:37		Sep-08-17 13:45		3:53	Sep-08-17	14:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		<4.92	<4.92 4.92		4.96	18.1	4.95	<4.99	4.99	<4.96	4.96	

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 beest 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.

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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

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 1211 W Florida Ave, Midland, TX 79701
 (432) 563-1800
 (432) 563-1713

 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282
 (602) 437-0330



BS / BSD Recoveries



Project Name: EOG-Beowulf 33 State Com 601H

Work Order #: 561733 Project ID: 212C-MD-00902

Analyst: MNV Date Prepared: 09/08/2017 Date Analyzed: 09/08/2017

 Lab Batch ID: 3027156
 Sample: 730568-1-BKS
 Batch #: 1
 Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	< 5.00	250	240	96	250	242	97	1	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: EOG- Beowulf 33 State Com 601H

Work Order #: 561733 Project ID: 212C-MD-00902

Lab Batch ID: 3027156 **QC- Sample ID:** 561733-001 S **Batch #:** 1 **Matrix:** Soil

 Date Analyzed:
 09/08/2017
 Date Prepared:
 09/08/2017
 Analyst:
 MNV

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	22.1	247	300	113	247	298	112	1	90-110	20	X

Lab Batch ID: 3027156 **QC- Sample ID:** 561733-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/08/2017 Date Prepared: 09/08/2017 Analyst: MNV

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<4.96	248	278	112	248	278	112	0	90-110	20	X

Tetra Tech, Inc.

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

	506
	1733
0	Page

1 of

Final 1.000

Final 1.000



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland

Date/ Time Received: 08/30/2017 03:40:00 PM

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Work Order #: 561733

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		4.6
#2 *Shipping container in good condition	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping cor	N/A	
#5 Custody Seals intact on sample bottle	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 relinqu	uished/ received?	Yes
#10 Chain of Custody agrees with sampl	e 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 indicate	Yes	
#16 All samples received within hold time	Yes	
#17 Subcontract of sample(s)?	N/A	
#18 Water VOC samples have zero head	dspace?	N/A
* Must be completed for after-hours de Analyst:	livery of samples prior to placing in PH Device/Lot#:	the refrigerator
Checklist completed by:	Jessica Kramer	Date: <u>09/01/2017</u>
Checklist reviewed by:	Mmy Moah Kelsey Brooks	Date: 09/01/2017