AE Order Number Banner

Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.

App Number: pGRL1312639922

1RP - 2915

FASKEN OIL & RANCH LTD

7/26/2016

Basin Environmental Service Technologies, LLC

3100 Plains Highway
P. O. Box 301
Lovington, New Mexico 88260
jwlowry@basinenv.com
Office: (575) 396-2378 Fax: (575) 396-1429

Effective Solutions

REMEDIATION SUMMARY &

RISK-BASED SITE CLOSURE PROPOSAL

FASKEN OIL AND RANCH, Ltd.
DENTON SWD #3
Lea County, New Mexico
Unit Letter "M" (SW/SW), Section 12, Township 15 South, Range 37 East
Latitude 33.023724° North, Longitude -103.159774° West
NMOCD Reference #1RP-N/A

Prepared For:

approved w/condition

Fasken Oil and Ranch, Ltd.
303 West Wall, Suite 1800
Midland, TX 79701

Geoffrey Leking
Environmental Specialist
6/19/13

- Perform boring to define vertical contamination

Prepared By:

Basin Environmental Service Technologies, LLC
3100 Plains Highway
Lovington, NM 88260

June 2013

Joel W. Lowry
Project Manager

2915

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INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin), on behalf of Fasken Oil and Ranch, Ltd. (Fasken), has prepared this *Remediation Summary & Risk-Based Site Closure Proposal* for the release site known as Denton SWD #3. The legal description of the release site is Unit Letter "M" (SW/SW), Section 12, Township 15 South, Range 37 East in Lea County, New Mexico. The geographic coordinates of the release site are 33.023724° North latitude and -103.159774° West longitude. The property affected by the release is owned by Mr. Darr Angel.

On April 29, 2013, Fasken discovered a release had occurred at the Denton SWD #3. The release was attributed to the failure of a four inch (4") vietaulic clamp. The pump shut down immediately due to low pressure. The site was dug out, and the clamp was replaced. The "Release Notification and Corrective Action" (Form C-141) indicated approximately twenty (20) barrels of produced water were released. The release impacted an area of pasture measuring approximately one hundred feet (100') in length and seventy-five (75') in width.

Please reference Figure 1 for a "Site Location Map". The Form C-141 is provided as Appendix A. General photographs of the release site are provided as Appendix B.

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) indicates groundwater should be encountered at approximately fifty-nine feet (59') below ground surface (bgs). Based on the NMOCD ranking system, ten (10) points will be assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no domestic 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 Denton SWD #3 release site has an initial ranking score of ten (10) points. The soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- Benzene, Toluene, Ethylbenzene and Xylene (BTEX) – 50 mg/Kg (ppm)
- Total Petroleum Hydrocarbons (TPH) – 1,000 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.

SUMMARY OF SOIL REMEDIATION ACTIVITIES

On May 13, 2013, Basin responded to the release site. A series of test trenches (TT-1 and TT-2) were advanced in an effort to determine the vertical and horizontal extent of soil impact. TT-1 was advanced south western portion of the release flowpath within an inferred pooling area. TT-1 was advanced to approximately three and one-half feet (3.5') bgs. During the advancement of the test trench, (2) soil samples (TT-1 @ Surface and TT-1 @ 3.5') were collected and submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicated BTEX concentrations were less than the laboratory method detection limit (MDL) for each of the submitted soil samples. TPH concentrations ranged from 23.6 mg/kg for soil sample TT-1 @ Surface to less than the laboratory MDL for soil sample TT-1 @ 3.5'. Chloride concentrations ranged from 6,400 mg/kg for soil sample TT-1 @ Surface to 3,960 mg/kg for soil sample TT-1 @ 3.5'. Further advancement of TT-1 was impracticable due to the presence of an impenetrable rock layer encountered at three and one-half feet (3.5') bgs.

Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chlorides in Soil". A "Site & Sample Location Map" is provided as Figure 2. Laboratory analytical reports are provided as Appendix C.

TT-2 was advanced approximately ninety-five feet (95') to the northeast of TT-1 within an inferred pooling area. TT-2 was advanced to approximately two feet (2') bgs. During the advancement of the test trench, (2) soil samples (TT-2 @ Surface and TT-2 @ 2) were collected and submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicated BTEX and TPH concentrations were less than the appropriate laboratory MDL for each of the submitted soil samples. Chloride concentrations ranged from 64.0 mg/kg for soil sample TT-2 @ Surface to 3,000 mg/kg for soil sample TT-1 @ 3.5'. Further advancement of TT-2 was impracticable due to the presence of an impenetrable rock layer at two feet (2') bgs.

PROPOSED ACTIVITIES

Fasken proposes the following risk-based strategy to progress the Denton SWD #3 release site toward an NMOCD-approved closure:

- The floor of the excavation will be advanced to the hard rock layer commonly encountered between two feet (2') to five feet (5') bgs. The excavation sidewalls will be advanced until laboratory analytical results from confirmation soil samples indicate concentrations of BTEX, TPH and chloride are below NMOCD Regulatory Standards. Confirmation soil samples will be collected at approximately fifty foot (50') intervals from the excavation floor and sidewalls. Collected soil samples will be submitted to Cardinal Laboratories for analysis of BTEX, TPH, and chlorides using EPA methods SW-846 8021b, SW-846 8015M, and 4500 Cl-B, respectively. Excavation will continue until laboratory analytical results indicate BTEX concentrations are less than 50 mg/Kg, TPH concentrations are less than 1,000 mg/Kg, and chloride concentrations are less than 500 mg/Kg.

- Excavated soil exhibiting concentrations of BTEX, TPH and chloride above NMOCD Regulatory Standards will be transported to Gandy Marley, Inc. (NMOCD Permit # DP-1041), for disposal.

- Once laboratory analytical results from confirmation sidewall soil samples have confirmed that concentrations of BTEX, TPH and chloride are below NMOCD Regulatory Standards, the floor of the excavation will be lined with an approximate one foot (1') layer of clay. The remaining portion of the excavation will be backfilled with locally purchased, non-impacted material and graded to match the surrounding topography.

- Reseeding of the site with vegetation acceptable to the landowner will take place at the conclusion of the proposed remediation activities.

REPORTING

On review and approval of this proposal by the NMOCD, Fasken is prepared to begin field activities and perform the corrective actions summarized in this *Remediation Summary & Risk-Based Site Closure Proposal*. Upon completion of the corrective actions, Fasken will submit a *Remediation Summary & Risk-Based Site Closure Request* to the NMOCD, documenting remediation activities and results of confirmation soil samples.

LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Risk-Based Site Closure Proposal* 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 Fasken Oil and Ranch, Ltd. 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 Fasken Oil and Ranch, Ltd.

DISTRIBUTION:

Copy 1: Geoffrey Leking
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division (District 1)
1625 N. French Dr.
Hobbs, NM 88240

Copy 2: Jimmy Carlile
Fasken Oil and Ranch, Ltd.
303 West Wall, Suite 1800
Midland, TX 79701

Copy 3: Basin Environmental Service Technologies, LLC
P.O. Box 301
Lovington, NM 88260

FIGURES

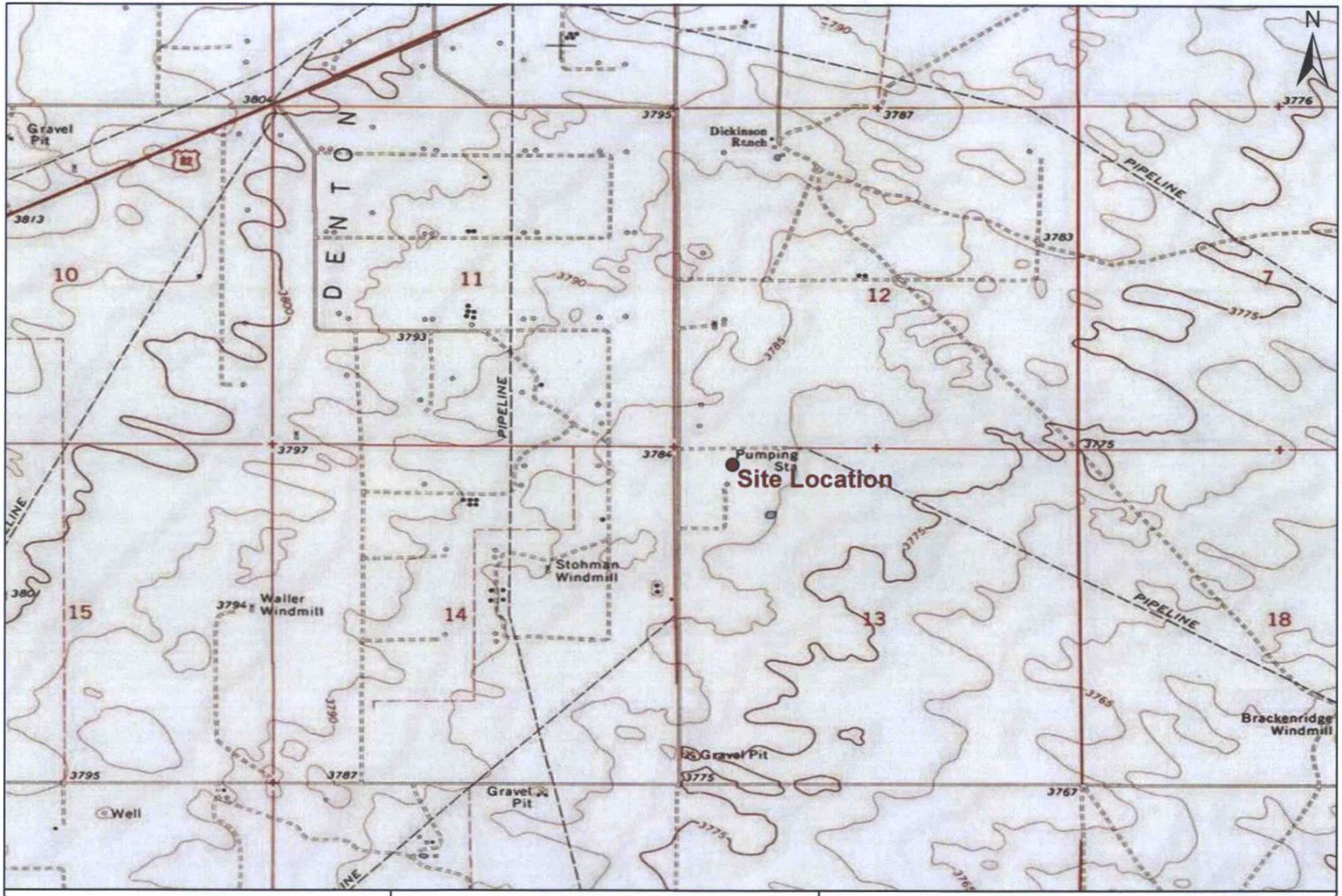
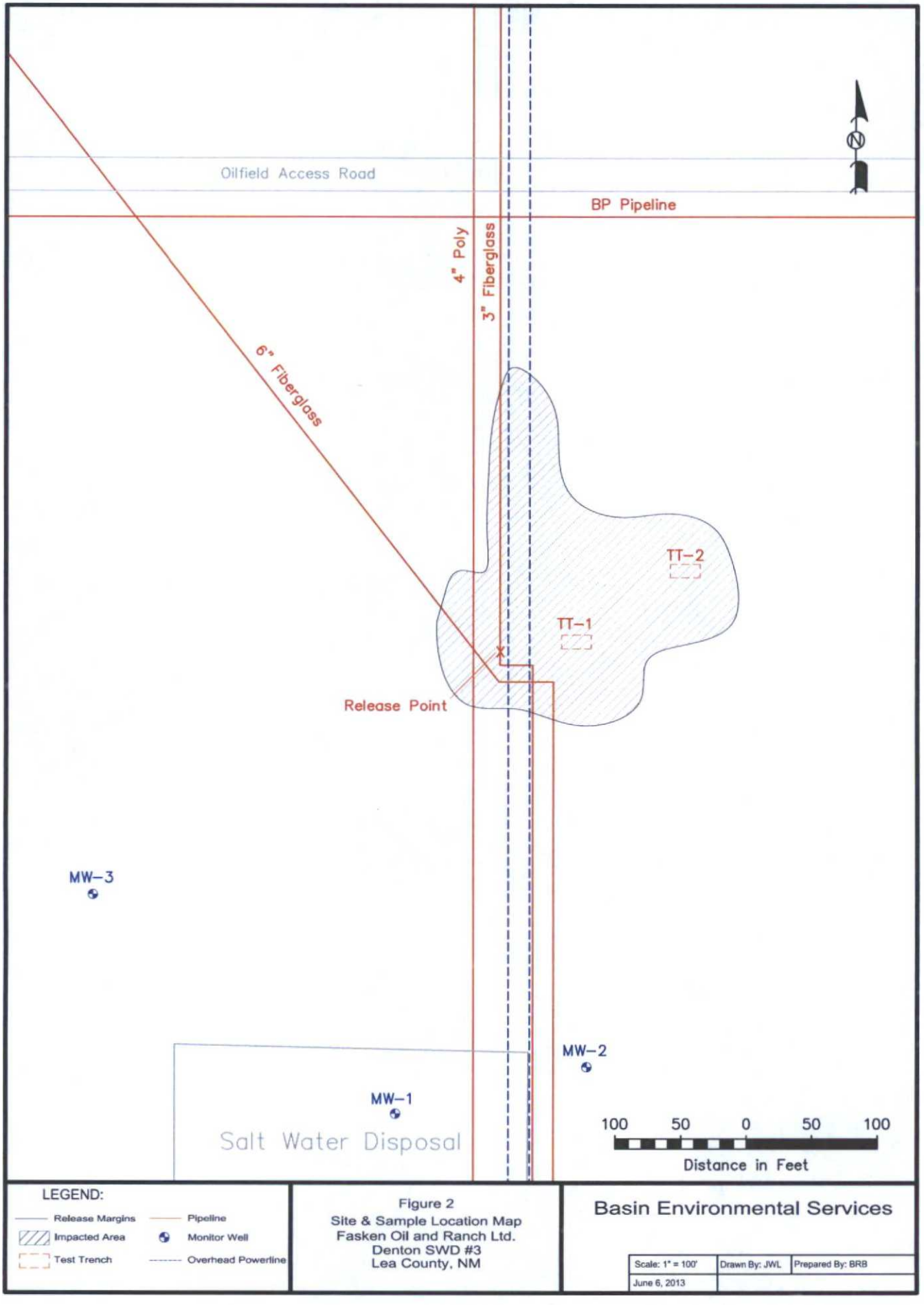


Figure 1
Site Location Map
Fasken Oil & Ranch, Ltd.
Denton SWD #3
Lea County, New Mexico

Basin Environmental Service Technologies
Effective Solutions

Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

Drawn By: BJA	Checked By: JWL
June 6, 2013	Scale: 1" = 2000'


Oilfield Access Road
BP Pipeline
4" Poly
3" Fiberglass
6" Fiberglass
TT-2
TT-1
Release Point
MW-3
MW-2
MW-1
Salt Water Disposal
100 50 0 50 100
Distance in Feet
LEGEND:
Release Margins
Pipeline
Impacted Area
Monitor Well
Test Trench
Overhead Powerline
Figure 2
Site & Sample Location Map
Fasken Oil and Ranch Ltd.
Denton SWD #3
Lea County, NM
Basin Environmental Services
Scale: 1" = 100'
Drawn By: JWL
Prepared By: BRB
June 6, 2013

TABLES

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

FASKEN OIL AND RANCH
DENTON SWD #3
LEA COUNTY, NEW MEXICO
NMOCD REF# 1RP-N/A

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030					METHOD: 8015M			TOTAL TPH C_6-C_{28} (mg/Kg)	EPA: 300
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C_6-C_{12} (mg/Kg)	DRO C_{12}-C_{28} (mg/Kg)	ORO C_{28}-C_{35} (mg/Kg)		CHLORIDE (mg/Kg)
TT-1 @ Surface	Surface	5/13/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	23.6	<10.0	<10.0	23.6	**6,400**
TT-1 @ 3.5'	3.5'	5/13/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	**3,960**
TT-2 @ Surface	Surface	5/13/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	64.0
TT-2 @ 2'	2'	5/13/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	**3,000**
NMOCD Standard				**10**				**50**				**1,000**	**250**

- = Not analyzed.

APPENDICES

Appendix A

Release Notification and Corrective Action
(Form C-141)

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Fasken Oil and Ranch, Ltd.	Contact Jimmy D. Carlile
Address 6101 Holiday Hill Rd., Midland, TX 79707	Telephone No. 432-687-1777
Facility Name Denton SWD No. 3	Facility Type SWD Injection Line

Surface Owner Darr Angell	Mineral Owner Fee	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	12	15S	37E	660'	South	330'	West	Lea

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 20	Volume Recovered 0
Source of Release Injection Line	Date and Hour of Occurrence	Date and Hour of Discovery 4-29-13
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom? Fax report upon receiving data.	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

4" vietaulic clamp corroded and broke. Pump shut down immediately due to low pressure. Site dug out and clamp replaced.

Describe Area Affected and Cleanup Action Taken.*

Pasture area approximately 100' X 75' affected. Plan will be proposed to OCD to dig out to hard caliche layer, line and backfill with clean material.

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

Signature: Jimmy D Carlile	OIL CONSERVATION DIVISION
Printed Name: Jimmy D. Carlile	Approved by Environmental Specialist:
Title: Regulatory Affairs Coordinator	Approval Date: / Expiration Date:
E-mail Address: jimmyc@forl.com	Conditions of Approval: / Attached ☐
Date: 5-1-2013 Phone: 432-687-1777	

* Attach Additional Sheets If Necessary

Appendix B

Photographs

Photograph of the release at the Denton SWD #3 Environmental Remediation Site.

Appendix C

Laboratory Analytical Reports

CARDINAL Laboratories

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

May 15, 2013

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: DENTON SWD #3

Enclosed are the results of analyses for samples received by the laboratory on 05/14/13 9:25.

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 www.tceq.texas.gov/field/qa/lab_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.

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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/14/2013	Sampling Date:	05/13/2013
Reported:	05/15/2013	Sampling Type:	Soil
Project Name:	DENTON SWD #3	Sampling Condition:	Cool & Intact
Project Number:	FASKEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: TT-1 @ SURFACE (H301149-01)

BTEX 8021B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/15/2013	ND	2.03	101	2.00	6.60	
Toluene*	<0.050	0.050	05/15/2013	ND	1.84	92.2	2.00	6.17	
Ethylbenzene*	<0.050	0.050	05/15/2013	ND	1.98	99.1	2.00	5.16	
Total Xylenes*	<0.150	0.150	05/15/2013	ND	5.91	98.5	6.00	5.31	
Total BTEX	<0.300	0.300	05/15/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg Analyzed By: DW

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**6400**	16.0	05/14/2013	ND	432	108	400	0.00	

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	05/14/2013	ND	211	106	200	1.96	
DRO >C10-C28	**23.6**	10.0	05/14/2013	ND	208	104	200	1.47	
EXT DRO >C28-C35	<10.0	10.0	05/14/2013	ND					

Surrogate: 1-Chlorooctane *111 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *120 %* *63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/14/2013	Sampling Date:	05/13/2013
Reported:	05/15/2013	Sampling Type:	Soil
Project Name:	DENTON SWD #3	Sampling Condition:	Cool & Intact
Project Number:	FASKEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: TT-1 @ 3.5' (H301149-02)

BTEX 8021B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/15/2013	ND	2.03	101	2.00	6.60	
Toluene*	<0.050	0.050	05/15/2013	ND	1.84	92.2	2.00	6.17	
Ethylbenzene*	<0.050	0.050	05/15/2013	ND	1.98	99.1	2.00	5.16	
Total Xylenes*	<0.150	0.150	05/15/2013	ND	5.91	98.5	6.00	5.31	
Total BTEX	<0.300	0.300	05/15/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3960**	16.0	05/14/2013	ND	432	108	400	0.00	

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	05/14/2013	ND	211	106	200	1.96	
DRO >C10-C28	<10.0	10.0	05/14/2013	ND	208	104	200	1.47	
EXT DRO >C28-C35	<10.0	10.0	05/14/2013	ND					

Surrogate: 1-Chlorooctane *113 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *121 %* *63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/14/2013	Sampling Date:	05/13/2013
Reported:	05/15/2013	Sampling Type:	Soil
Project Name:	DENTON SWD #3	Sampling Condition:	Cool & Intact
Project Number:	FASKEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: TT-2 @ SURFACE (H301149-03)

BTEX 8021B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/15/2013	ND	2.03	101	2.00	6.60	
Toluene*	<0.050	0.050	05/15/2013	ND	1.84	92.2	2.00	6.17	
Ethylbenzene*	<0.050	0.050	05/15/2013	ND	1.98	99.1	2.00	5.16	
Total Xylenes*	<0.150	0.150	05/15/2013	ND	5.91	98.5	6.00	5.31	
Total BTEX	<0.300	0.300	05/15/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	05/14/2013	ND	432	108	400	0.00	

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	05/14/2013	ND	211	106	200	1.96	
DRO >C10-C28	<10.0	10.0	05/14/2013	ND	208	104	200	1.47	
EXT DRO >C28-C35	<10.0	10.0	05/14/2013	ND					

Surrogate: 1-Chlorooctane *111 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *120 %* *63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/14/2013	Sampling Date:	05/13/2013
Reported:	05/15/2013	Sampling Type:	Soil
Project Name:	DENTON SWD #3	Sampling Condition:	Cool & Intact
Project Number:	FASKEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: TT-2 @ 2' (H301149-04)

BTEX 8021B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/15/2013	ND	2.03	101	2.00	6.60	
Toluene*	<0.050	0.050	05/15/2013	ND	1.84	92.2	2.00	6.17	
Ethylbenzene*	<0.050	0.050	05/15/2013	ND	1.98	99.1	2.00	5.16	
Total Xylenes*	<0.150	0.150	05/15/2013	ND	5.91	98.5	6.00	5.31	
Total BTEX	<0.300	0.300	05/15/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3000**	16.0	05/14/2013	ND	432	108	400	0.00	

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	05/14/2013	ND	211	106	200	1.96	
DRO >C10-C28	<10.0	10.0	05/14/2013	ND	208	104	200	1.47	
EXT DRO >C28-C35	<10.0	10.0	05/14/2013	ND					

Surrogate: 1-Chlorooctane *107 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *114 %* *63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

LAB Order ID # _____ Page 1 of 5

Cardinal Laboratories

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

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Company Name:	Basin Environmental Service Technologies, LLC	Phone #:	(575)396-2378
Address:	P.O. Box 301 Lovington, NM 88260	Fax #:	(575)396-1429
Contact Person:		E-mail:	pm@ basinenv.com
Invoice to:	Basin Environmental Service Technologies, LLC		
Project #:	Fasken	Project Name:	Denton SWD #3
Project Location: (include state)	Lea Co., NM	Sampler Signature:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB ID (LAB USE)	SAMPLE ID	(G)RAB or (C)OMP	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	THP	Chloride	BTEX	Turn Around Time if different from standard	Hold
H30149																				
1	TT-1 @ Surface	G	1		X							X		5/13/13	1105	X	X	X		
2	TT-1 @ 3.5'	G	1		X							X		5/13/13	1120	X	X	X		
3	TT-2 @ Surface	G	1		X							X		5/13/13	1130	X	X	X		
4	TT-2 @ 2'	G	1		X							X		5/13/13	1145	X	X	X		

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
[signature]		5-13-13	4:45	[signature]		5.13.13	4:45	INST _____ OBS _____ °C COR _____ °C
[signature]		5-14-13	9:25	Rodi Henson		5/14/13	9:25	INST 54 OBS _____ °C COR 2.6 °C
								INST _____ OBS _____ °C COR _____ °C

LAB USE ONLY

Intact Y / N

Headspace Y / N /NA

Log-in Review _____

REMARKS:

☐ Dry Weight Basis Required

☐ TRRP Report Required

☐ Check If Special Reporting Limits Are Needed

Carrier # _____

Submittal of samples constitutes agreement to Terms and Conditions

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