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## REMEDIATION SUMMARY AND RISK-BASED SITE CLOSURE REQUEST

BOPCO, LP

JAMES RANCH UNIT #41

Eddy County, New Mexico

Unit Letter "N" (SE/SW), Section 36, Township 22 South, Range 30 East

Latitude 32.343149° North, Longitude 103.835467° West

NMOCD Reference #s 2RP- 10 \(\Lambda\)

Prepared For:

BOPCO, LP 522 W. Mermod, Suite 704 Carlsbad, New Mexico 88220

Prepared By:
Basin Environmental Service Technologies, LLC
3100 Plains Highway
Lovington, New Mexico 88260

June 2012

uninat Managan

Project Manager



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#### 1.0 INTRODUCTION AND BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin), on behalf of BOPCO, LP (BOPCO), has prepared this *Remediation Summary and Risk-Based Site Closure Request* for the release site known as James Ranch Unit #41 (JRU #41) The legal description of the release site is Unit Letter "N" (SE/SW), Section 36, Township 22 South, Range 30 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.343149° North latitude and 103.835467° West longitude. The property affected by the release is owned by The State of New Mexico and administered by the New Mexico State Land Office (NMSLO). Please reference Figure 1 for a "Site Location Map" and Figure 2 for "Site & Sample Location Map".

On August 25, 2011, BOPCO discovered a release had occurred at the JRU #41. The release was attributed to the failure of the "stuffing box packing" The release was reported to the New Mexico Oil Conservation Division (NMOCD) Artesia District Office on September 13, 2011. The "Release Notification and Corrective Action" (Form C-141) indicated approximately five (5) barrels of crude oil and fifteen (15) barrels of produced water were released, with approximately ten (10) barrels of total fluid being recovered. During initial response activities a vacuum truck was utilized to recover free-standing fluids, and visibly stained soil was excavated and stockpiled on-site atop an impermeable liner pending final disposition. The release affected approximately three thousand square feet (3,000 ft²) of existing well pad. A Form C-141 is provided as Appendix A. General Photographs of the release site are provided as Appendix B.

#### 2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated information was unavailable for Section 36, Township 22 South, Range 30 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately two hundred feet (200') below ground surface (bgs). Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no water wells within 1,000 feet of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

There are no surface water bodies within 1,000 feet of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

NMOCD guidelines indicate the JRU #41 release site has an initial ranking score of zero (0) points. The soil remediation levels for a site with a ranking score of zero (0) points are as follows:

- Benzene 10 mg/Kg (ppm)
- BTEX -50 mg/Kg (ppm)
- TPH -5,000 mg/Kg (ppm)

The New Mexico Administrative Code (NMAC) does not currently specify a remediation level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

#### 3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On May 11, 2012, following the initial response, Basin began remediation activities at the release site. Two (2) composite soil samples (Backfill Sample 1 and Backfill Sample 2) were collected from the unaffected western and southern portions of the existing well pad in order to evaluate its potential use as backfill. Soil samples were submitted to Cardinal Laboratories in Hobbs, New Mexico, for analysis of benzene, ethylbenzene, toluene, and xylene (BTEX) in accordance with EPA Method SW-846 8021b, total petroleum hydrocarbon (TPH) in accordance with EPA Method SW-846 8015M, and/or chloride concentrations in accordance with EPA Method 4500Cl-B. Laboratory analytical results indicated total BTEX constituent and TPH concentrations were less than the appropriate laboratory method detection limits (MDL) for each of the soil samples submitted. Analytical results indicated chloride concentrations ranged from 64.0 mg/Kg for soil sample Backfill Sample 2 to 80.0 mg/Kg for soil sample Backfill Sample 1. Analytical results indicated material generated from a "well pad reduction" could be used for backfilling the remediation site. Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chloride in Soil". Laboratory analytical reports are provided as Appendix C.

In order to facilitate remediation activities, the release site was divided into three (3) separate sections: Section 1, Section 2 and Section 3. Section 1 (Sec. 1) represented the release point and primary impact zone. Section 2 (Sec. 2) represented the shallow surface impact east of the JRU #41 flowline. Section 3 (Sec. 3) represented the shallow surface impact west of the JRU #41 flowline.

On May 22, 2012, a delineation trench was advanced in order to investigate the vertical extent of soil impact. Confirmation soil samples (Trench Floor 2' Sec. 1, Trench Floor 5' Sec. 1, Trench Floor 10' Sec. 1 and Trench Floor 12' Sec. 1) were collected during the advancement of the delineation trench and submitted to the laboratory for analysis of TPH and chloride concentrations. Soil sample Trench Floor 12' Sec. 1 was also analyzed for BTEX constituent concentrations. Laboratory analytical results indicated TPH concentrations were less than the laboratory MDL for each of the soil samples submitted. Laboratory analytical results indicated chloride concentrations ranged from 784 mg/Kg for soil sample Trench Floor 12' Sec. 1 to 2,760 mg/Kg for soil sample Trench Floor 2' Sec. 1. Total BTEX constituent concentrations were less than the appropriate laboratory MDL of 0.150 mg/Kg for soil sample Trench Floor 12' Sec 1.

On May 22, 2012, excavation activities commenced at the release site. A Photo-Ionization Detector (PID) and chloride field kit were used to field screen the horizontal and vertical extent of impacted soil and to help guide the excavation. The floor of Section 1 of the excavation was advanced to approximately five feet (5') bgs pending the installation of an approved twenty (20) mil polyurethane liner. The excavation sidewalls were advanced until field tests suggested TPH and chloride concentrations were below the NMOCD regulatory remediation action levels established for the site.

Following the excavation of Section 1, four (4) confirmation soil samples (North Wall Sec. 1, South Wall Sec. 1, East Wall Sec. 1 and West Wall Sec. 1) were collected from the sidewalls of

Section 1 and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from less than the laboratory MDL for soil samples North Wall Sec. 1 and South Wall Sec. 1 to 459 mg/Kg for soil sample West Wall Sec. 1. Chloride concentrations ranged from 464 mg/Kg for soil sample North Wall Sec. 1 to 1,140 mg/Kg for soil sample South Wall Sec. 1.

On May 23, 2012, four (4) confirmation soil samples (N Wall 1' Sec. 2, S Wall 1' Sec. 2, E Wall Sec. 2 and Floor 1 1/2' Sec. 2) were collected from the floor and sidewalls in Section 2 of the excavation. Soil samples were submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated TPH concentrations were less than the laboratory MDL for each of the soil samples submitted. Chloride concentrations ranged from 32.0 mg/Kg for soil sample Floor 1 1/2' Sec. 2 to 400 mg/Kg for soil sample S Wall 1' Sec. 2. Each of the soil samples exhibited TPH and chloride concentrations below NMOCD regulatory remediation action levels.

On May 23, 2012, four (4) confirmation soil samples (N Wall 1' Sec. 3, S Wall 1' Sec. 3, W Wall 1' Sec. 3, and Floor 1 1/2' Sec. 3) were collected from the floor and sidewalls in Section 3 of the excavation. Soil samples were submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated TPH concentrations were less than the laboratory MDL for each of the soil samples submitted. Chloride concentrations ranged from 144 mg/Kg for soil sample N Wall 1' Sec. 3 to 544 mg/Kg for soil sample W Wall 1' Sec. 3. Each of the soil samples exhibited TPH and chloride concentrations below NMOCD regulatory remediation action levels.

On May 23 and May 24, 2012, a total of approximately six hundred cubic yards (600 yd³) of impacted material was transported to Lea Land, LLC (NMOCD Permit #WM-01-035), for disposal. The final dimensions of Section 1 of the excavation were approximately thirty feet (30') in width, forty feet (40') in length and five feet (5') in depth. Section 2 measured approximately sixty feet (60') in width, seventy feet (70') in length and eighteen inches (18") in depth. Section 3 measured approximately forty-five feet (45') in width, sixty feet (60') in length and eighteen inches (18") in depth.

On May 24, 2012, a twenty (20) mil polyurethane liner was installed in the floor of Section 1 of the excavation at approximately five feet (5') bgs to inhibit the vertical migration of contaminants. Approximately one foot (1') of non-impacted pad sand was installed above and below the liner in order to maintain its integrity during backfilling activities.

On May 25 through May 29, 2012, upon receiving verbal approval from the NMOCD, the excavated area was backfilled. Approximately three hundred sixty cubic yards (360 yd³) of excess well pad material, along with two hundred forty (240 yd³) of locally purchased, non-impacted material, was used to backfill the excavation. Excavation backfill was compacted in eighteen inch (18") lifts and contoured to fit the needs of the pad. Areas affected by the "well pad reduction" were contoured to fit the surrounding topography and will be seeded with a BLM approved seed mixture prior to the end of the 2012 calendar year.

#### 4.0 QA/QC PROCEDURES

#### 4.1 Soil Sampling

Soil samples were delivered to Cardinal Laboratories, Inc., in Hobbs, New Mexico, for BTEX, TPH and/or chloride analyses using the methods described below:

- BTEX concentrations in accordance with EPA Method SW-846 8021b
- TPH concentrations in accordance with EPA Method SW-846 8015M
- Chloride concentrations in accordance with EPA Method 4500 Cl-B

#### 4.2 Decontamination of Equipment

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox® detergent and rinsed with distilled water.

#### 4.3 Laboratory Protocol

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form(s). These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

#### 5.0 SITE CLOSURE REQUEST

Soil samples collected from the floor and sidewalls of the excavation were analyzed by an NMOCD-approved laboratory. Soil samples collected from the floor and sidewalls of Section 1 of excavation exhibited BTEX, TPH, and chloride concentrations below the regulatory remediation action levels established for the site, with the exception of soil sample S Wall Sec. 1, which exhibited a chloride concentration of 1,140 mg/Kg. A twenty (20) mil polyurethane liner was installed in the floor of Section 1 of the excavation at approximately five feet (5') bgs to inhibit the downward migration of contaminants in the areas represented by soil samples Trench Floor 10' Sec. 1 and Trench Floor 12' Sec. 1.

Soil samples collected from the floor and sidewalls of Sections 2 and 3 of excavation exhibited TPH and chloride concentrations below the regulatory remediation action levels established for the site.

Based on laboratory analytical results, and the installation of an approved twenty (20) mil polyurethane liner, Basin recommends BOPCO provide the NMOCD Artesia District Office and the BLM Carlsbad District Office a copy of this *Remediation Summary & Risk-Based Site Closure Request* and request the NMOCD grant site closure to the James Ranch Unit #41 release site.

#### 6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Risk-Based Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin has not conducted an independent examination of the facts contained in referenced materials and statements. Basin has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of BOPCO, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or BOPCO, LP.

#### 7.0 DISTRIBUTION:

Copy 1: Mike Bratcher

New Mexico Energy, Minerals and Natural Resources Department

Oil Conservation Division (District 2)

1301 E. Grand Avenue Artesia, NM 88210

Copy 2: James Amos

Bureau of Land Management

602 E. Greene Street Carlsbad, NM 88220

Copy 3: Tony Savoie

BOPCO, LP

522 W. Mermod, Suite 704 Carlsbad, NM 88220

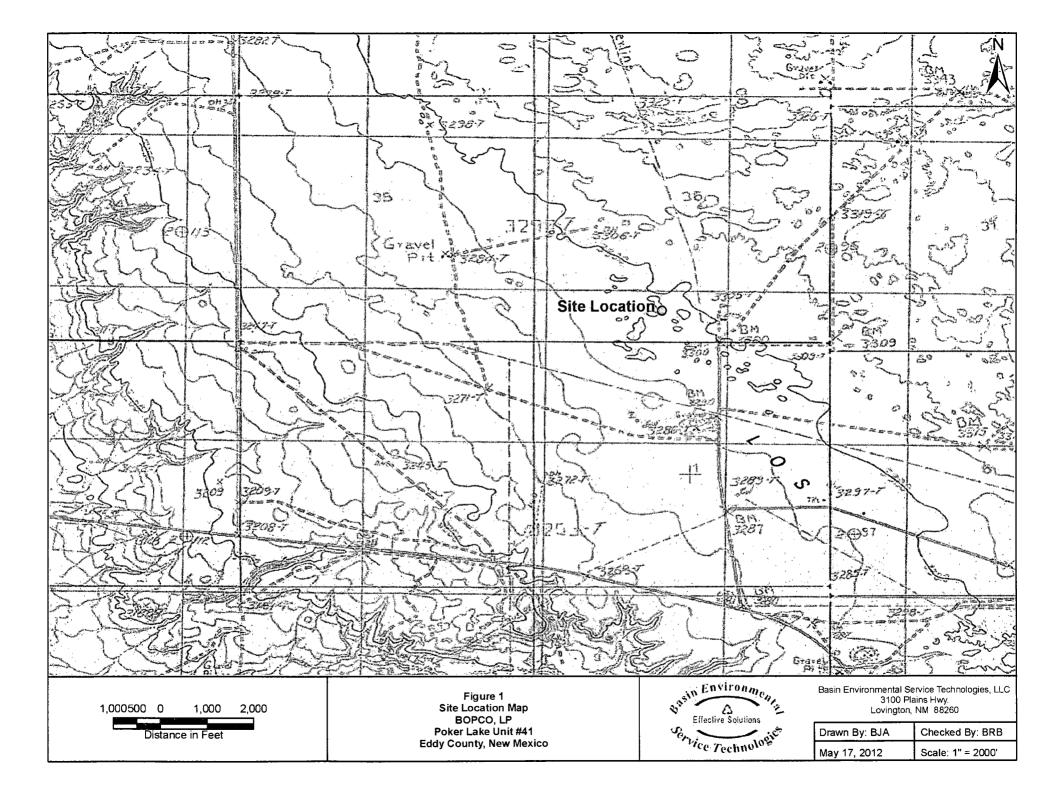
Copy 4: Basin Environmental Service Technologies, LLC

P.O. Box 301

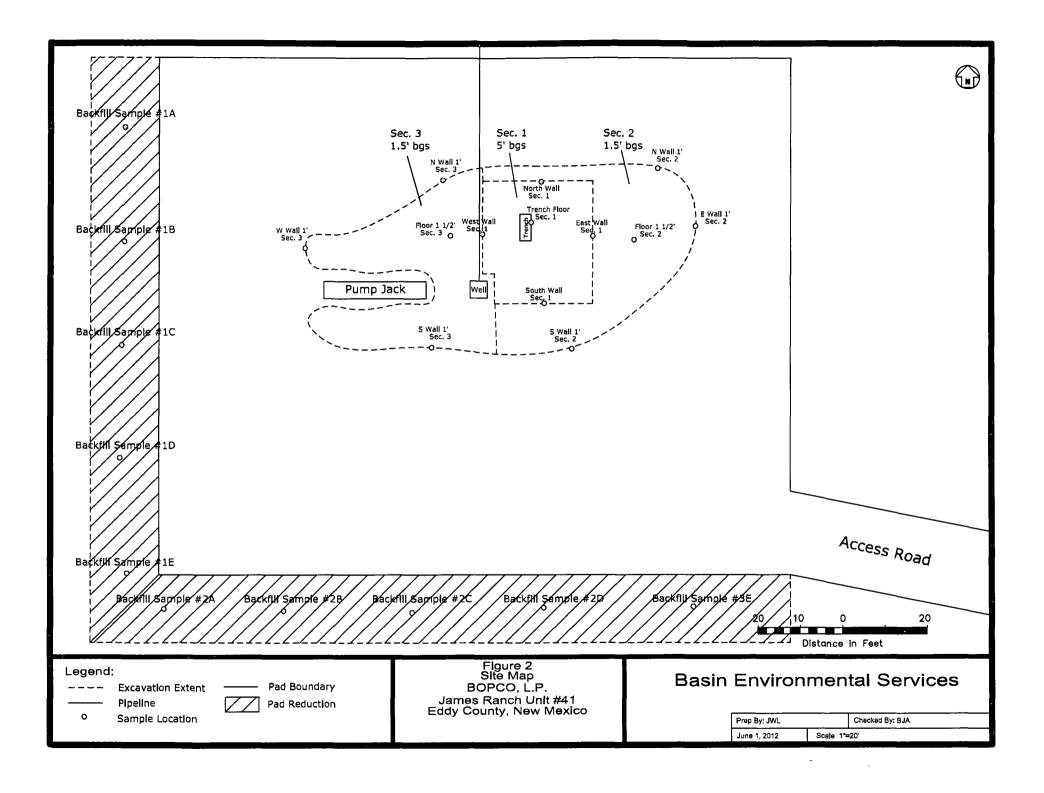
Lovington, NM 88260

## **FIGURES**

# Figure 1 Site Location Map



## Figure 2 Site & Sample Location Map



### **TABLES**

# Table 1 Concentrations of Benzene, BTEX, TPH & Chloride in Soil

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

#### BOPCO, LP JAMES RANCH UNIT #41 EDDY COUNTY, NEW MEXICO

					METHOD: EI	PA SW 846-80	21B, 5030		ME.	THOD: 801	5M	TOTAL	E 300
SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)	TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	CHLORIDE (mg/Kg)
Backfill Sample 1	N/A	5/11/2012	Excavated	<0.050	<0.050	<0.050	<0.150	<0.150	<10.0	<10.0	<10.0	<10.0	80.0
Backfill Sample 2	N/A	5/11/2012	Excavated	< 0.050	<0.050	<0.050	<0.150	< 0.150	<10.0	<10.0	<10.0	<10.0	64.0
WAS TO STAND AND WITH		3.6 P. 2006.24	MONE L	PART BOXES	UKTO TA		Maria Maria	12000000000000000000000000000000000000	4.9000	N. M. R. C.	30 30 35	海海湖河流	AND IN
Trench Floor 2' Sec. 1	2 '	5/22/2012	In-Situ	-	-	-	1	-	<10.0	<10.0	<10.0	<10.0	2,760
Trench Floor 5' Sec. 1	5'	5/22/2012	In-Situ	-	- "		•	-	<10.0	<10.0	<10.0	<10.0	2,200
Trench Floor 10' Sec. 1	10'	5/22/2012	In-Situ		-		-	-	<10.0	<10.0	<10.0	<10.0	1,360
Trench Floor 12' Sec. 1	12'	5/22/2012	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<10.0	<10.0	<10.0	<10.0	784
North Wall Sec. 1	4'	5/22/2012	In-Situ		-			-	<10.0	<10.0	<10.0	<10.0	464
South Wall Sec. 1	4'	5/22/2012	In-Situ	-	-	,	-	-	<10.0	<10.0	<10.0	<10.0	1,140
East Wall Sec. 1	4'	5/22/2012	In-Situ		-		-	-	<10.0	260	87.3	347	768
West Wall Sec. 1	4'	5/22/2012	In-Situ		-	,	-	1	<10.0	350	109	459	752
		<b>等</b> 设备 经经		<b>MORNIA</b> S	(秦)四门温温	をの動物を行行	質問には本門	"水流"				を変える	BA - MENTER STORY
N Wall 1' Sec 2	1'	5/23/2012	In-Situ	-		,	-	-	<10.0	<10.0	<10.0	<10.0	368
S Wall 1' Sec. 2	_1'	5/23/2012	In-Situ			,	-	ı	<10.0	<10.0	<10.0	<10.0	400
E Wall 1' Sec. 2	1'	5/23/2012	In-Situ		-	,	-	1	<10.0	<10.0	<10.0	<10.0	80.0
Floor 1 1/2' Sec 2	1.5'	5/23/2012	In-Situ	-	-	,	•	1	<10.0	<10.0	<10.0	<10.0	32.0
N Wall 1' Sec. 3	1'	5/23/2012	In-Situ	-		,	•	-	<10.0	<10.0	<10.0	<10.0	144
S Wall 1' Sec. 3	_1'	5/23/2012	In-Situ	-	-	,	-	-	<10.0	<10.0	<10.0	<10.0	240
W Wall 1' Sec. 3	1'	5/23/2012	In-Situ	-		,	-	_	<10.0	<10.0	<10.0	<10.0	544
Floor 1 1/2' Sec 3	1.5'	5/23/2012	In-Situ	-			-	-	<10.0	<10.0	<10.0	<10.0	256
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NMOCD Criteria			l	10				50				5,000	

<sup>- =</sup> Not analyzed.

### **APPENDICES**

# Appendix A Release Notification and Corrective Action (Form C-141)

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

\* Attach Additional Sheets If Necessary

#### State of New Mexico Energy Minerals and Natural Resources

Bacin

Form C-141 Revised October 10, 2003

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

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

			Rele	ease Notifica	ation	and Co	rrective A	ction	ì			
						OPERA:	ГOR		M Initi	al Report		Final Report
Name of C	ompany Bo	OPCO, L.P.				Contact Tor						
Address 52	2 W. Mem	nod, Suite 70	4 Carlsb	ad, N.M. 88220	r	'elephone l	No. 432-556-87	30				
Facility Na	me James l	Ranch Unit #	41		F	acility Typ	ie E&P					
Surface Ov	mer State			Mineral O	wner St	ate		y	Lease 1	No E5229		
				LOCA	TION	OF RE	LEASE					1
Unit Lener N	Section 36	Township 228	Range 30E	Feet from the	····	South Line	Feet from the	East/V	West Line	County Eddy		
		•	La	titude_N 32.343	149	Longitud	e W 103.83546	7				
				NATU	URE (	OF REL						
Type of Rele	ase: Produc	ed water and	crude oil				Release: 15 bbls vater and 5 bbls o		Volume l	Recovered;	10	TO THE PROPERTY OF THE PROPERT
Source of Re	lease: Pump	oing well stuff	ing box.	and the second s			lour of Occurrence our unknown	ce	Date and 8/17/11 9	Hour of Dis	covery	
Was Immedi				No ⊠ Not Red		If YES, To	Whom?					
By Whom?						Date and F	lour					1
Was a Water	course Read	ched?	Yes 🛭	No		If YES, Vo	dume Impacting t	the Wate	ercourse.	CEN	ED	
If a Waterco	urse was Im	pacted. Descri	be Fully.*	No Taken.* The stuffien.*Approximatel and stockpiled on-site is true and completed on file certain re					The state of the s	SEP 13	ARTE	SIA
Describe Car	use of Probl	em and Remed	dial Action	Taken.* The stuf	fing box	packing fai	led, the packing v	was repl	nced the se	day.		
Describe Are truck and the guidelines.	en Affected : e saturated e	and Cleanup A aliche was ser	Action Tak aped up a	en.*Approximatel nd stockpiled on-si	ly 3000 : ite. A rei	sq. ft. of cali mediation pl	che well pad. All an will be develo	of the for	ree liquid v ecordance	was removed with the NM	l with a v IOCD rea	acuum nediation
should their or the enviro	operations h nment. In a	ave failed to a	acceptant adequately ICD accep	is true and complied for file certain re- tile of a C-141 report investigate and re- tance of a C-141 re-	mediate	contaminati	on that pose a thr	reat to gi	round wate	r, surface w	ater, hum	an health
							OIL CON	SERV	'ATION	DIVISIO	<u>NC</u>	
Signature:	<u> </u>	7	<u>uee</u>			approved by	District Supervis	50 <b>1</b> :				
Printed Nam	e: rony Sav	oie					· · · · · · · · · · · · · · · · · · ·					
Title: Waste	Mgmt.& Re	emediation Sp	ecialist			Approvat Da	le:		Expiration	Date:		
E-mail Addr	ess: TASave	oie@BassPet.c	com			Conditions of	f Approval:			Attached		
Date: 9/11/1	l			Phone:432-556-8	730							

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

1301 W. Grand Avenue, Artesia, NM 88210

District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

Date: 8/30/12 Phone: (432) 556-8730

Energy Minerals and Natural Resources ECEIVED

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

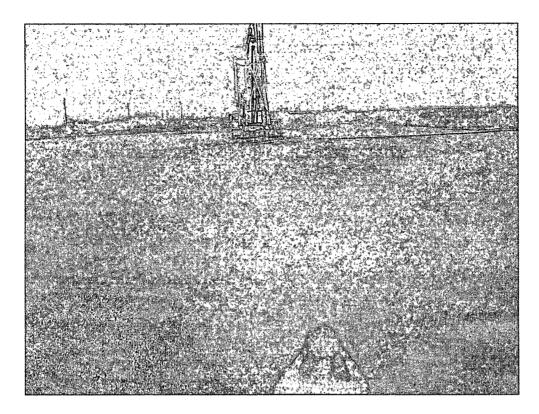
Form C-141 Revised October 10, 2003

NMOCD ARTESIA

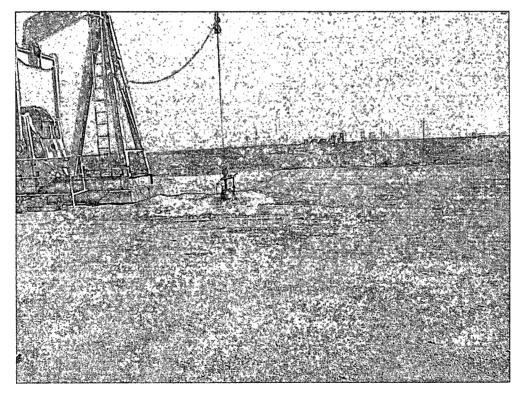
AUG 3 0 2012 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form side of form

			Rele	ase Notific	atio	n and Co	rrective A	ction			
						OPER.			nitial Report	_X I	Final Report
Name of Co		BOPCO, LI					Tony Savoie				
				sbad, NM 8822	0		No. (432) 556-	-8730			
Facility Nai	me Jame	s Ranch Uni	t #4 I			Facility Typ	e E&P				
Surface Ow	ner State			Mineral C	)wner:	State		Leas	e No. E5229		
				LOCA	TIO	N OF REI	LEASE				
Unit Letter N	Section 36	Township 22S	Range 30E	Feet from the	Nortl	n/South Line	Feet from the	East/West Lin	e County Eddy		
		La	titude <u>N</u>	32.343149		Longitu	de <u>W 103.8354</u>	67			
				NAT	'URE	OF REL	EASE				
Type of Rele	ease Produ	ced water and	crude oil			l l	Release:15 bbls vater and 5 bbls o	l l	e Recovered: 10		
Source of Re	lease: Pum	ping well stuff	ing box				Iour of Occurrenc		nd Hour of Disco 1 9:30 a.m.	very	
Was Immedi	ate Notice (		es No	X Not Required		If YES, To		•			
By Whom?						Date and F	lour:				
Was a Water	course Read	ched?	Yes 🗵	No		If YES, Vo	olume Impacting t	he Watercourse			
If a Waterco	urse was Im	pacted, Descr	ibe Fully.*						Ann. C. 11		
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	Summary a	and Risk-Base					iche well pad was tils of remediation				
regulations a public health should their of or the enviro	Il operators or the envi operations b nment. In a	are required tronment. The mave failed to a	o report ar acceptance dequately OCD accep	nd/or file certain rece of a C-141 report investigate and r	elease ort by tl emedia	notifications and ne NMOCD mate contaminati	knowledge and und perform correctarked as "Final Roon that pose a threethe operator of a	ctive actions for eport" does not eat to ground wa responsibility fo	releases, which nerelieve the operate ter, surface water compliance with	nay end for of li er, huma h any o	langer iability an health
			_				OIL CONS	SERVATIO	N DIVISION	1	
Signature:	1 Aur	Daw	ے دھ								ļ
Printed Name	$\overline{}$					Approved by	District Superviso	or:			-
Title: Waste	Mgmt. & F	Remediation S	pecialist			Approval Dat	e:	Expiration	on Date;		
E-mail Addre	ess: tasavoi	e@basspet.co	m			Conditions of	Approval:		Attached [		

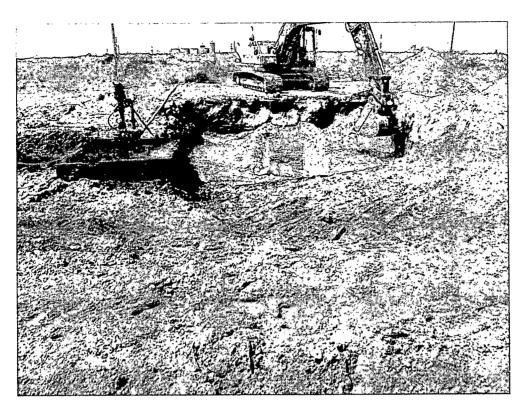
# Appendix B Photographs



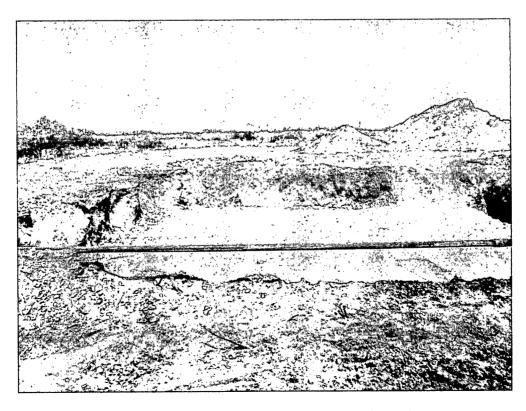
JRU #41 Release Site-Photograph of Initial Release



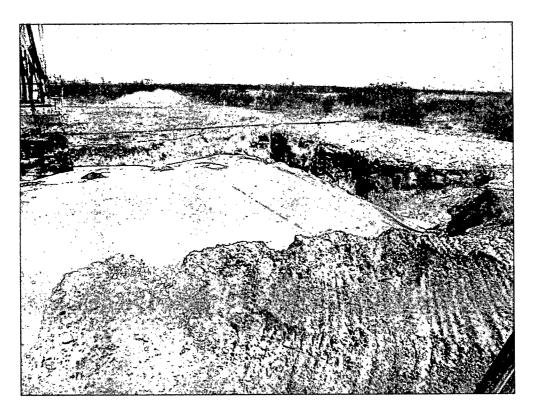
JRU #41 Release Site-Photograph of Initial Release



JRU #41 Release Site-Photograph of Excavation Activities



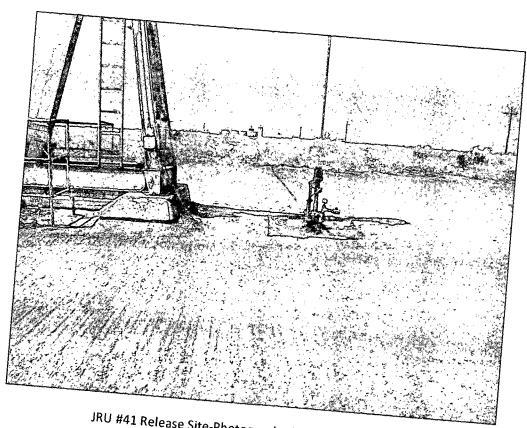
JRU #41 Release Site-Photograph of Installation of 20 mil Liner



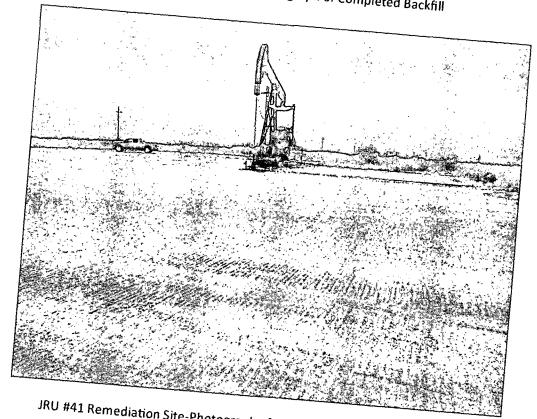
JRU #41 Release Site-Photograph of Backfilling Activities



JRU #41 Release Site-Photograph of Backfilling Activities



JRU #41 Release Site-Photograph of Completed Backfill



JRU #41 Remediation Site-Photograph of Completed Remediation Activities

## **Appendix C Laboratory Analytical Reports**



May 17, 2012

BEN J. ARGUIJO
Basin Environmental Service
P.O. Box 301
Lovington, NM 88260

RE: JRU 41

Enclosed are the results of analyses for samples received by the laboratory on 05/14/12 13:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited certif.html.

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

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg & Keine

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260 (575) 396-1429

Fax To:

Received:

05/14/2012

Reported:

05/17/2012 JRU 41

Project Name: Project Number:

NONE GIVEN

106 %

57.6-158

Project Location:

EDDY COUNTY, NM

Sampling Date:

05/11/2012

Sampling Type:

Soil

Sampling Condition:

Sample Received By:

Cool & Intact Jodi Henson

Sample ID: BACKFILL SAMPLE 1 (H201077-01)

BTEX 8021B	mg/	kg	Analyze	d By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/16/2012	ND	2.20	110	2.00	0.903	
Toluene*	<0.050	0.050	05/16/2012	ND	2.29	115	2.00	1.41	
Ethylbenzene*	<0.050	0.050	05/16/2012	ND	2.29	115	2.00	2.01	
Total Xylenes*	<0.150	0.150	05/16/2012	ND	7.09	118	6.00	2.34	
Surrogate: 4-Bromofluorobenzene (PID	113 9	% 64.4-13	4						
Chloride, SM4500Cl-B	mg /	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/15/2012	ND	416	104	400	10.9	
TPH 8015M	mg ,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/15/2012	ND	172	86.0	200	9.82	
DRO >C10-C28	<10.0	10.0	05/15/2012	ND	169	84.7	200	4.37	
EXT DRO >C28-C35	<10.0	10.0	05/15/2012	ND					
Surrogate: 1-Chlorooctane	98.3	% 55.5-15	4				· ·		

Cardinal Laboratories

Surrogate: 1-Chlorooctadecane

\*=Accredited Analyte

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alex Keens



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received: Reported: 05/14/2012

05/17/2012

Project Name:

JRU 41

Project Number:

NONE GIVEN

Sampling Date:

05/11/2012

Sampling Type:

Soil

Sampling Condition:

Cool & Intact Jodi Henson

Sample Received By:

Project Location:

EDDY COUNTY, NM

#### Sample ID: BACKFILL SAMPLE 2 (H201077-02)

BTEX 8021B	mg/l	cg .	Analyze	d By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/16/2012	ND	2.20	110	2.00	0.903	
Toluene*	<0.050	0.050	05/16/2012	ND	2.29	115	2.00	1.41	
Ethylbenzene*	<0.050	0.050	05/16/2012	ND	2.29	115	2.00	2.01	
Total Xylenes*	<0.150	0.150	05/16/2012	ND	7.09	118	6.00	2.34	
Surrogate: 4-Bromofluorobenzene (PID	112 %	64.4-13	4						
Chloride, SM4500Cl-B	mg/l	cg	Analyze	d By: HM			· · · · · ·		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	05/15/2012	ND	416	104	400	10.9	
TPH 8015M	mg/l	cg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/15/2012	ND	172	86.0	200	9.82	
DRO >C10-C28	<10.0	10.0	05/15/2012	ND	169	84.7	200	4.37	
EXT DRO >C28-C35	<10.0	10.0	05/15/2012	ND					
Surrogate: 1-Chlorooctane	92.5 %	6 55.5-15	4						
Surrogate: 1-Chlorooctadecane	100 %	6 57.6-15	8						

#### Cardinal Laboratories

\*=Accredited Analyte

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aligh Kuna



#### **Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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alleg to Keena



#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name	Basin Envi	conmental Service	Tech	nol	cgies. LLC			BI	LL TO					***************************************	ANAI	LYSIS	RE	QUE	ST			American Company of the Company of t
Project Manager							.O. #															
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Phone #: (575)		Fax #: (575) 3	96-1	429		А	ddre	ss: 52	2 w. Herr	nod												
Project#:		Project Owne	r: BO	PCO	, ip	c	ity:	Carlst	ad													
Project Name:	JRU 4					s	tate:	ым	Zip: 8822	0												
Project Location	EDDY A	/m				Р	hone	e#:(43	2)556-37	30												
Sampler Name:	Jody Wa	Heris		1000 C 427			ax.#:													İ		
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May 24, 2012

BEN J. ARGUIJO
Basin Environmental Service
P.O. Box 301
Lovington, NM 88260

RE: JAMES RANCH UNIT 41

Enclosed are the results of analyses for samples received by the laboratory on 05/23/12 8:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accred certif.html.

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

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

Accreditation applies to public drinking water matrices.

Celeg & Keine

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received: Reported: 05/23/2012

05/24/2012

Project Name:

JAMES RANCH UNIT 41

Project Number: Project Location:

EDDY COUNTY, NM

NONE GIVEN

Sampling Date:

05/22/2012

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

#### Sample ID: TRENCH FLOOR 2' SEC. 1 (H201162-01)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2760	16.0	05/23/2012	ND	416	104	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: MS				··-·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/23/2012	ND	196	98.2	200	12.3	
DRO >C10-C28	<10.0	10.0	05/23/2012	ND	194	97.1	200	12.3	
EXT DRO >C28-C35	<10.0	10.0	05/23/2012	ND					
Surrogate: 1-Chlorooctane	82.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	94.6	% 63.6-15	4						

#### Sample ID: TRENCH FLOOR 5' SEC. 1 (H201162-02)

Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM		<u> </u>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	₿S	% Recovery	True Value QC	RPD	Qualifier
Chloride	2200	16.0	05/23/2012	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS				-	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/23/2012	ND	196	98.2	200	12.3	
DRO >C10-C28	<10.0	10.0	05/23/2012	ND	194	97.1	200	12.3	
EXT DRO >C28-C35	<10.0	10.0	05/23/2012	ND					
Surrogate: 1-Chlorooctane	78.0 9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	90.0 9	% 63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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Celeg & Keena



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/23/2012

Sampling Date:

05/22/2012

Reported:

05/24/2012

Sampling Type:

Soil

Project Number:

JAMES RANCH UNIT 41

Sampling Condition:

Cool & Intact

Project Number: Project Location: NONE GIVEN

EDDY COUNTY, NM

Sample Received By:

Jodi Henson

#### Sample ID: TRENCH FLOOR 10' SEC. 1 (H201162-03)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1360	16.0	05/23/2012	ND	432	108	400	3.64	
TPH 8015M	mg ,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/23/2012	ND	196	98.2	200	12.3	
DRO >C10-C28	<10.0	10.0	05/23/2012	ND	194	97.1	200	12.3	
EXT DRO >C28-C35	<10.0	10.0	05/23/2012	ND					
Surrogate: 1-Chlorooctane	77.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	86.9	% 63.6-15	4						

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and clients exclusive remedy for any claim arising, whether based in contact or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed welved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunded by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal abovatories.

Celey & Frence



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received: Reported: 05/23/2012

05/24/2012

JAMES RANCH UNIT 41

Project Number: Project Location:

Project Name:

NONE GIVEN EDDY COUNTY, NM Sampling Date:

05/22/2012

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

#### Sample ID: TRENCH FLOOR 12' SEC. 1 (H201162-04)

BTEX 8021B	mg/	kg	Analyze	d By: AP			***		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/23/2012	ND	1.98	99.0	2.00	16.3	
Toluene*	<0.050	0.050	05/23/2012	ND	2.06	103	2.00	15.2	
Ethylbenzene*	<0.050	0.050	05/23/2012	ND	2.07	104	2.00	15.5	
Total Xylenes*	<0.150	0.150	05/23/2012	ND	6.41	107	6.00	14.7	
Surrogate: 4-Bromofluorobenzene (PID	113 %	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM			<del>-</del>		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	784	16.0	05/23/2012	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS		<u> </u>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/23/2012	ND	196	98.2	200	12.3	
DRO >C10-C28	<10.0	10.0	05/23/2012	ND	194	97.1	200	12.3	
EXT DRO >C28-C35	<10.0	10.0	05/23/2012	ND					
Surrogate: 1-Chlorooctane	88.8	% 65.2-14	10						
Surrogate: 1-Chlorooctadecane	99.6	% 63.6-15	14						

#### Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTH: Liability and Domoges. Cardinal's Bublity and client's exclusive remedy for any claim arising, whether based in contact or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed watered unless made in willing and received by Cardinal within thirty 30 days after completion of the applicable service. In no event shall be deemed without Cardinal willing and received by Cardinal within thirty 30 days after completion of the applicable service. In no event shall be deemed and the completion of the applicable service. In one event shall be deemed by Cardinal within thirty 30 days after completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the completion of the applicable service. In one event shall be deemed and the applicable service. In one event shall be deemed and the applicable service. In one event shall be deemed and the applicable service are applicable service. In one event shall be deemed and the applicable service are applicable service. In one event shall be deemed and the applicable service. In one event shall be dee

alex & Kunn



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/23/2012

Sampling Date:

05/22/2012

Reported:

05/24/2012

Sampling Type:

Soil

Project Name:

JAMES RANCH UNIT 41

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EDDY COUNTY, NM

#### Sample ID: SOUTH WALL SEC. 1 (H201162-05)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM		<del></del>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1140	16.0	05/24/2012	ND	432	108	400	3.64	
TPH 8015M	mg,	/kg	Analyze	d By: MS		<del>-</del>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/23/2012	ND	196	98.2	200	12.3	
DRO >C10-C28	<10.0	10.0	05/23/2012	ND	194	97.1	200	12.3	
EXT DRO >C28-C35	<10.0	10.0	05/23/2012	ND					
Surrogate: 1-Chlorooctane	83.5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	92.2	% 63.6-15	4						

#### Sample ID: NORTH WALL SEC. 1 (H201162-06)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	05/24/2012	ND	432	108	400	3.64	
TPH 8015M	mg/kg		Analyze	d By: MS	_		<u> </u>		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/23/2012	ND	196	98.2	200	12.3	
DRO >C10-C28	<10.0	10.0	05/23/2012	ND	194	97.1	200	12.3	
EXT DRO >C28-C35	<10.0	10.0	05/23/2012	ND					
Surrogate: 1-Chlorooctane	83.5	% 65.2-14	0					<del></del>	
Surrogate: 1-Chlorooctadecane	92.4	% 63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

all be limited to the amount paid by client for analyses. All claims, including those for neglig any other cause whatsoever shall be deemed walved unless made in witting and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, repardless of whether such claim is based upon any of the above stated reasons or otherwise, Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celegit Kreene



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received: Reported: 05/23/2012

05/24/2012

JAMES RANCH UNIT 41

Project Name: Project Number:

NONE GIVEN

Project Location:

EDDY COUNTY, NM

Sampling Date:

05/22/2012

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

#### Sample ID: EAST WALL SEC. 1 (H201162-07)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	768	16.0	05/24/2012	ND	432	108	400	3.64	
TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/23/2012	ND	196	98.2	200	12.3	
DRO >C10-C28	260	10.0	05/23/2012	ND	194	97.1	200	12.3	
EXT DRO >C28-C35	87.3	10.0	05/23/2012	ND					
Surrogate: 1-Chlorooctane	85.0 9	% 65.2-14	0					,	
Surrogate: 1-Chlorooctadecane	97.1	% 63.6-15	4						

#### Sample ID: WEST WALL SEC. 1 (H201162-08)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	752	16.0	05/24/2012	ND	432	108	400	3.64	
TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/23/2012	ND	196	98.2	200	12.3	
DRO >C10-C28	350	10.0	05/23/2012	ND	194	97.1	200	12.3	
EXT DRO >C28-C35	109	10.0	05/23/2012	ND					
Surrogate: 1-Chlorooctane	86.5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	102	% 63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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#### **Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

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alay E. Keenn



#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name	Basin Environmental Service	Techn	ologies, LLC	BILL TO					(Malliones)	ilimanulia ja	emerkanen L	NALYS	SIS RE	QUES	T	THE PERSONS	(and the second second second
Project.Manage	<sup>C</sup> Ben J. Arguijo	***************************************	· · · · · · · · · · · · · · · · · · ·	P.O. #;	TREE SPECIAL S	MANAGER AND				-	e Marcada C.						A STATE OF THE PARTY OF THE PAR
Address: P.O			**************************************	Compar	ny: B	OPCO, LP							İ				
City: Lovingt	on State: NM	Zip:	88260	Attn: 7	Гову	Savoie							-				
Phone#: (575		96-14	29	Address	5: 523	w. Mern	ಣಡೆ										
Project #:	Project Owne	r; BOP	CO, LP	City: Ca	rleb	ad											'
Project Name:	James Ranch Unit 41		<del>ngin dippog<b>gari</b>ng qu</del> an nyagin <del>min</del> ning pulitin ningan nina - anai <del>ng garag</del> a	State: N	IM	Zip: 88220	)							1 1			
1	EDDY AM.			Phone#	f; (43)	2)556-87	30										
	Jody Walters			Fax#:											-		
FOR LABUSE ONLY		TT	MATRIX	PRES	ERV.	SAMPLI	NG										
Lah I.D. H201162.	Sample I.D.	(G)RAB OR (C)OM	# CONTAINERS GROUNDWATER WASTEWATER SOIL OIL	OTHER · ACID/BASE:	OTHER:	DATE	TIME	Boism	Chlorides	BTEX	Bush						
	Trench Final 2' Sect	6	1   1   1			5-22-12	9:00	Χ	Х		1						
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PLEASE NOTE: Liabsty and Commaps. Clarical's a labely and electric exclusive remany by any claim strong metier based in control or fort, shift be lamited to the amount pound by the dated for the way.

analyses, As duint including those for negigence and any other course visible december washed vicios on the invaling and received by Canding! which 30 days also completed with applicable contest. In no event, shift Canding the fields for inclidental or convergenced dismaps, including transport inspiration, by service, loss of profes incurred by strong, as subsidiance,

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ŀ		080 9000		Please email results to pm@basinenv.com
Į	Delivered By/ (Circle One)//	Sample Condition   CHECKE	DET:	£ TAsavoie@BassPet.com
1		Cool Inlact (Infilin	ola)	
1	Sampler - UPS - Bus - Other:	Yes Li Yes	#"	4
Ĺ		□ No □ No □ No □ Lully	<u> </u>	

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



May 25, 2012

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JAMES RANCH UNIT 41

Enclosed are the results of analyses for samples received by the laboratory on 05/23/12 16:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited certif.html.

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

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

aleg theme

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/23/2012

Reported:

05/25/2012

Project Name:

JAMES RANCH UNIT 41

Project Number:

NONE GIVEN

Project Location:

EDDY COUNTY, NM

Sampling Date:

05/23/2012

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

#### Sample ID: N WALL 1' SEC 3 (H201173-01)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						<u> </u>
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/24/2012	ND	432	108	400	3.77	
TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/24/2012	ND	176	88.1	200	1.55	
DRO >C10-C28	<10.0	10.0	05/24/2012	ND	176	88.2	200	3.97	
EXT DRO >C28-C35	<10.0	10.0	05/24/2012	ND					
Surrogate: 1-Chlorooctane	83.3	% 65.2-14	10						

Surrogate: 1-Chlorooctadecane

91.3 %

63.6-154

#### Sample ID: S WALL 1' SEC 3 (H201173-02)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	05/24/2012	ND	432	108	400	3.77	
TPH 8015M	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/24/2012	ND	176	88.1	200	1.55	
DRO >C10-C28	<10.0	10.0	05/24/2012	ND	176	88.2	200	3.97	
EXT DRO >C28-C35	<10.0	10.0	05/24/2012	ND					
Surrogate: 1-Chlorooctane	86.3	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	99.6	% 63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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aleg & Keena



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/23/2012

05/25/2012

Sampling Date: Sampling Type: 05/23/2012

Reported: Project Name:

JAMES RANCH UNIT 41

Soil

Sampling Condition: Sample Received By: Cool & Intact

Project Number:

NONE GIVEN

Jodi Henson

Project Location:

EDDY COUNTY, NM

#### Sample ID: FLOOR 1 1/2' SEC 3 (H201173-03)

Chloride, SM4500CI-B	mg/kg		Analyze	Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	05/24/2012	ND	432	108	400	3.77	
TPH 8015M	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/24/2012	ND	176	88.1	200	1.55	
DRO >C10-C28	<10.0	10.0	05/24/2012	ND	176	88.2	200	3.97	
EXT DRO >C28-C35	<10.0	10.0	05/24/2012	ND					
Surrogate: 1-Chlorooctane	86.2	% 65.2-14	0	-					
Surrogate: 1-Chlorooctadecane	90.7	% 63.6-15	4						

#### Sample ID: W WALL 1' SEC 3 (H201173-04)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM				_	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	05/24/2012	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: MS				_	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/24/2012	ND	176	88.1	200	1.55	
DRO >C10-C28	<10.0	10.0	05/24/2012	ND	176	88.2	200	3.97	
EXT DRO >C28-C35	<10.0	10.0	05/24/2012	ND					
Surrogate: 1-Chlorooctane	83.4	% 65.2-14	o		•				
Surrogate: 1-Chlorooctadecane	92.9	% 63.6-15	4						

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\*=Accredited Analyte

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alex Keens



Basin Environmental Service

BEN J. ARGUIJO P.O. Box 301

Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/23/2012

Sampling Date:

05/23/2012

Reported:

05/25/2012

Sampling Type:

Soil

Project Name:

JAMES RANCH UNIT 41

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EDDY COUNTY, NM

#### Sample ID: E WALL 1' SEC 2 (H201173-05)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/25/2012	ND	432	108	400	3.77	
TPH 8015M	mg/kg		Analyzed By: MS					· · · · · · · · · · · · · · · · · · ·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/24/2012	ND	176	88.1	200	1.55	
DRO >C10-C28	<10.0	10.0	05/24/2012	ND	176	88.2	200	3.97	
EXT DRO >C28-C35	<10.0	10.0	05/24/2012	ND					
Surrogate: 1-Chlorooctane	84.9 %	6 65.2-14	0						
Surrogate: 1-Chlorooctadecane	92.6 %	6 63.6-15	4						

#### Sample ID: S WALL 1' SEC 2 (H201173-06)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	05/25/2012	ND	432	108	400	3.77	
TPH 8015M	mg/kg		Analyze	d By: MS			<u></u>		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/24/2012	ND	176	88.1	200	1.55	
DRO >C10-C28	<10.0	10.0	05/24/2012	ND	176	88.2	200	3.97	
EXT DRO >C28-C35	<10.0	10.0	05/24/2012	ND					
Surrogate: 1-Chlorooctane	82.6	% 65.2-14	10						
Surrogate: 1-Chlorooctadecane	88.4	% 63.6-15	i4						

#### Cardinal Laboratories

\*=Accredited Analyte

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Celegt Kuno



Basin Environmental Service BEN J. ARGUIJO P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received: Reported: 05/23/2012

05/25/2012

Project Name: Project Number: JAMES RANCH UNIT 41 NONE GIVEN

Project Location:

EDDY COUNTY, NM

Sampling Date:

05/23/2012

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

#### Sample ID: N WALL 1' SEC 2 (H201173-07)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM				·-		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	05/25/2012	ND	432	108	400	3.77	
TPH 8015M	mg/kg		Analyze	d By: MS			<u></u>		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/24/2012	ND	176	88.1	200	1.55	
DRO >C10-C28	<10.0	10.0	05/24/2012	ND	176	88.2	200	3.97	
EXT DRO >C28-C35	<10.0	10.0	05/24/2012	ND					
Surrogate: 1-Chlorooctane	82.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	91.9	% 63.6-15	4						

#### Sample ID: FLOOR 11/2' SEC 2 (H201173-08)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM	BS			RPD	
Analyte	Result	Reporting Limit	Analyzed	Method Blank		% Recovery	True Value QC		Qualifier
Chloride	32.0	16.0	05/25/2012	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/24/2012	05/24/2012 ND		88.1	200	1.55	
DRO >C10-C28	<10.0	10.0	05/24/2012	ND	176	88.2	200	3.97	
EXT DRO >C28-C35	<10.0	10.0	05/24/2012	ND					
Surrogate: 1-Chlorooctane	84.9	% 65.2-14	10						
Surrogate: 1-Chlorooctadecane	87.1	% 63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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Celeg & Keens



#### **Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Demages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in witting and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

aleg thema



#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name: Basin Environmental Service Technologies, LLC				BILL TO					ANALYSIS REQUEST											
Project Manager: Bén J. Arguljo				P.O. #:			ALLEY FOR THE STATE OF								1	T		COLUMN TO A STATE OF	T. W. 40 P. 44	
Address: P.O. Box 301				Company: BOPCO, LP			)													
City: Lovington State: NM Zip: 88260				Attn: Tony Savoie																
Phone #: (575) 396~2378 Fax #: (575) 396~1429				Address: 522 w. Mermod																
Project #: Project Owner: BOPCO, LP				City: Carlsbad																
Project Name: James Ranch Unit 41				State: NM Zip: \$8220																
Froject Location: EDDY NM					Phone #: (432) 556-8730							  -								
SamplerName: Jody Walters					Fáx:#:															
FOR 120 USE COLLY  Lab 1.D.  H20173	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER WASTEWATER SOIL OIL SLUDGE		ACID/BASE: LCE / COOL SERVICE / COOL COTHER CO	SAMPL DATE	TIME	Chloridos	Rossm			Van derfense van der der der der der der der der der der	And a Vertical Annual Control of the	AND THE RESIDENCE OF THE PROPERTY OF THE PROPE	de mandre de la companya de la companya de la companya de la companya de la companya de la companya de la comp	· Van der er mande er er er er er er er er er er er er er			
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2	South wall 1' Sec 3	G		Y		Y .	5-23-12	,	X	X										
73,	Floor 1'12' Sec 3	G		у		У	5-23-12	9:50	X	7				-					*******	
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5	EAST WELL I' Sec Z	G	11	<u> </u>		<u> </u>	5-23-12	1	X	1	<u> </u>								······································	
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	North Wall 1. Sec Z	G	Ŀİ	X	_	·····	5.23.12	<del></del>	X	1	ļ		ļ		ļ	<u> </u>	<u> </u>		^*************************************	
<u> </u>	Floor 1'z' Sec Z	G	-	- - X		X	5-23-12	10:40	ス	7	<b> </b>	ļ			<u> </u>	ļ	ļ			
		-	$\vdash \vdash$				<b></b>				<del> </del>	ļ	<b> </b>	<b> </b>	<b> </b>	<b> </b>	ļ			ļI
PLEASE NOTE: Lockway and Damage: Carchal's habely and clean's evolusive remiting in any clean among distinct hated incomings analyses. All cleans including throse tea negligance and any clade cause whateover shall be detimed wave I unless made in water and certifice. In no event shall Cordinal be fielde for incasental or consequential damages, including valvour limitation, businesses interrupt one, including valvour limitation or a preserver among out of or related to the performance of secretary of largery and participations. Reginguished By:    Date:   Regerved By:							unin 30 days of eafts kaneed by e above Astrore	i atur compictión as the applicable. L'hy cilient, its subsidiacies,												
† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-076.  Page																				