

# *Basin Environmental Service Technologies, LLC*

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## **REMEDIATION SUMMARY & SITE CLOSURE REQUEST**

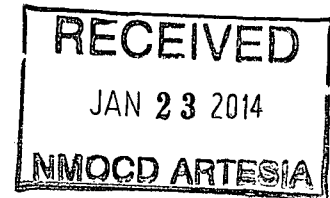
**BOPCO, LP**  
**BASS 3 FEDERAL BATTERY #1**  
**Eddy County, New Mexico**  
**Unit Letter "P" (NE/SE), Section 3, Township 22 South, Range 28 East**  
**Latitude 32.415370° North, Longitude 104.06990° West**


Prepared For: 2RP-996  
2RP-997  
2RP-1102  
BOPCO, LP 2RP-1103

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

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

August 2013



  
\_\_\_\_\_  
Ben J. Arguijo  
Project Manager

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## 1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of BOPCO, LP (BOPCO), has prepared this *Remediation Summary & Risk-Based Site Closure Request* for the release site known as Bass 3 Federal Battery #1. The legal description of the release site is Unit Letter "P" (SE/SE), Section 3, Township 22 South, Range 28 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.415370° North latitude and 104.06990° West longitude. The property affected by the release is owned by the United States Department of the Interior - Bureau of Land Management (BLM). Please reference Figure 1 for a "Site Location Map".

On January 3, 2012, BOPCO discovered a release (Release #1) had occurred at Bass 3 Federal Battery #1. A hole in the bottom of an on-site production tank resulted in a release of crude oil. The release was confined to the earthen containment area surrounding the tank battery.

The release was reported to the New Mexico Oil Conservation Division (NMOCD) Artesia District Office on January 4, 2012. The "Release Notification and Corrective Action" (Form C-141) indicated approximately twenty barrels (20 bbls) of crude oil were release. During initial response activities, a vacuum truck was utilized to recover approximately five barrels (5 bbls) of crude oil. The release affected an area inside the earthen containment berm measuring approximately two thousand, four hundred and thirty square feet (2,430 ft<sup>2</sup>) and commingled with an area impacted by a series of historical releases of crude oil and produced water.

On January 11, 2012, BOPCO discovered a second release (Release #2) had occurred at Bass 3 Federal Battery #1. A two-inch (2") pipeline from the heater treater to the on-site storage tanks developed a leak, resulting in a release of crude oil and produced water. The leak was attributed to external corrosion. The release was confined to the earthen containment area surrounding the tank battery.

The release was immediately reported to the NMOCD Artesia District Office. The Form C-141 indicated approximately sixty-five barrels (65 bbls) of produced water and less than five barrels (<5 bbls) of crude oil were released. During initial response activities, a vacuum truck was utilized to recover approximately sixty barrels (60 bbls) of produced water and approximately two barrels (2 bbls) of crude oil. The release affected an area inside the earthen containment berm measuring approximately two thousand square feet (2,000 ft<sup>2</sup>) and commingled with the area impacted by Release #1.

On March 27, 2012, BOPCO discovered a third release (Release #3) had occurred at Bass 3 Federal Battery #1. Two (2) loads of produced water were unloaded into the on-site produced water tank without prior approval from BOPCO. The water transfer pump malfunctioned and failed to discharge the excess water into a nearby salt water disposal system. The excess water, combined with the nightly crude oil and water production to the facility, caused an on-site storage tank to overflow, resulting in a release of crude oil.

The release was reported to the NMOCD Artesia District Office on April 9, 2012. The Form C-141 indicated approximately fifteen barrels (15 bbls) of crude oil were released. The release impacted the area affected by Release #1 and Release #2, for which remediation activities had been completed on March 7, 2012.

On April 3, 2012, BOPCO discovered a fourth release (Release #4) had occurred at Bass 3 Federal Battery #1. A three-quarter-inch (3/4") air eliminator on the water transfer pump broke in half due to a manufacturing defect, resulting in a release of produced water. The majority of the release was confined to the impermeable polyurethane containment area surrounding the tank battery, which had been installed at the site just prior to the release.

The release was reported to the NMOCD Artesia District Office on April 9, 2012. The Form C-141 indicated approximately two hundred and eighty-five barrels (285 bbls) of produced water were released. During initial response activities, the faulty air eliminator was replaced, and a vacuum truck was utilized to recover approximately two hundred and eighty barrels (280 bbls) of produced water.

The four (4) releases were remediated concurrently. The Forms C-141 are provided as Appendix A. General photographs of the release site(s) 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 3, Township 22 South, Range 28 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately one hundred and fifteen feet (115') to one hundred and twenty feet (120') below ground surface (bgs). Gauging data collected from a nearby monitor well indicates the depth to groundwater is approximately one hundred and nine feet (109') 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 one thousand feet (1,000') 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 one thousand feet (1,000') 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 Bass 3 Federal Battery #1 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)
- Benzene, ethylbenzene, toluene, and xylenes (BTEX) – 50 mg/Kg (ppm)
- Total petroleum hydrocarbons (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

Following initial response activities, from January 16 through January 17, 2012, three (3) soil borings (SB-1, SB-2, and SB-3) were advanced inside the earthen containment area surrounding the Bass 3 Federal Battery #1 in order to investigate the vertical extent of soil impacted by Release #1 and Release #2. Soil samples were collected at five-foot (5') drilling intervals and field-screened using a Photo-Ionization Detector (PID) and/or chloride test kit. Selected soil samples were submitted to Cardinal Laboratories in Hobbs, New Mexico, for analysis of BTEX, TPH, and/or chloride concentrations in accordance with Environmental Protection Agency (EPA) Methods SW-846 8021b, SW-846 8015M, and 4500 Cl-B, respectively. Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chloride in Soil". A "Site & Sample Location Map" is provided as Figure 2. Soil boring logs are provided as Appendix C. Laboratory analytical reports are provided as Appendix D.

Soil boring SB-1 was located to the east of the two (2) on-site crude oil storage tanks. The soil boring was advanced to a total depth of approximately sixty feet (60') bgs. Soil samples collected at drilling depths of five feet (5'), ten feet (10'), twenty feet (20'), thirty feet (30'), forty feet (40'), fifty-five feet (55'), and sixty feet (60') bgs were submitted to the laboratory for analysis of BTEX, TPH, and/or chloride concentrations. Laboratory analytical results indicated BTEX constituent concentrations were less than the appropriate laboratory method detection limit (MDL) in all submitted soil samples. TPH concentrations ranged from 35.4 mg/kg in soil sample SB-1 @ 60' to 3,008 mg/kg in soil sample SB-1 @ 5'. Chloride concentrations ranged from 16.0 mg/kg in soil sample SB-1 @ 60' to 1,540 mg/kg in soil sample SB-1 @ 20'.

Soil boring SB-2 was located near the on-site water transfer pump. The soil boring was advanced to a total depth of approximately one hundred feet (100') bgs. Soil samples collected at drilling depths of five feet (5'), ten feet (10'), twenty feet (20'), fifty feet (50'), seventy-five feet (75'), ninety-five feet (95'), and one hundred feet (100') bgs were submitted to the laboratory for analysis of BTEX, TPH, and/or chloride concentrations. Laboratory analytical results indicated BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples. TPH concentrations were less than the laboratory MDL in all submitted soil samples, with the exception of soil sample SB-2 @ 100', which exhibited a TPH concentration of 11.9 mg/kg. Chloride concentrations ranged from 48.0 mg/kg in soil sample SB-2 @ 95' to 2,360 mg/kg in soil sample SB-2 @ 50'.

Soil boring SB-3 was located midway between the heater treater and the westernmost produced water tank. The soil boring was advanced to a total depth of approximately forty-five feet (45') bgs. Soil samples collected at drilling depths of five feet (5'), ten feet (10'), twenty-five feet (25'), forty feet (40'), and forty-five feet (45') bgs were submitted to the laboratory for analysis of BTEX, TPH, and/or chloride concentrations. Laboratory analytical results indicated BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples. TPH concentrations were less than the laboratory MDL in all submitted soil samples, with the exception of soil sample SB-3 @ 5', which exhibited a TPH concentration of 40.9 mg/kg. Chloride concentrations ranged from 64.0 mg/kg in soil sample SB-3 @ 45' to 1,840 mg/kg in soil sample SB-3 @ 10'.

On February 21, 2012, excavation of soil impacted by Release #1 and Release #2 commenced at the site. A chloride field test kit was used to field-screen the horizontal extent of impacted soil and to guide the excavation. From February 21 through March 2, 2012, excavated soil was stockpiled on-site, pending final disposition. To preserve the structural integrity of the on-site storage tanks, the excavation was limited to a depth of six inches (6") to one foot (1') bgs. The boundaries of the excavation are depicted in Figure 2 as "Excavation 1".

From March 1 through March 2, 2012, approximately two hundred and sixty cubic yards (260 yd<sup>3</sup>) of impacted soil was transported to Lea Land, Inc. (NMOCD Permit # WM-01-035), for disposal.

On March 5, 2012, six (6) soil samples (Sample #1 through Sample #6) were collected from the floor of the excavation and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from 158 mg/kg in Sample #4 to 26,130 mg/kg in Sample #3. Chloride concentrations ranged from 2,440 mg/kg in Sample #1 to 11,100 mg/kg in Sample #6. Soil sample locations are depicted in Figure 2.

Based on laboratory analytical results and field-screens, from March 5 through March 7, 2012, Excavation #1 was backfilled with non-impacted material, water-packed, and contoured to fit the surrounding grade.

On March 27, 2012, immediately following discovery of Release #3, Basin Environmental was dispatched to the location to begin excavation of the impacted soil. From March 27 through March 30, 2012, approximately two hundred and ten cubic yards (210 yd<sup>3</sup>) of visibly stained, heavily impacted soil was excavated and transported to Lea Land, Inc., for disposal. The boundaries of the excavation are depicted in Figure 2 as "Excavation 2".

On March 29, 2012, four (4) soil samples (Sample #1 through Sample #4) were collected from the floor of the excavation and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations ranged from 74.6 mg/kg in Sample #2 to 621 mg/kg in Sample #1.

From March 29 through March 30, 2012, Excavation #2 was backfilled with non-impacted material, water-packed, and contoured to fit the surrounding grade.

Immediately following remediation activities, a new, steel-walled containment area was constructed around Bass 3 Federal Battery #1 to mitigate future releases. A felt liner was installed in the floor of the new containment area, and the floor and perimeter walls were coated with an impermeable, spray-on polyurethane liner. The steel perimeter walls extend approximately two feet (2') above ground surface.

On April 16, 2012, excavation of Release #4 commenced. A chloride field test kit was used to field-screen the horizontal extent of impacted soil and to guide the excavation. From April 16 through April 17, 2012, approximately one hundred and eight cubic yards (108 yd<sup>3</sup>) of impacted soil was excavated and transported to Lea Land, Inc., for disposal. The boundaries of the excavation are depicted in Figure 2 as "Excavation 3".

On April 17, 2012, five (5) soil samples (Sample #1 through Sample #5) were collected from the floor of the excavation and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 288 mg/kg in Sample #5 to 656 mg/kg in Sample #1. Soil sample locations are depicted in Figure 2.

Based on field-screens, from April 17 through April 18, 2012, Excavation #3 was backfilled with non-impacted material, water-packed, and contoured to fit the surrounding grade.

#### **4.0 QA/QC PROCEDURES**

##### **4.1 Soil Sampling**

Soil samples were delivered to Cardinal Laboratories, Inc., in Hobbs, New Mexico, for 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**

The Bass 3 Federal Battery #1 releases were excavated to the extent practicable. During the course of remediation activities, a steel-walled containment area was constructed around the tank battery, and the floor and perimeter walls were coated with a spray-on polyurethane liner. This engineered control will help mitigate future releases and effectively inhibit vertical migration of contaminants to groundwater. In-situ soil exhibiting chloride and/or TPH contamination above the regulatory remediation action levels established for the site will be remediated upon decommission and/or abandonment of the currently active tank battery.

Basin Environmental recommends BOPCO provide the NMOCD Artesia District Office and BLM a copy of this *Remediation Summary & Risk-Based Site Closure Request* and request the NMOCD grant site closure to the Bass 3 Federal Battery #1 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 Environmental has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin Environmental has not conducted an independent examination of the facts contained in referenced materials and statements. Basin Environmental has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin Environmental has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental 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.

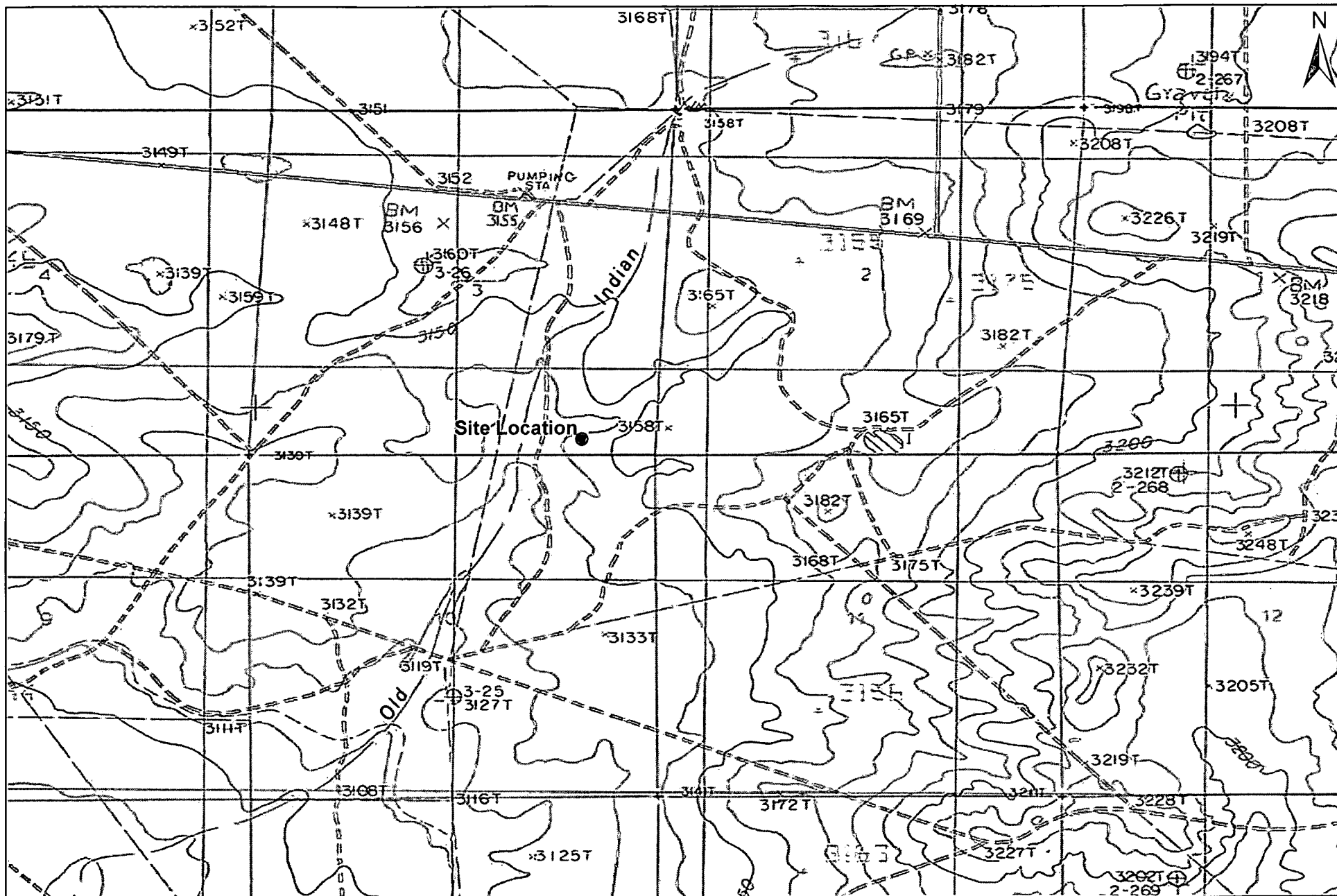
This report has been prepared for the benefit of BOPCO, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or BOPCO, LP.



## **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



1,000 500 0 1,000 2,000  
Distance in Feet

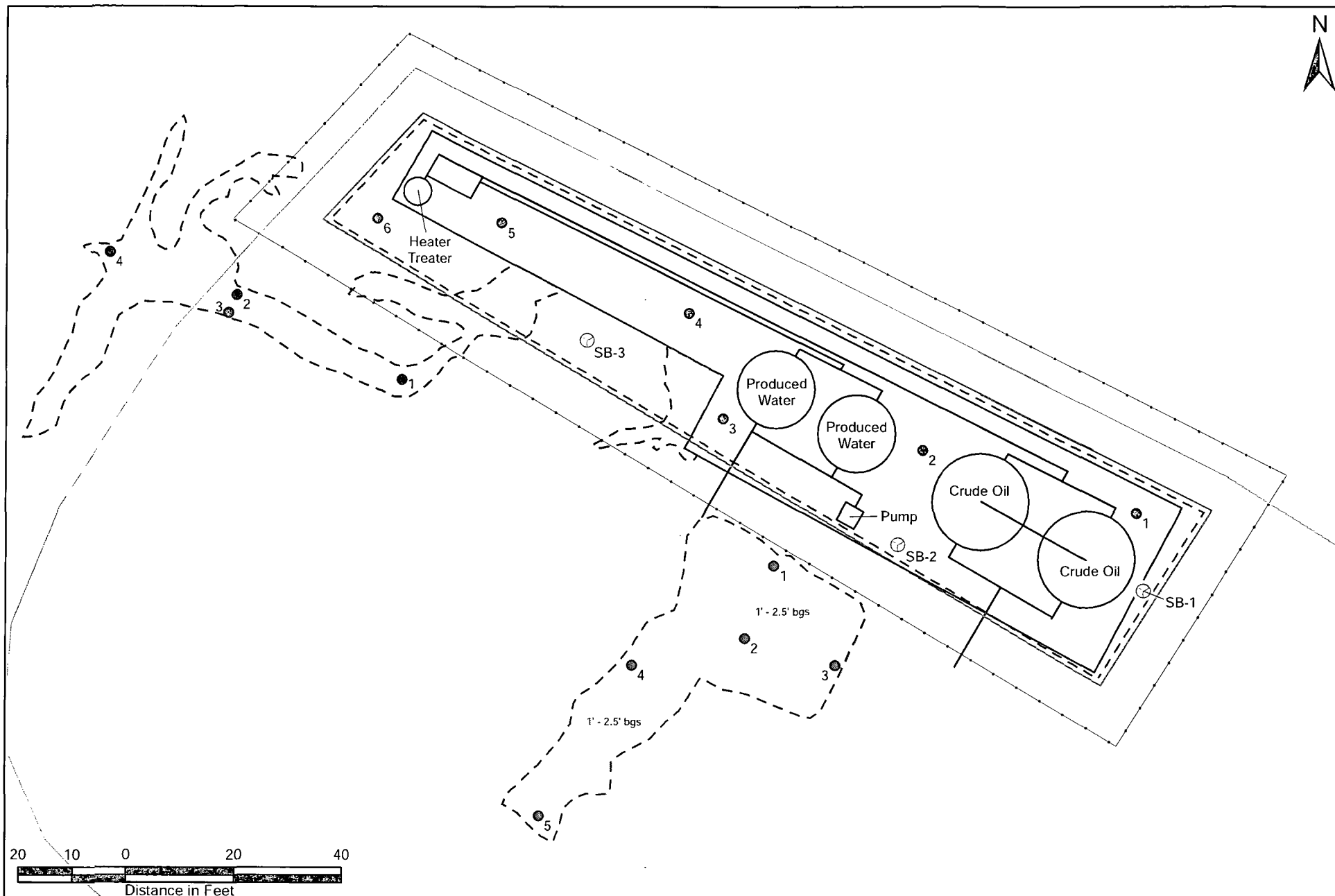
**Figure 1**  
**Site Location Map**  
**BOPCO, LP**  
**Bass 3 Federal Battery #1**  
**Eddy County, New Mexico**



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

Drawn By: BJA  
July 30, 2012

Checked By: BRB  
Scale: 1" = 2000'



Legend:	
- - - Excavation 1	— Fence
- - - Excavation 2	— Caliche Pad
- - - Excavation 3	● Soil Sample (3/5/2012)
— Pipeline	● Soil Sample (3/29/2012)
— Earthen Berm	● Soil Sample (4/17/2012)
— Steel Berm	⊙ Soil Boring

Figure 2  
Site & Sample Location Map  
BOPCO, LP  
Bass 3 Federal Battery #1  
Eddy County, New Mexico



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

Drawn By: BJA	Checked By: BRB
August 3, 2012	Scale: 1" = 24'

# Tables

**TABLE 1**  
**CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL**

**BOPCO, LP**  
**BASS 3 FEDERAL BATTERY #1**  
**EDDY COUNTY, NEW MEXICO**

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030					METHOD: 8015M			TOTAL TPH	E 300
				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)	C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	CHLORIDE (mg/Kg)
SB-1 @ 5'	5'	1/16/2012	In-Situ	-	-	-	-	-	394	2,300	314	3,008	-
SB-1 @ 10'	10'	1/16/2012	In-Situ	-	-	-	-	-	<10.0	79.5	33.8	113	-
SB-1 @ 20'	20'	1/16/2012	In-Situ	-	-	-	-	-	207	1,660	275	2,142	1,540
SB-1 @ 30'	30'	1/16/2012	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<10.0	105	24.1	129	-
SB-1 @ 40'	40'	1/16/2012	In-Situ	-	-	-	-	-	55.5	721	109	886	400
SB-1 @ 55'	55'	1/16/2012	In-Situ	-	-	-	-	-	-	-	-	-	32.0
SB-1 @ 60'	60'	1/16/2012	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<10.0	16.2	19.2	35.4	16.0
SB-2 @ 5'	5'	1/17/2012	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
SB-2 @ 10'	10'	1/17/2012	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
SB-2 @ 20'	20'	1/17/2012	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	718
SB-2 @ 50'	50'	1/17/2012	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<10.0	<10.0	<10.0	<10.0	2,360
SB-2 @ 75'	75'	1/17/2012	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	1,390
SB-2 @ 95'	95'	1/17/2012	In-Situ	-	-	-	-	-	-	-	-	-	48.0
SB-2 @ 100'	100'	1/17/2012	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<10.0	11.9	<10.0	11.9	112
SB-3 @ 5'	5'	1/17/2012	In-Situ	-	-	-	-	-	<10.0	40.9	<10.0	40.9	-
SB-3 @ 10'	10'	1/17/2012	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	1,840
SB-3 @ 25'	25'	1/17/2012	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<10.0	<10.0	<10.0	<10.0	192
SB-3 @ 40'	40'	1/17/2012	In-Situ	-	-	-	-	-	-	-	-	-	224
SB-3 @ 45'	45'	1/17/2012	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<10.0	<10.0	<10.0	<10.0	64.0
Sample #1	0.5'	3/5/2012	In-Situ	-	-	-	-	-	1,100	7,180	1,140	9,420	2,440
Sample #2	0.5'	3/5/2012	In-Situ	-	-	-	-	-	3,920	11,000	1,820	16,740	2,680
Sample #3	0.5'	3/5/2012	In-Situ	-	-	-	-	-	5,360	18,300	2,470	26,130	4,240
Sample #4	0.5'	3/5/2012	In-Situ	-	-	-	-	-	<10.0	116	41.5	158	4,160
Sample #5	0.5'	3/5/2012	In-Situ	-	-	-	-	-	2,530	17,700	1,910	22,140	5,440
Sample #6	0.5'	3/5/2012	In-Situ	-	-	-	-	-	644	12,500	1,900	15,044	11,100
Sample #1	1.5'	3/29/2012	In-Situ	-	-	-	-	-	106	470	44.8	621	-
Sample #2	1.5'	3/29/2012	In-Situ	-	-	-	-	-	<10.0	58.9	15.7	74.6	-
Sample #3	1.5'	3/29/2012	In-Situ	-	-	-	-	-	<10.0	201	64.3	265	-
Sample #4	1.5'	3/29/2012	In-Situ	-	-	-	-	-	61.8	460	37.5	559	-
Sample #1	2.5'	4/17/2012	In-Situ	-	-	-	-	-	-	-	-	-	656
Sample #2	2.5'	4/17/2012	In-Situ	-	-	-	-	-	-	-	-	-	464
Sample #3	2.5'	4/17/2012	In-Situ	-	-	-	-	-	-	-	-	-	576
Sample #4	2.5'	4/17/2012	In-Situ	-	-	-	-	-	-	-	-	-	480
Sample #5	2.5'	4/17/2012	In-Situ	-	-	-	-	-	-	-	-	-	288
NMOCDCriteria				10				50				5,000	1,000

- = Not analyzed.

# **Appendices**

**Appendix A**

**Release Notification &**

**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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised October 10, 2003

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

30-015-25330

Release Notification and Corrective Action

nMLB/203337597

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company BOPCO, L.P. <b>BEPCO 1801</b>	Contact Tony Savoie
Address 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 432-556-8730
Facility Name: Bass 3 Federal Battery #1	Facility Type: E&P

Surface Owner Federal	Mineral Owner Federal	Lease No. LC-060853A
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LOCATION OF RELEASE

Unit Letter P	Section 3	Township 22S	Range 28E	Feet from the 230	North/South Line South	Feet from the 1090	East/West Line East	County Eddy
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Latitude N 32.415370 Longitude W 104.06990

NATURE OF RELEASE

Type of Release: Crude oil	Volume of Release: 20 Bbls of Crude oil	Volume Recovered: 5 bbls
Source of Release: Oil production tank #113678	Date and Hour of Occurrence 1/3/12 time unknown	Date and Hour of Discovery 1/3/12 2:00 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOC emergency #104	
By Whom? Tony Savoie	Date and Hour 1/4/12 2:37 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		

**RECEIVED**  
JAN 17 2012  
NMOCD ARTESIA

Describe Cause of Problem and Remedial Action Taken.\* A hole was discovered in the bottom of the south oil production tank. The tank was taken out of service the day of discovery. The tank was cleaned, repaired and coated on 1/6/12.

Describe Area Affected and Cleanup Action Taken.\* The crude oil was contained inside the earthen containment. A vacuum truck recovered approximately 5 bbls of crude oil, the remainder of the spill soaked into the ground. The total area affected by this release measured approximately 2430 sq. ft. During the site assessment it was noted that were areas inside the containment that were obviously impacted from previous releases of crude oil and produced water. An air rotary rig is scheduled for 1/9/12 to try and define the horizontal and vertical extent of the release.  
The Site remediation for the produced water and crude oil spill will follow the NMOCD guidelines for leaks and spills.

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: <u>Tony Savoie</u>	OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie	Approved by District Supervisor <u>[Signature]</u>	
Title: Waste Mgmt. & Remediation Specialist	Approval Date: <b>FEB 02 2012</b>	Expiration Date:
E-mail Address: TASavoie@BassPet.com	Conditions of Approval: Remediation per OCD Rules & Guidelines. <b>SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:</b>	Attached <input type="checkbox"/>
Date: 1/9/12 Phone: 432-556-8730	<u>3/2/2012</u>	

\* Attach Additional Sheets If Necessary

2PA-996

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
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30-015-25330

Release Notification and Corrective Action

NMLB1203927842

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company BOPCO, L.P.	1801 BEPCO	Contact Tony Savoie
Address 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 432-556-8730
Facility Name: Bass 3 Federal Battery #1		Facility Type: E&P

Surface Owner Federal	Mineral Owner Federal	Lease No. LC-060853A
-----------------------	-----------------------	----------------------

LOCATION OF RELEASE

Unit Letter P	Section 3	Township 22S	Range 28E	Feet from the 230	North/South Line South	Feet from the 1090	East/West Line East	County Eddy
------------------	--------------	-----------------	--------------	----------------------	---------------------------	-----------------------	------------------------	----------------

Latitude N 32.415370 Longitude W 104.06990

NATURE OF RELEASE

Type of Release: Crude oil and produced water	Volume of Release: 65 bbls of produced water and less than 5 bbls of crude oil.	Volume Recovered: 60 bbls of produced water and 2 bbls crude oil
Source of Release: 2" line from the heater to the production tanks	Date and Hour of Occurrence 1/11/12 time unknown	Date and Hour of Discovery 1/11/12 9:00 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOC emergency #104	
By Whom? Tony Savoie	Date and Hour 1/11/12 11:13 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

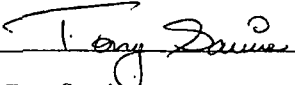
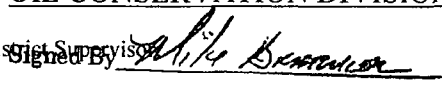
RECEIVED  
JAN 17 2012  
NMOCD ARTESIA

Describe Cause of Problem and Remedial Action Taken.\* A 2" line going from the heater treater to the tanks leaked due to external corrosion. A temporary repair clamp was placed on the affected piece of pipe.

Describe Area Affected and Cleanup Action Taken.\* The released fluid affected approximately 2000 sq. ft. area inside the earthen containment around the tank battery location. A vacuum truck picked up all of the free standing fluid. Vertical and horizontal extent will be determined on 1/13/11.

The Site remediation for the produced water and crude oil spill will follow the NMOCD guidelines for leaks and spills.

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

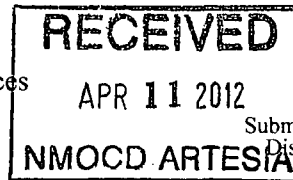
Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie	Approved by District Supervisor 	
Title: Waste Mgmt. & Remediation Specialist	Approval Date: FEB 08 2012	Expiration Date:
E-mail Address: TASavoie@BassPet.com	Conditions of Approval: Remediation per OCD Rules & Guidelines. SUBMIT REMEDIATION PROPOSAL NOT LATER THAN: 3/8/12	Attached <input type="checkbox"/>
Date: 1/13/12	Phone: 432-556-8730	

\* Attach Additional Sheets If Necessary

2RP-997

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

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



Form C-141  
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side of form

**Release Notification and Corrective Action**

*nmlb1211538712*

**OPERATOR**

☒ Initial Report ☐ Final Report

Name of Company BOPCO, L.P. <i>260737</i>	Contact Tony Savoie
Address 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 432-556-8730
Facility Name: Bass 3 Federal Battery #1	Facility Type: E&P

Surface Owner Federal	Mineral Owner Federal	Lease No. LC-060853A
-----------------------	-----------------------	----------------------

**LOCATION OF RELEASE**

*30-015-25330*

Unit Letter P	Section 3	Township 22S	Range 28E	Feet from the 230	North/South Line South	Feet from the 1090	East/West Line East	County Eddy
------------------	--------------	-----------------	--------------	----------------------	---------------------------	-----------------------	------------------------	----------------

Latitude N 32.415370 Longitude W 104.06990

**NATURE OF RELEASE**

Type of Release: Crude oil	Volume of Release: 15 bbls crude oil	Volume Recovered: 5 bbls crude oil
Source of Release: Production Tank	Date and Hour of Occurrence 3/27/12 time unknown	Date and Hour of Discovery 3/27/12 8:30 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* Two loads of produced water were unloaded into the facility water tank without prior approval from BOPCO, the water transfer pump would have normally pumped the water to a SWD failed to pump properly and the daily oil/water production through the night ran the tank over.

Describe Area Affected and Cleanup Action Taken.\* The area around the tanks and process area had recently been excavated and backfilled with clean soil in response to 2 previous spills at the facility. The impacted soil was removed, the areas re-sampled and backfilled with clean soil. A closure report will be submitted with the data from the previous remediation.

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

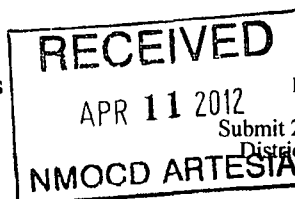
Signature: <i>Tony Savoie</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by District Supervisor <i>Mike Brannon</i>	
Title: Waste Mgmt. & Remediation Specialist	Approval Date: <b>APR 24 2012</b>	Expiration Date:
E-mail Address: TASavoie@BassPet.com	Conditions of Approval: Remediation per OCD Rules & Guidelines. <b>SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:</b> <i>5/24/2012</i>	Attached <input type="checkbox"/>
Date: 4/9/12 Phone: 432-556-8730		

\* Attach Additional Sheets If Necessary

*2RP-1103*

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

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Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505



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### Release Notification and Corrective Action

NMLA/2/15-35230 260737 **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company BOPCO, L.P.	Contact Tony Savoie
Address 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 432-556-8730
Facility Name: Bass 3 Federal Battery #1	Facility Type: E&P

Surface Owner Federal	Mineral Owner Federal	Lease No. LC-060853A
-----------------------	-----------------------	----------------------

### LOCATION OF RELEASE

Unit Letter P	Section 3	Township 22S	Range 28E	Feet from the 230	North/South Line South	Feet from the 1090	East/West Line East	County Eddy
------------------	--------------	-----------------	--------------	----------------------	---------------------------	-----------------------	------------------------	----------------

Latitude N 32.415370 Longitude W 104.06990

### NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 285 bbls produced water	Volume Recovered: 280 bbls produced water
Source of Release: Air eliminator on the water transfer pump.	Date and Hour of Occurrence 4/3/12 time unknown	Date and Hour of Discovery 4/3/12 9:00 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? <u>Notification REQUIRED ON TOTAL Release Volume exceeding 25 bbls</u>	
By Whom?	Date and Hour <u>SEE 19.15.29 NMAC (OCD 2465)</u>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* A ¾" air eliminator on the water transfer pump broke in half due to a manufacture defect. The part was replaced.

Describe Area Affected and Cleanup Action Taken.\* The tank battery location had just recently been retro-fitted with a 0-perm polyurea containment, most of the released water stayed inside the containment area and was recovered with a vacuum truck and pumped back into the tank. A small amount of water was released outside of the containment area on the caliche pad area around the tank battery. The impacted caliche will be removed and the area will be remediated in accordance to the NMOCD guidelines for spills.

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

### OIL CONSERVATION DIVISION

Signature: <u>Tony Savoie</u>	Approved by District Supervisor: Signed By <u>M. L. Brennan</u>	
Printed Name: Tony Savoie		
Title: Waste Mgmt. & Remediation Specialist	Approval Date: <u>APR 24 2012</u>	Expiration Date:
E-mail Address: TASavoie@BassPet.com	Conditions of Approval: Remediation per OCD Rules & Guidelines. <b>SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:</b>	Attached <input type="checkbox"/>
Date: 4/9/12	Phone: 432-556-8730	

\* Attach Additional Sheets If Necessary

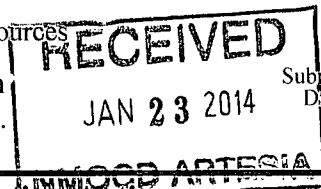
5/24/2012

2RP-1102

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

State of New Mexico  
Energy Minerals and Natural Resources

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



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Revised October 10, 2003

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side of form

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report

X Final Report

Name of Company	BOPCO, LP	260737	Contact	Tony Savoie
Address	522 W. Mermod, Suite 704, Carlsbad, NM 88220		Telephone No.	(432)556-8730
Facility Name	Bass 3 Federal Battery #1	260737	Facility Type	E&P
Surface Owner	Federal	Mineral Owner	Federal	Lease No. <del>LC-060853A</del> API 30-015-25330

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	3	22S	28E	230	South	1090	East	Eddy

Latitude 32.415370° North

Longitude 104.06990° West

**NATURE OF RELEASE**

Type of Release	Crude oil	Volume of Release	20 bbls of crude oil	Volume Recovered	5 bbls
Source of Release	Oil production tank #113678	Date and Hour of Occurrence	1/3/12 Time unknown	Date and Hour of Discovery	1/3/12 2:00 p.m.
Was Immediate Notice Given?	X Yes No Not Required		If YES, To Whom?	NMOCD Emergency #104	
By Whom?	Tony Savoie		Date and Hour	1/4/12 2:37 p.m.	
Was a Watercourse Reached?	<input type="checkbox"/> Yes X No		If YES, Volume Impacting the Watercourse.		

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* A hole was discovered in the bottom of the south oil production tank. The tank was taken out of service the day of discovery. The tank was cleaned, repaired, and coated on 1/6/12.

Describe Area Affected and Cleanup Action Taken.\* The crude oil was contained inside the earthen containment. A vacuum truck recovered approximately 5 bbls of crude oil. The release affected an area measuring approximately 2,430 ft<sup>2</sup>. During the site assessment, it was noted that there were areas inside the containment that were obviously impacted from previous releases of crude oil and produced water. Following initial response activities, the releases were remediated as per NMOCD recommended guidelines. Please reference the attached *Remediation Summary & Risk-Based Site Closure Request* for remediation details.

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

Signature:	<b>OIL CONSERVATION DIVISION</b>		
Printed Name: Tony Savoie	Approved by District Supervisor:		
Title: Waste Mgmt. & Remediation Specialist	Approval Date:	Expiration Date:	
E-mail Address: TASavoie@BassPet.com	Conditions of Approval:		
Date: 1/22/14	Phone: 432-556-8730		

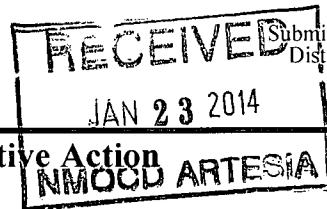
2RP-996

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised October 10, 2003



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Release Notification and Corrective Action

OPERATOR

Initial Report

X Final Report

Name of Company	BOPCO, LP	260737	Contact	Tony Savoie
Address	522 W. Mermod, Suite 704, Carlsbad, NM 88220		Telephone No.	(432)556-8730
Facility Name	Bass 3 Federal Battery #1		Facility Type	E&P
			API- 30-015-25330	
Surface Owner	Federal	Mineral Owner	Federal	Lease No. LC 060853A

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	3	22S	28E	230	South	1090	East	Eddy

Latitude 32.415370° North

Longitude 104.06990° West

NATURE OF RELEASE

Type of Release	Crude oil and produced water	Volume of Release	65 bbls of produced water and less than 5 bbls of crude oil	Volume Recovered	60 bbls of produced water and 2 bbls crude oil
Source of Release	2" line from the heater treater to the production tanks	Date and Hour of Occurrence	1/11/12 Time unknown	Date and Hour of Discovery	1/11/12 9:00 a.m.
Was Immediate Notice Given?	X Yes No Not Required	Was Immediate Notice Given?	X Yes No Not Required	Was Immediate Notice Given?	X Yes No Not Required
By Whom?	Tony Savoie	Date and Hour	1/11/12 11:13 a.m.	Date and Hour	1/11/12 11:13 a.m.
Was a Watercourse Reached?	<input type="checkbox"/> Yes X No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* A 2" line going from the heater treater to the tanks leaked due to external corrosion. A temporary repair clamp was placed on the affected piece of pipe.

Describe Area Affected and Cleanup Action Taken.\* The released fluid affected an approximately 2,000 ft<sup>2</sup> area inside the earthen containment around the tank battery location. A vacuum truck picked up all of the free-standing fluid. The spill covered approximately the same area as another spill reported on 1/3/12. Following initial response activities, the releases were remediated as per NMOCD recommended guidelines. Please reference the attached Remediation Summary & Risk-Based Site Closure Request for remediation details.

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: Tony Savoie	OIL CONSERVATION DIVISION		
Printed Name: Tony Savoie	Approved by District Supervisor:		
Title: Waste Mgmt. & Remediation Specialist	Approval Date:	Expiration Date:	
E-mail Address: TASavoie@BassPet.com	Conditions of Approval:		
Date: 1/22/14	Phone: 432-556-8730		

2RP-997

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
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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

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Revised October 10, 2003

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JAN 23 2014

Release Notification and Corrective Action

OPERATOR

Initial Report      X Final Report

Name of Company	BOPCO, LP	260 737	Contact	Tony Savoie	
Address	522 W. Mermod, Suite 704, Carlsbad, NM 88220			Telephone No.	(432)556-8730
Facility Name	Bass 3 Federal Battery #1			Facility Type	E&P

Surface Owner	Federal	Mineral Owner	Federal	Lease No.	LC-060853A API 30-015-25330
---------------	---------	---------------	---------	-----------	--------------------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	3	22S	28E	230	South	1090	East	Eddy

Latitude 32.415370° North

Longitude 104.06990° West

NATURE OF RELEASE

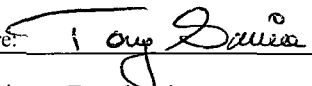
Type of Release	Produced water	Volume of Release	285 bbls of produced water	Volume Recovered	280 bbls of produced water
Source of Release	Production Tank	Date and Hour of Occurrence	4/3/12 Time unknown	Date and Hour of Discovery	4/3/12 9:00 a.m.
Was Immediate Notice Given?	Yes   No   X Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
Was a Watercourse Reached?	<input type="checkbox"/> Yes   X No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* A 3/4" air eliminator on the water transfer pump broke in half due to a manufacturing defect. The part was replaced.

Describe Area Affected and Cleanup Action Taken.\* The tank battery location had just recently been retro-fitted with a 0-perm polyurea containment. Most of the released water stayed inside the containment area and was recovered with a vacuum truck and pumped back into the tank. A small amount of water was released outside the containment area on the caliche pad area around the tank battery. Following initial response activities, the release was remediated to NMOCD guidelines. Please reference the attached *Remediation Summary & Risk-Based Site Closure Request* for remediation details.

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

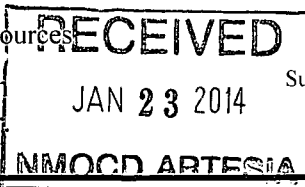
Signature: 	OIL CONSERVATION DIVISION		
Printed Name: Tony Savoie	Approved by District Supervisor:		
Title: Waste Mgmt. & Remediation Specialist	Approval Date:	Expiration Date:	
E-mail Address: TASavoie@BassPet.com	Conditions of Approval:		
Date: 1/22/14	Phone: 432-556-8730		

2RP-1102

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
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Energy Minerals and Natural Resources

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



Form C-141  
Revised October 10, 2003

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side of form

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report

☒ Final Report

Name of Company	BOPCO, LP	260 737	Contact	Tony Savoie
Address	522 W. Mermod, Suite 704, Carlsbad, NM 88220			Telephone No. (432)556-8730
Facility Name	Bass 3 Federal Battery #1			Facility Type E&P

Surface Owner	Federal	Mineral Owner	Federal	Lease No.	LC-060853A
					API 30-015-25330

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	3	22S	28E	230	South	1090	East	Eddy

**Latitude** 32.415370° North

**Longitude** 104.06990° West

**NATURE OF RELEASE**

Type of Release	Crude oil	Volume of Release	15 bbls of crude oil	Volume Recovered	5 bbls of crude oil
Source of Release	Production Tank	Date and Hour of Occurrence	3/27/12 Time unknown	Date and Hour of Discovery	3/27/12 8:30 a.m.
Was Immediate Notice Given?	Yes No <input checked="" type="checkbox"/> Not Required				
By Whom?	If YES, To Whom?				
Was a Watercourse Reached?	Date and Hour				
	If YES, Volume Impacting the Watercourse.				

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* Two loads of produced water were unloaded into the facility water tank without prior approval from BOPCO. The water transfer pump that would have normally pumped the water to a SWD failed to pump properly, and the daily oil/water production through the night ran the tank over.

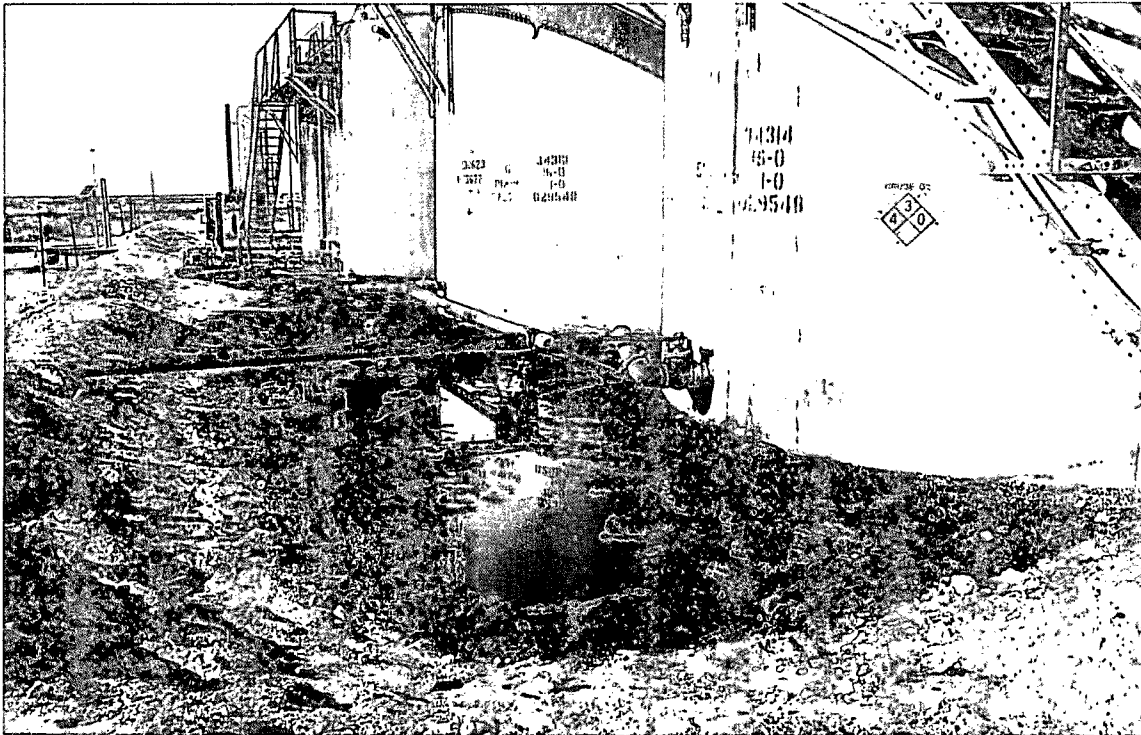
Describe Area Affected and Cleanup Action Taken.\* The around the tanks and process area had recently been excavated and backfilled with clean in soil in response to two leaks at the facility (1/3/12 and 1/11/12). The impacted soil was removed, and the areas were re-sampled and backfilled with clean soil. Please reference the attached *Remediation Summary & Risk-Based Site Closure Request* for remediation details.

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

Signature:	<b>OIL CONSERVATION DIVISION</b>		
Printed Name: Tony Savoie	Approved by District Supervisor:		
Title: Waste Mgmt. & Remediation Specialist	Approval Date:	Expiration Date:	
E-mail Address: TASavoie@BassPet.com	Conditions of Approval:		
Date: 1/22/14	Phone: 432-556-8730		

2RP-1103

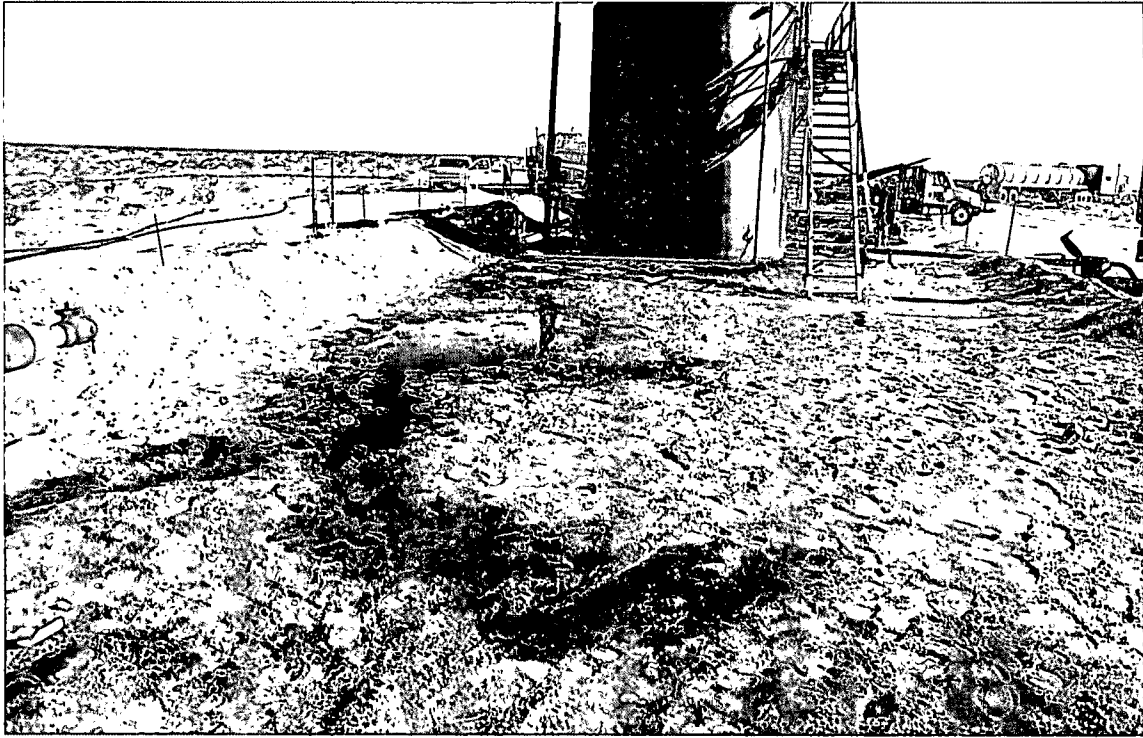




Bass 3 Federal Battery #1 - January 4, 2012, Release



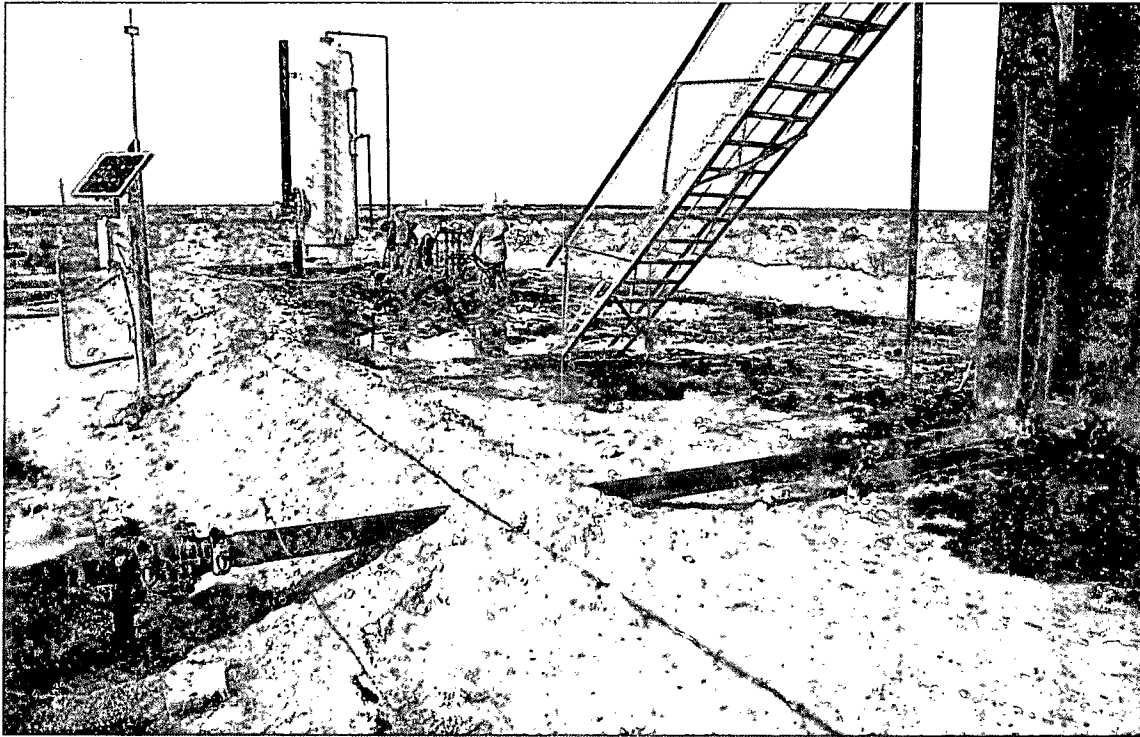
Bass 3 Federal Battery #1 - January 4, 2012, Release



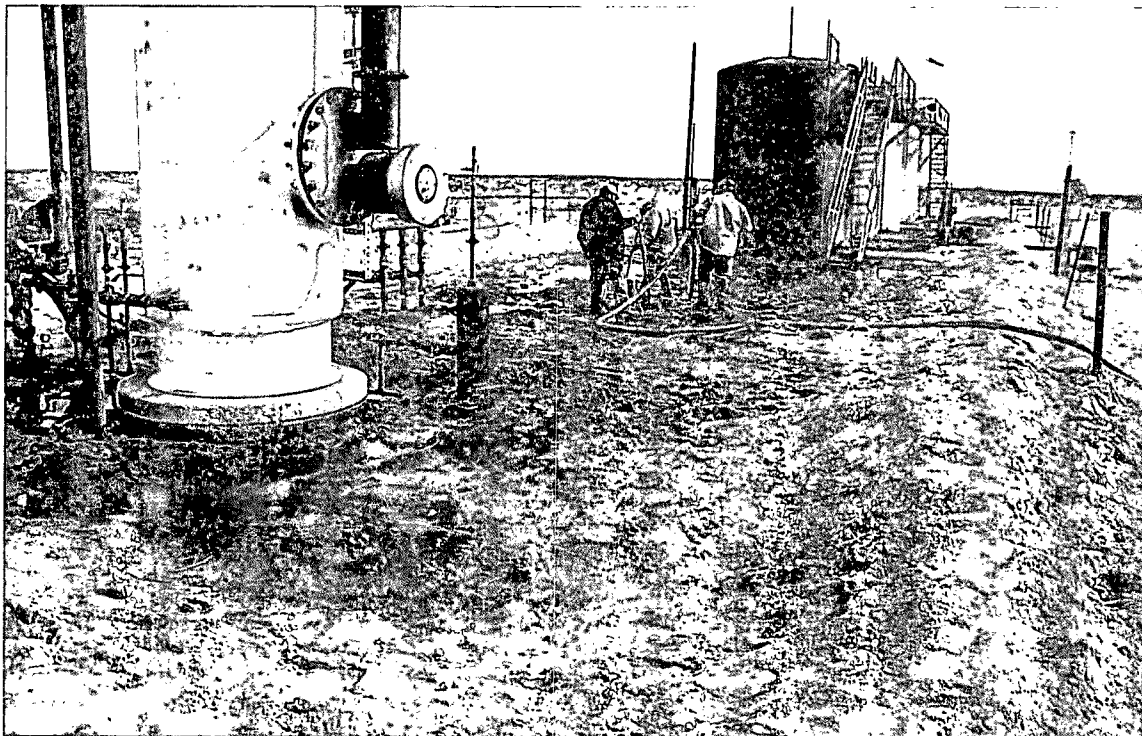
Bass 3 Federal Battery #1 - January 4, 2012, Release



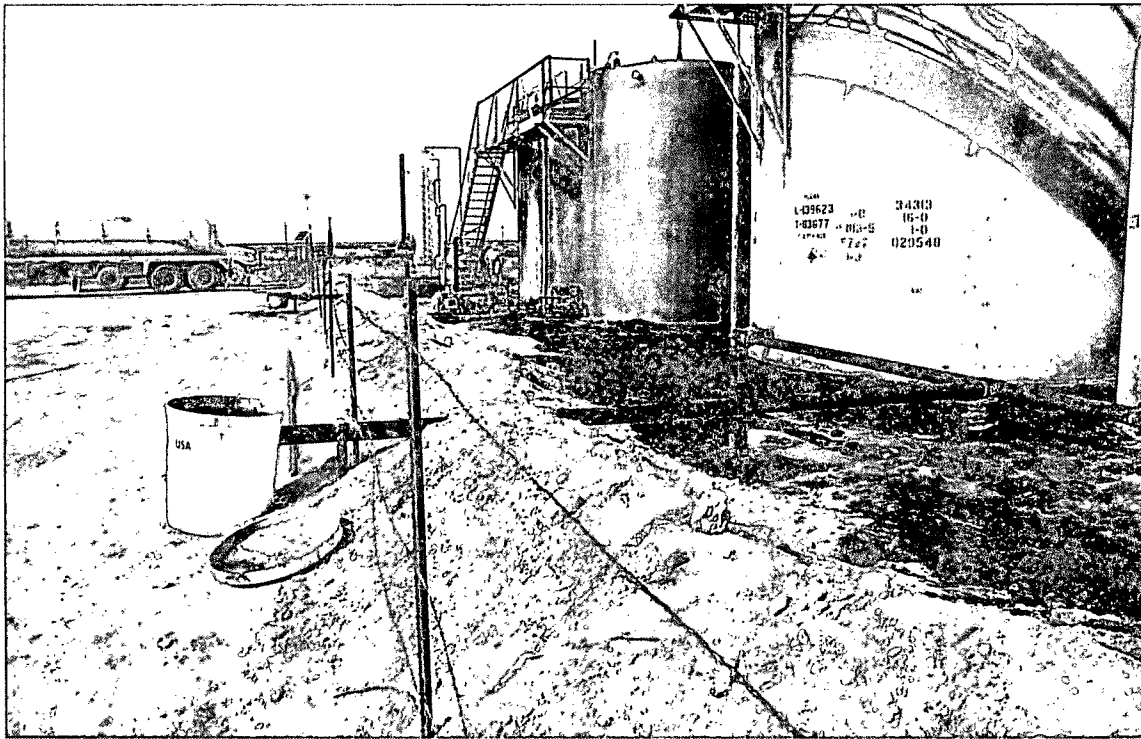
Bass 3 Federal Battery #1 - January 4, 2012, Release



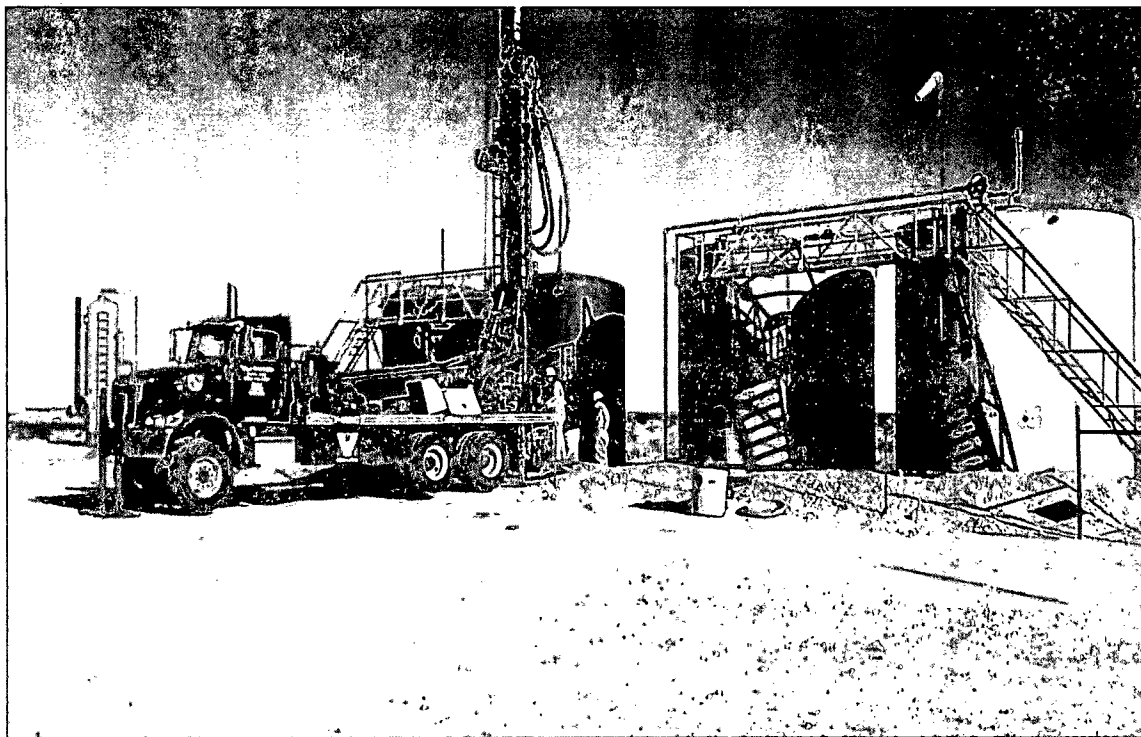
Bass 3 Federal Battery #1 - January 11, 2012, Release



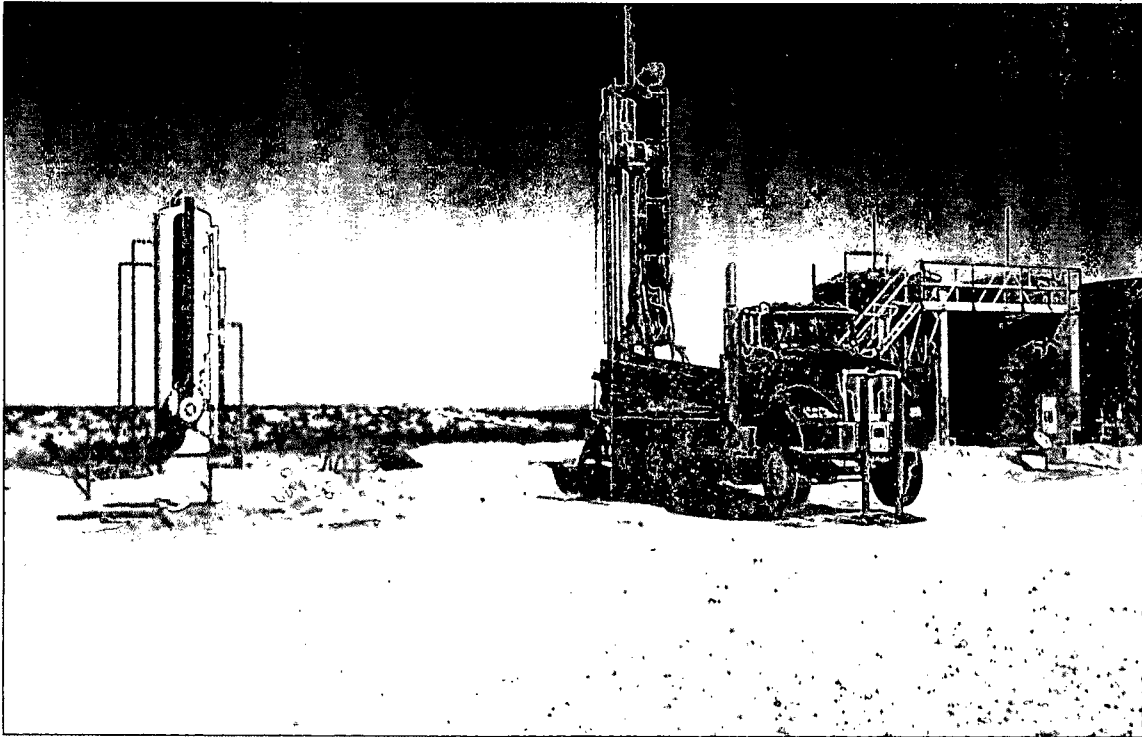
Bass 3 Federal Battery #1 - January 11, 2012, Release



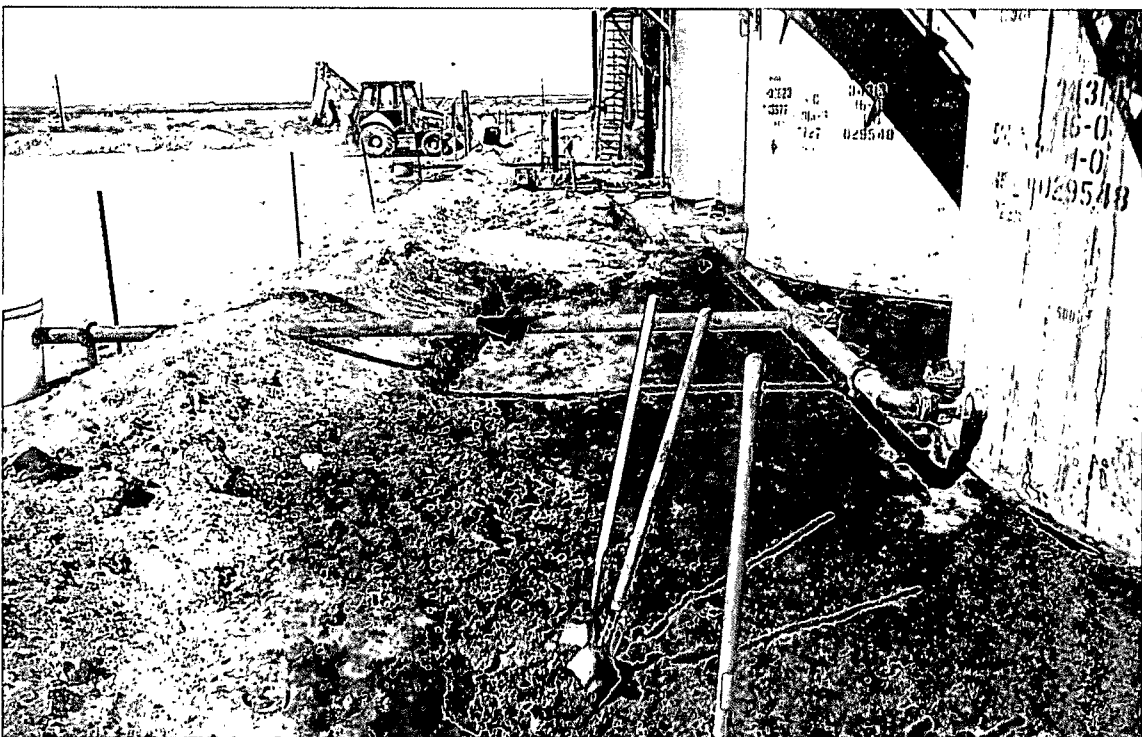
Bass 3 Federal Battery #1 - January 11, 2012, Release



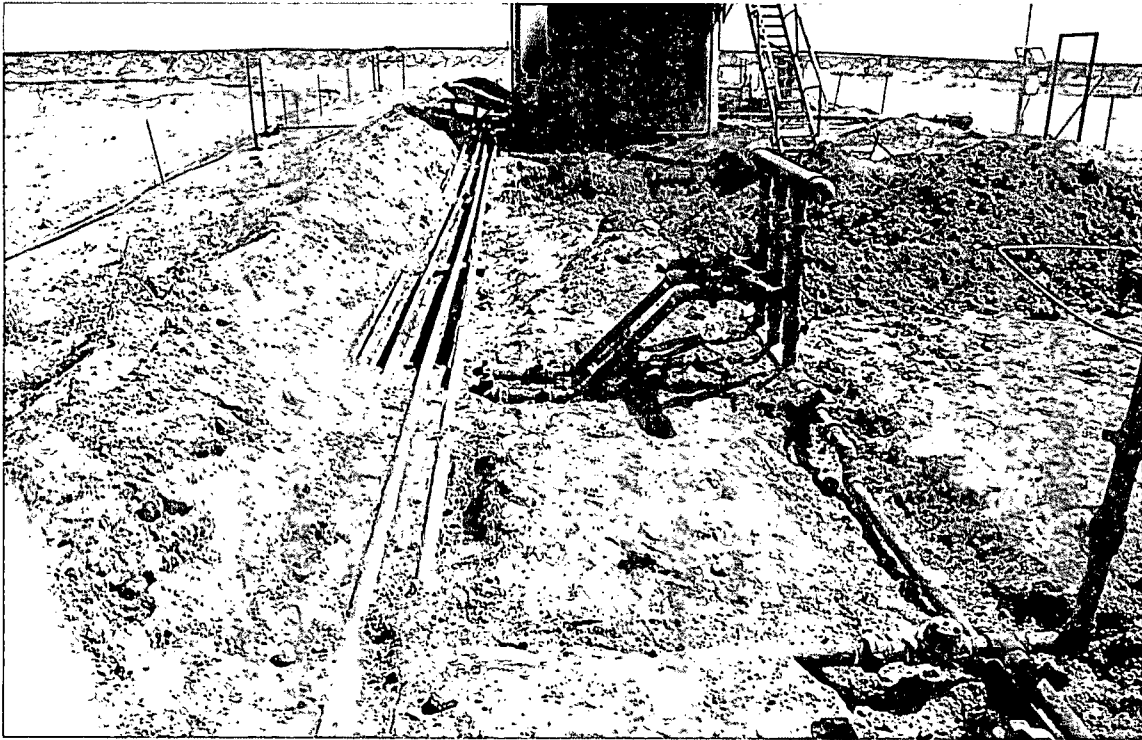
Bass 3 Federal Battery #1 - Advancement of Soil Boring SB-2



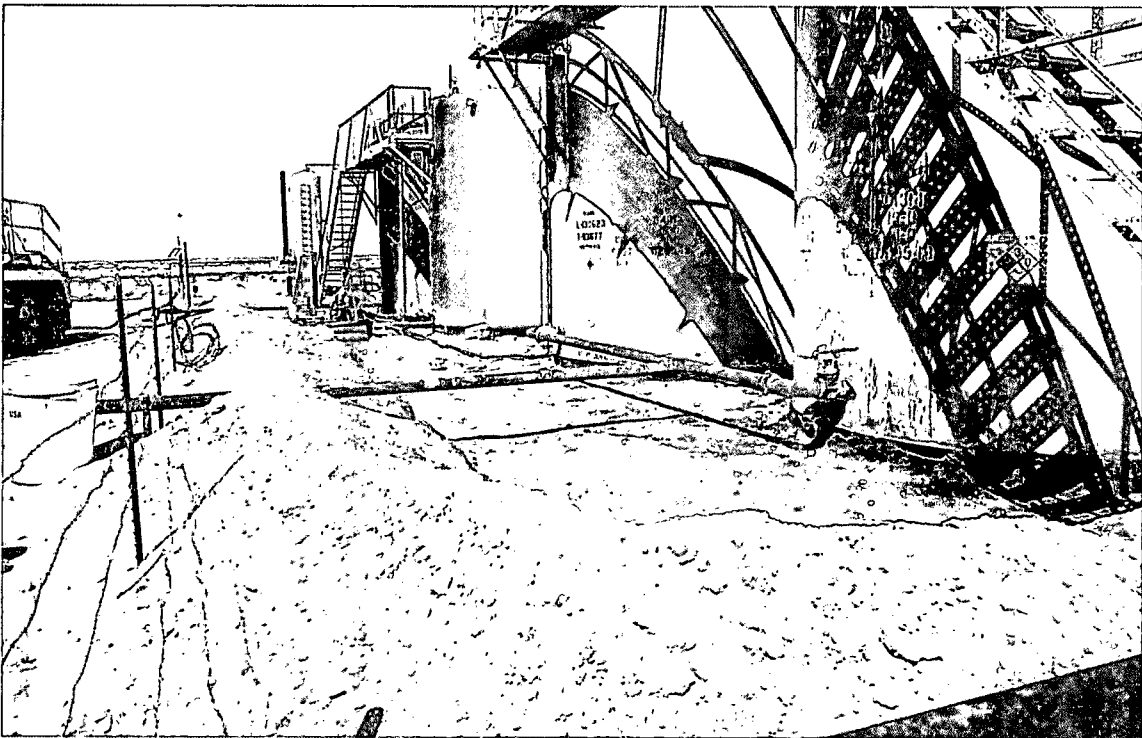
Bass 3 Federal Battery #1 - Advancement of Soil Boring SB-3



Bass 3 Federal Battery #1 - Excavation #1

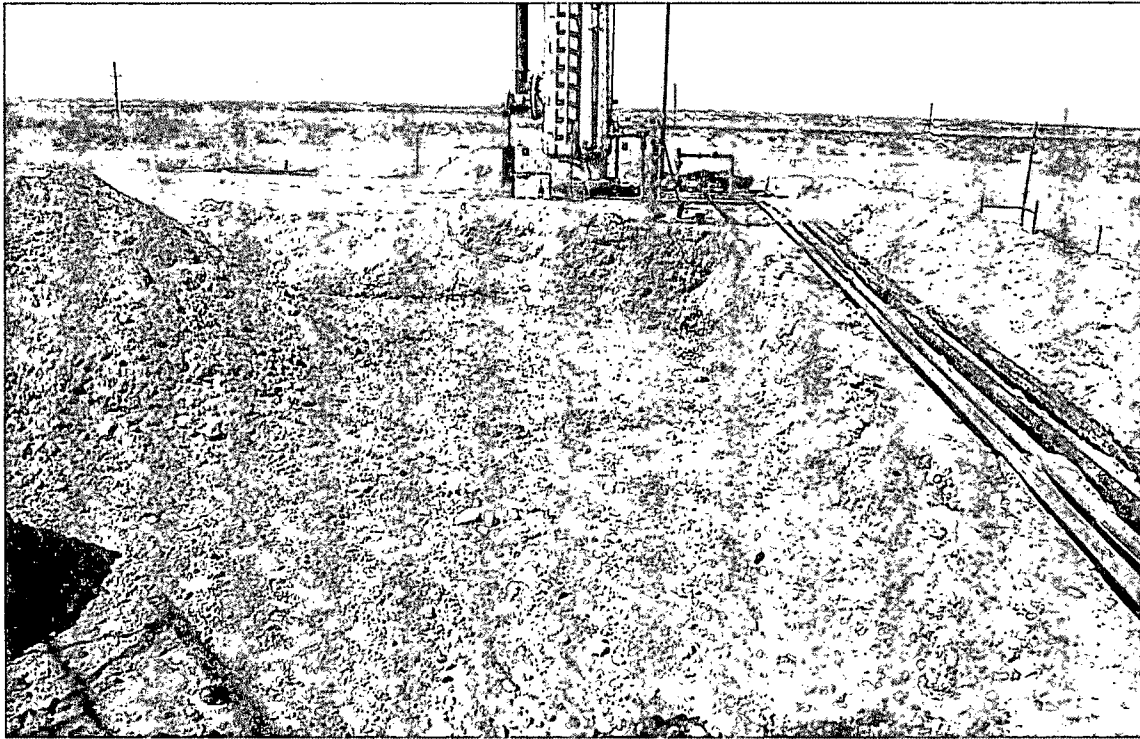


Bass 3 Federal Battery #1 - Excavation #1

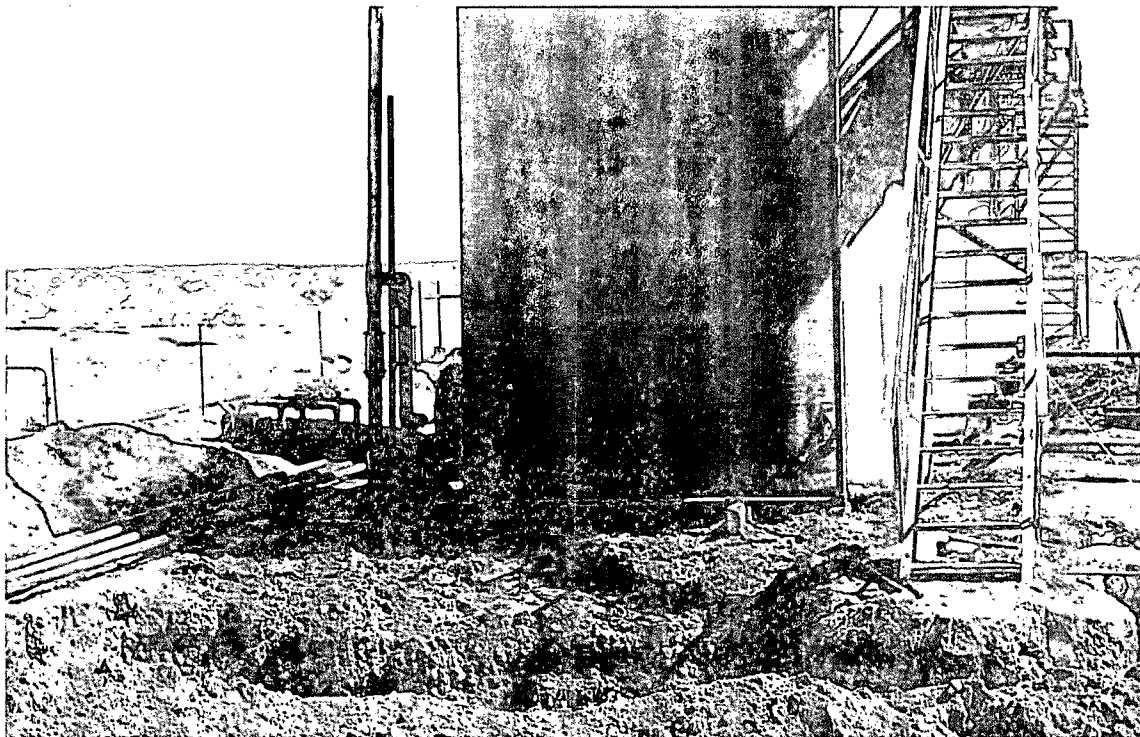


Bass 3 Federal Battery #1 - Excavation #1

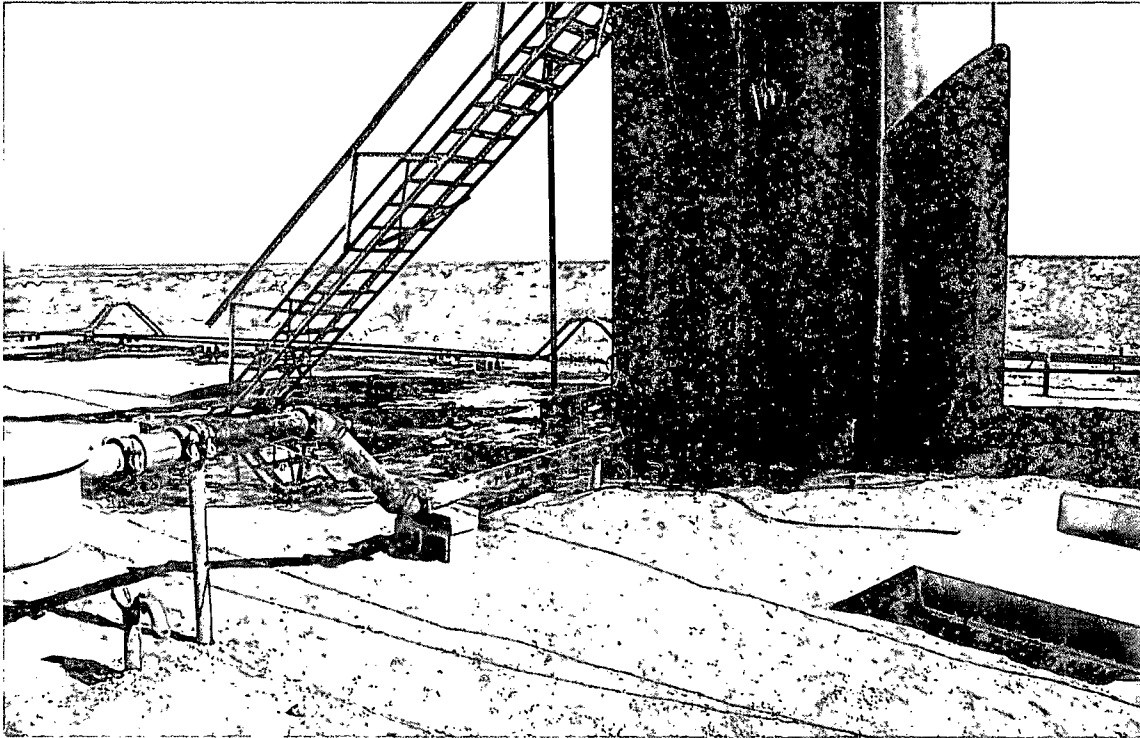




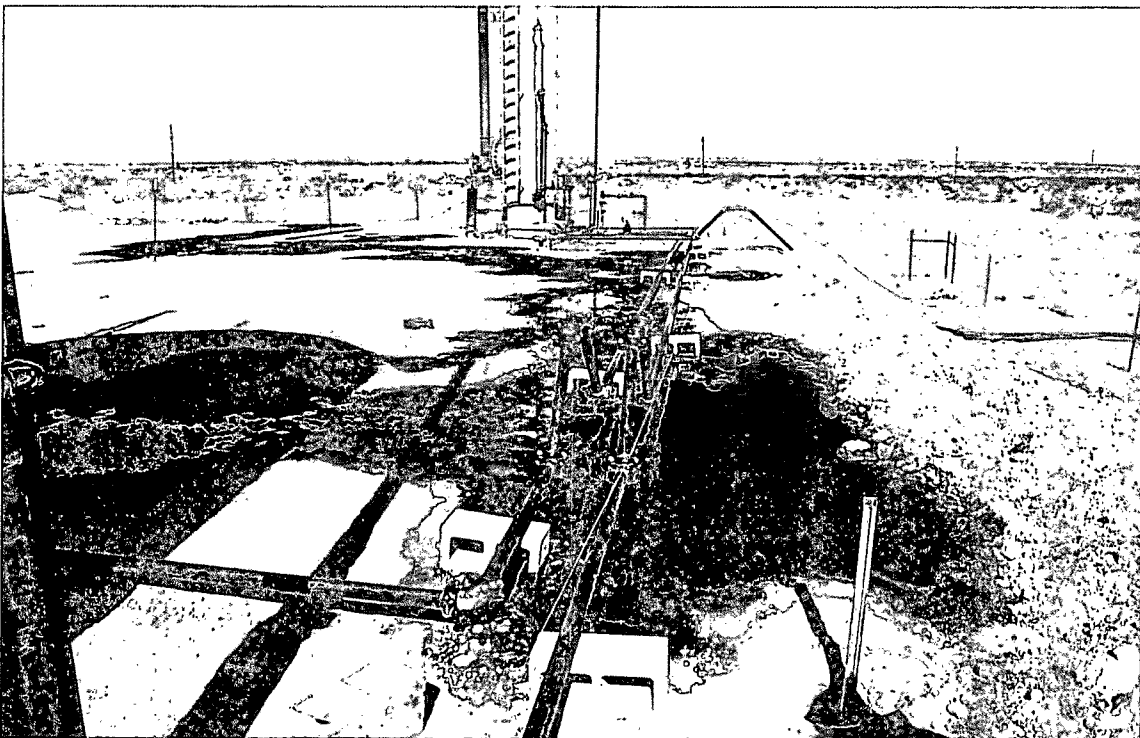
Bass 3 Federal Battery #1 - Excavation #1



Bass 3 Federal Battery #1 - Excavation #1

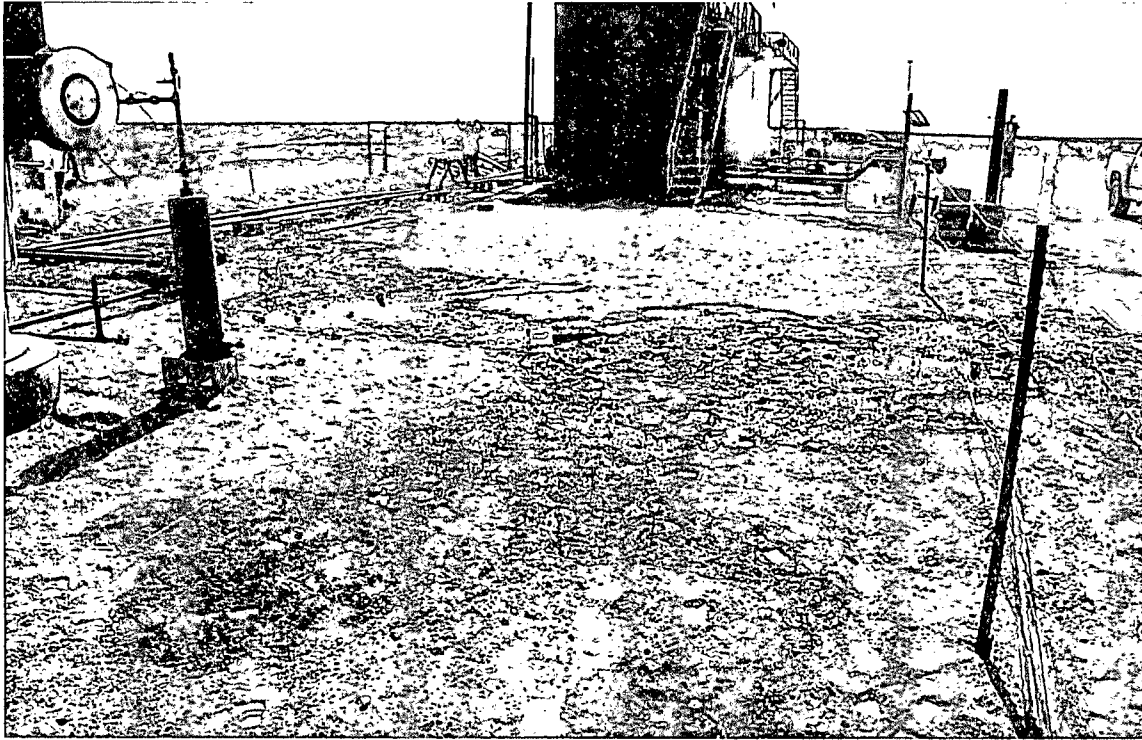


Bass 3 Federal Battery #1 - March 27, 2012, Release

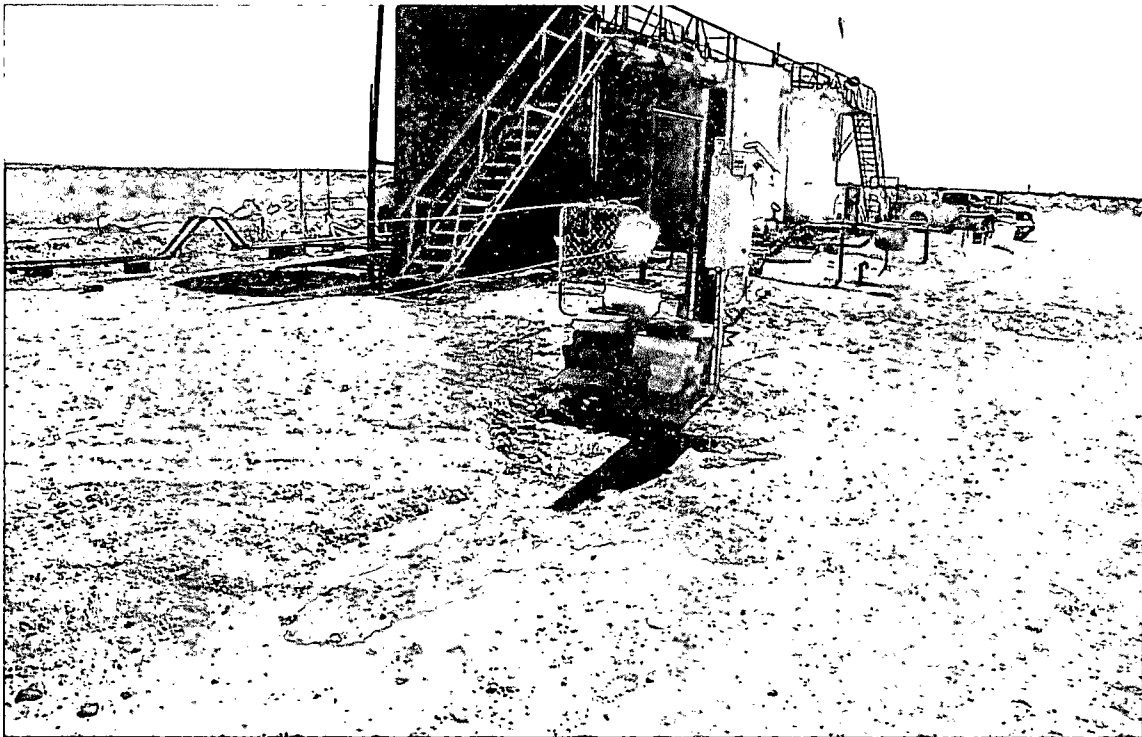


Bass 3 Federal Battery #1 - March 27, 2012, Release

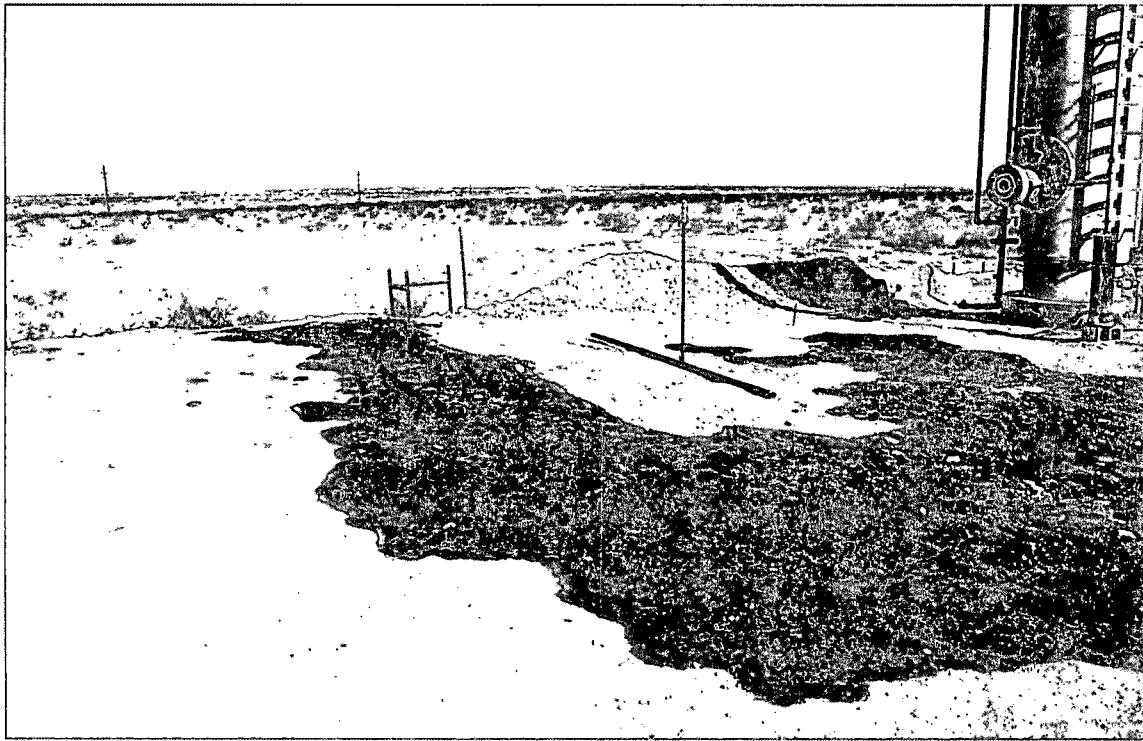




Bass 3 Federal Battery #1 - March 27, 2012, Release



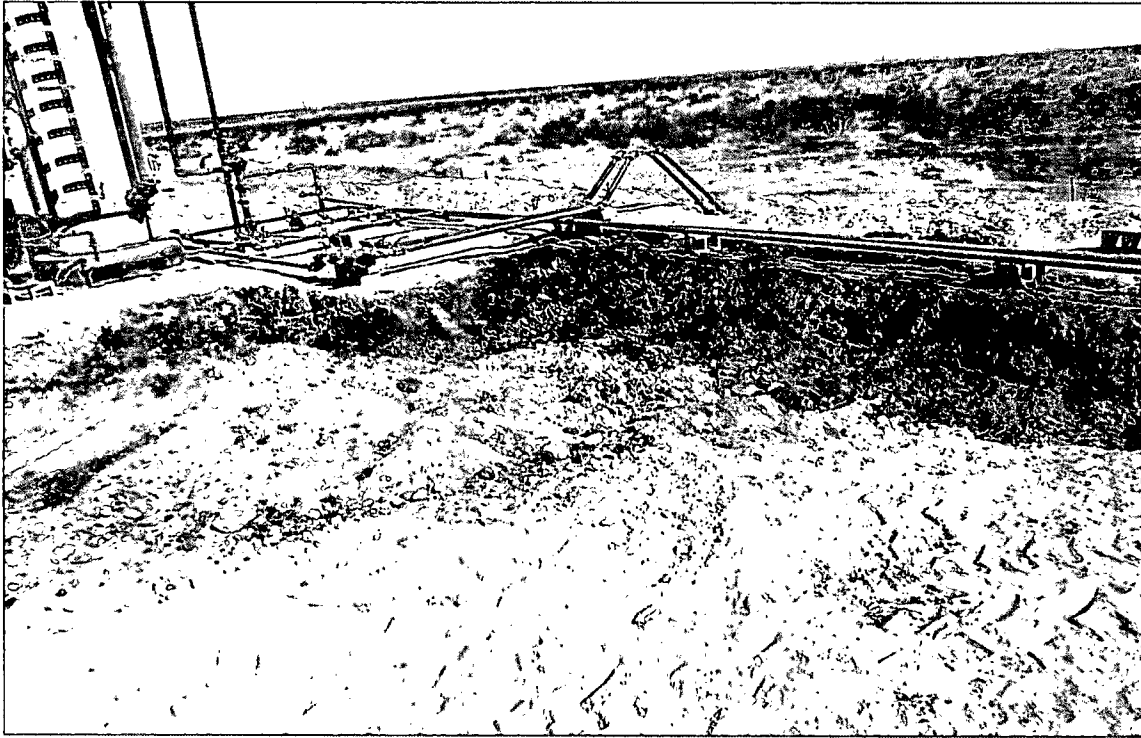
Bass 3 Federal Battery #1 - March 27, 2012, Release



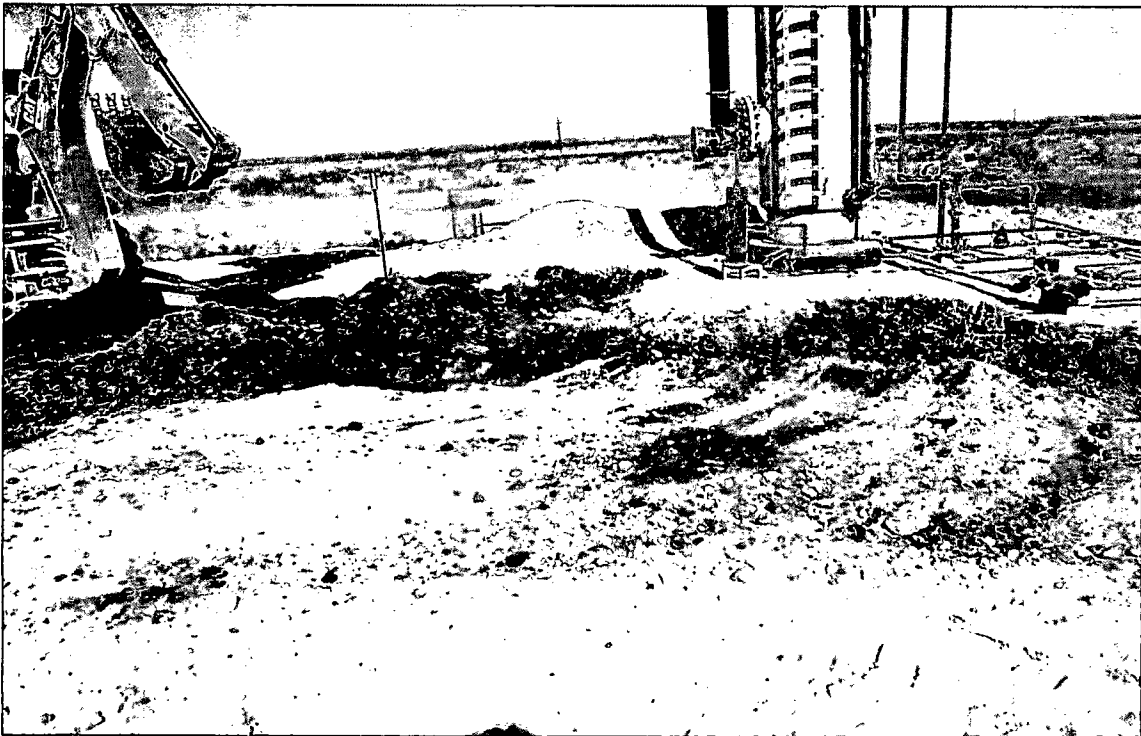
Bass 3 Federal Battery #1 - March 27, 2012, Release



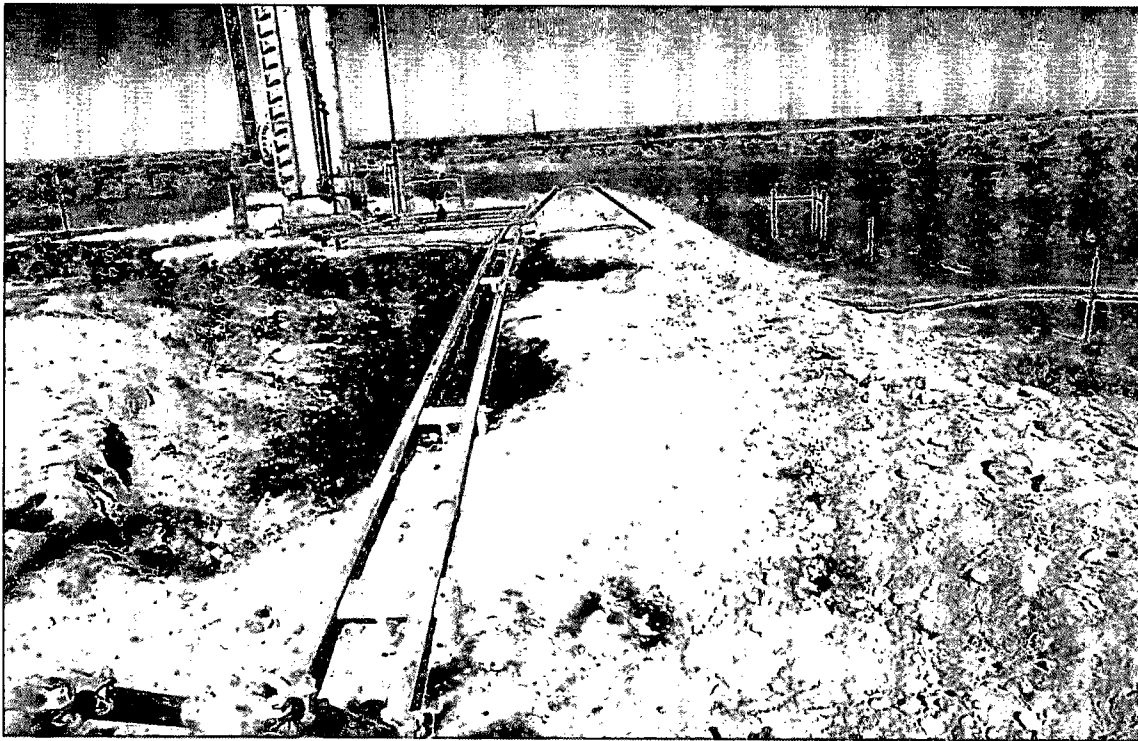
Bass 3 Federal Battery #1 - March 27, 2012, Release



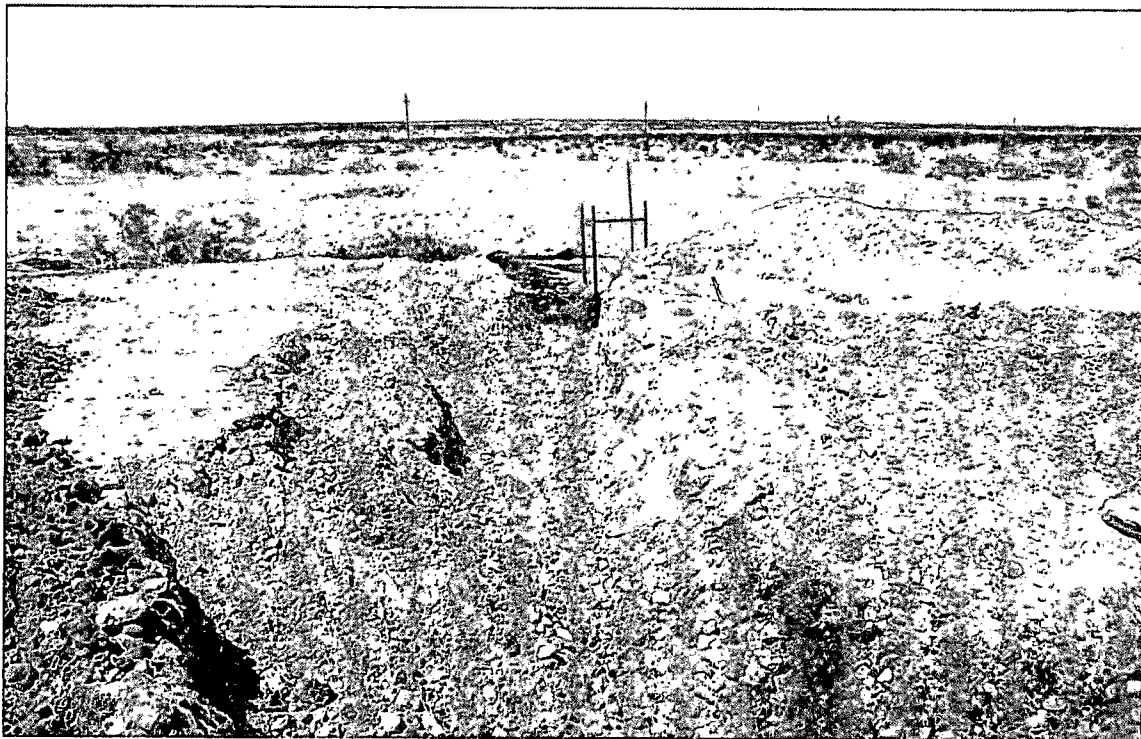
Bass 3 Federal Battery #1 - Excavation #2



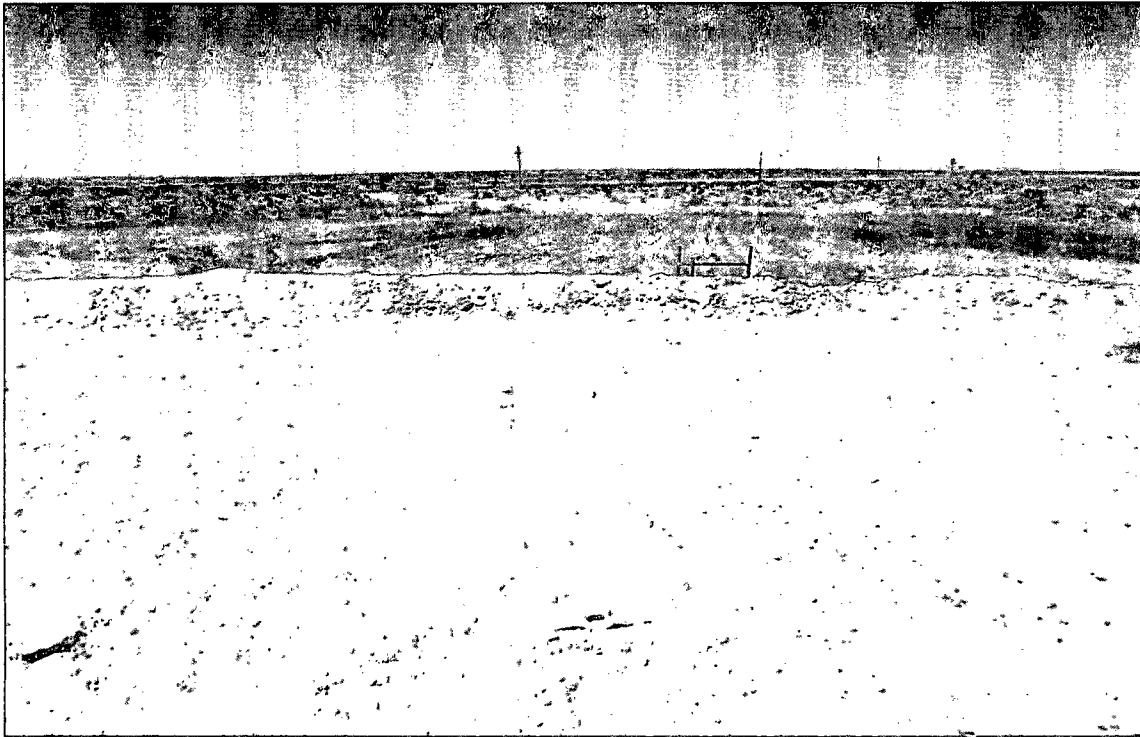
Bass 3 Federal Battery #1 - Excavation #2



Bass 3 Federal Battery #1 - Excavation #2



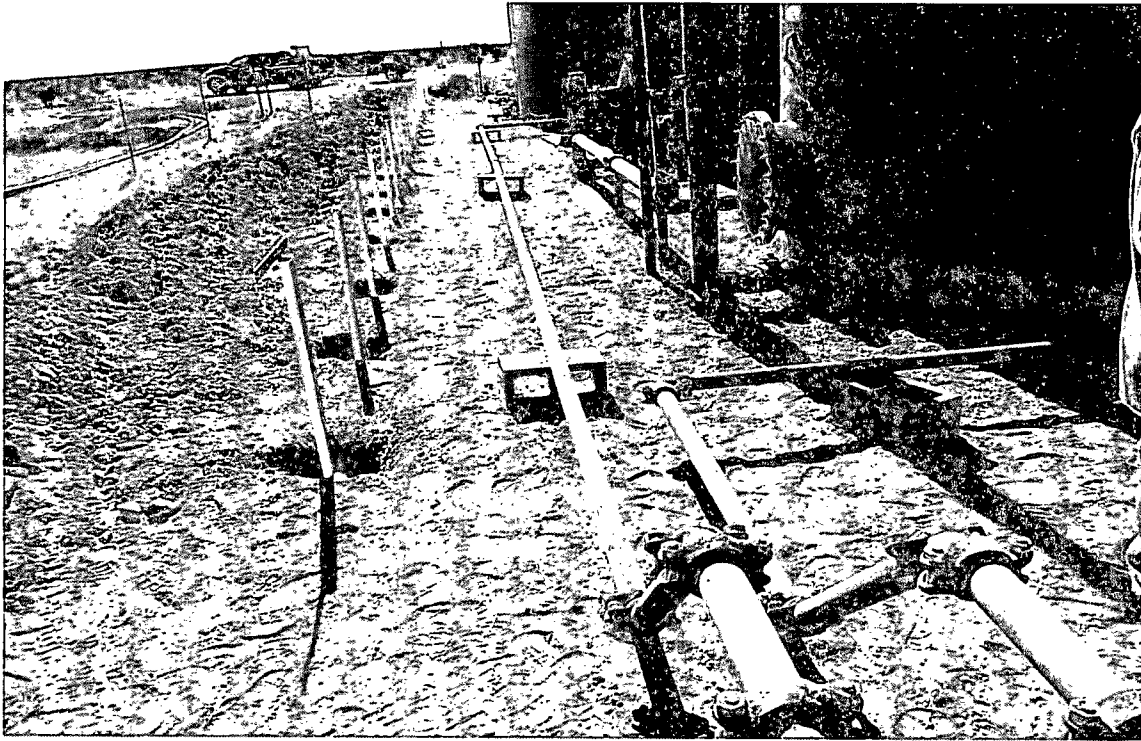
Bass 3 Federal Battery #1 - Excavation #2



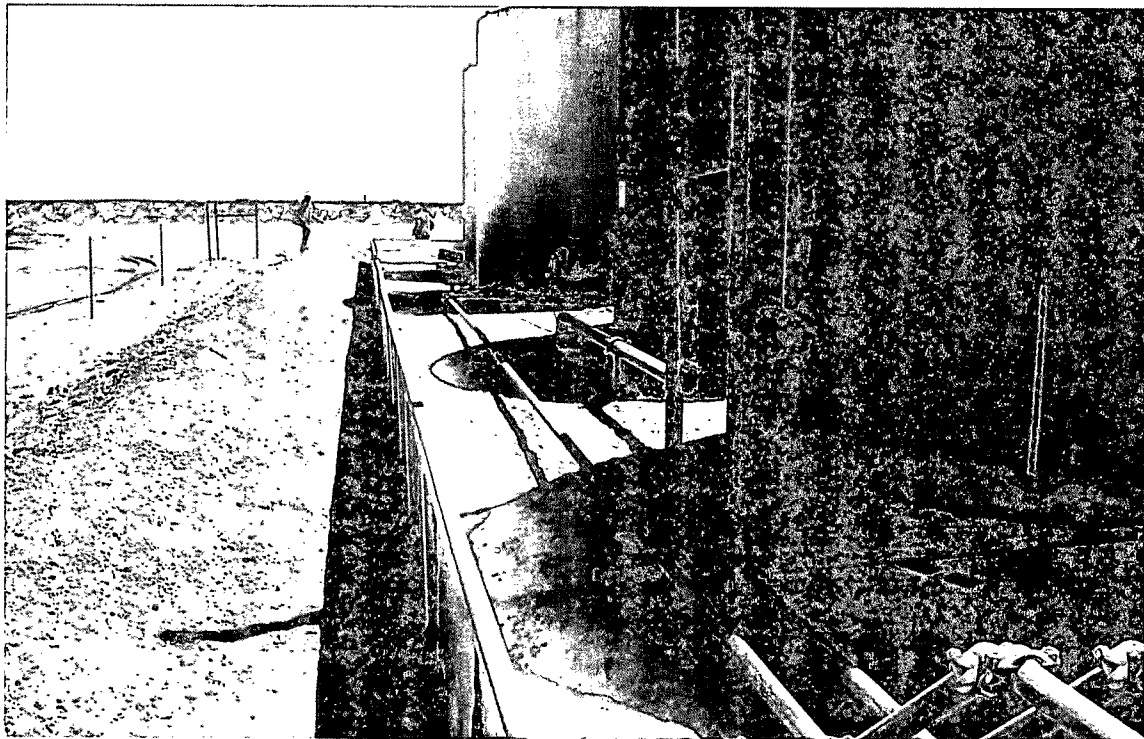
Bass 3 Federal Battery #1 - Excavation #2 (Following Backfill)



Bass 3 Federal Battery #1 - Excavation #2 (Following Backfill)

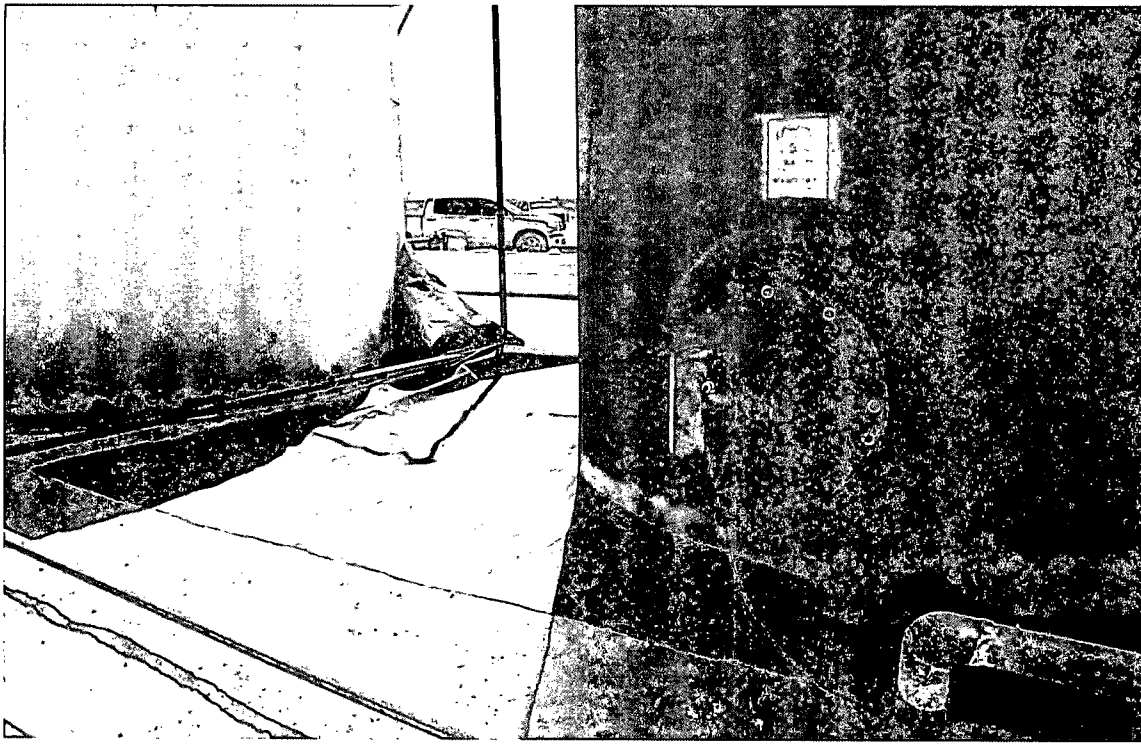


Bass 3 Federal Battery #1 - Installation of Steel Containment Area

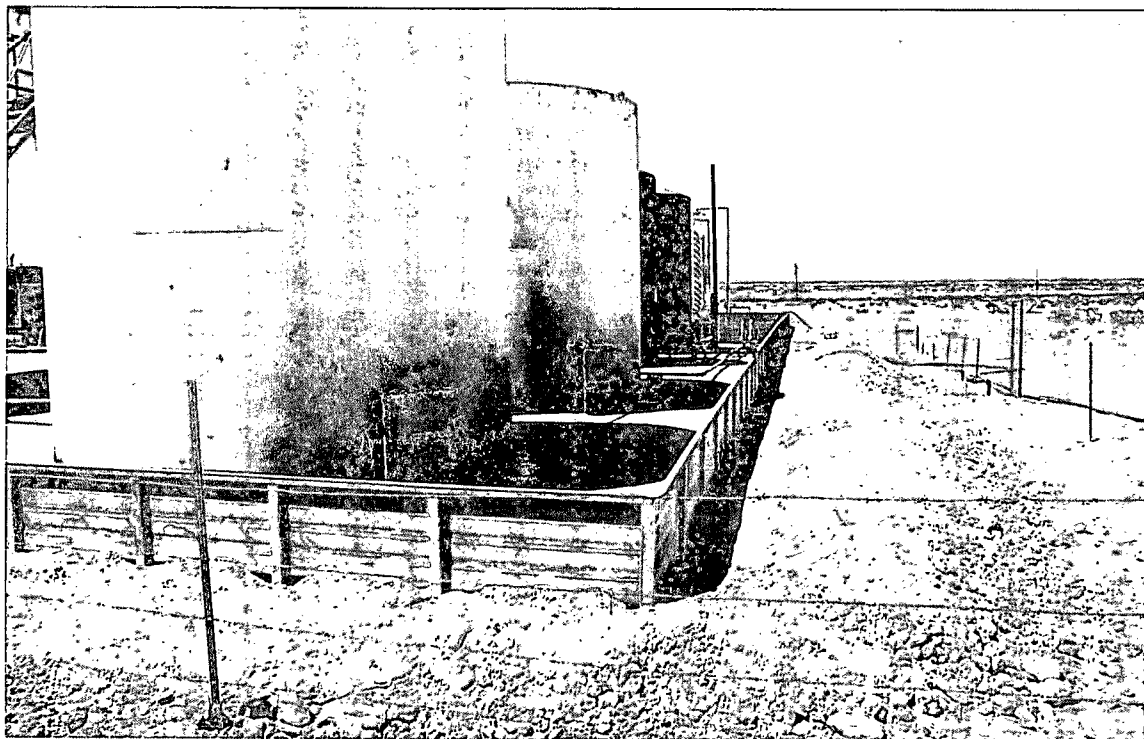


Bass 3 Federal Battery #1 - Installation of Steel Containment Area

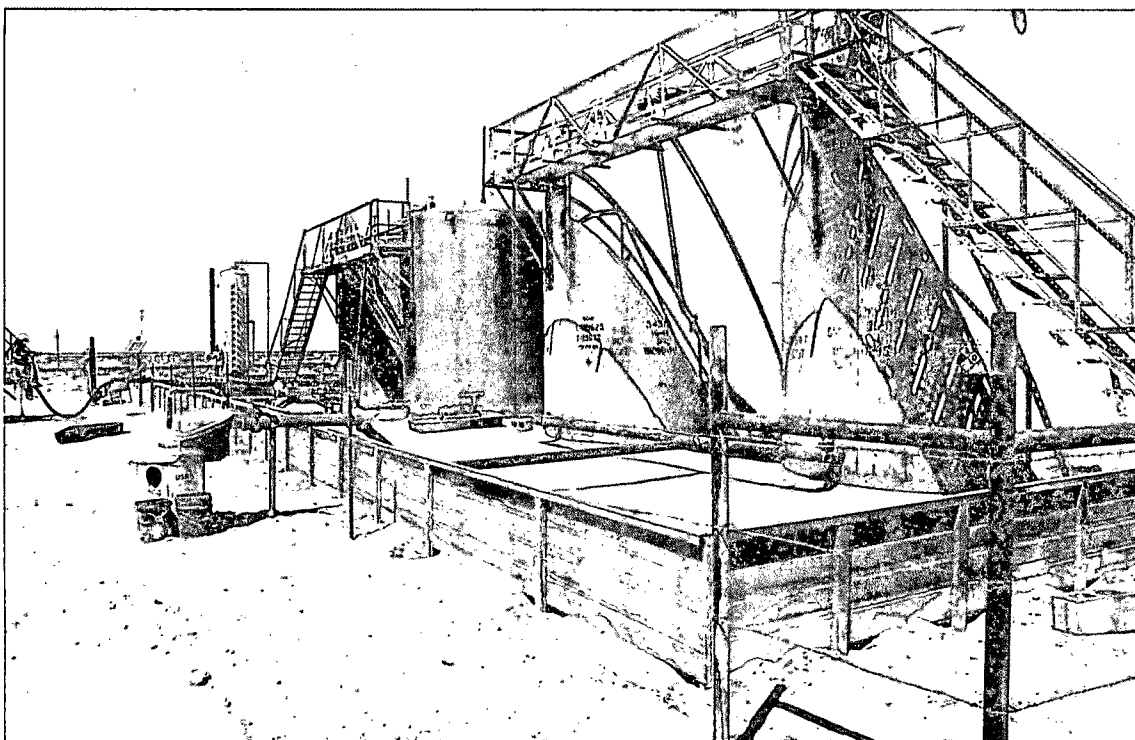




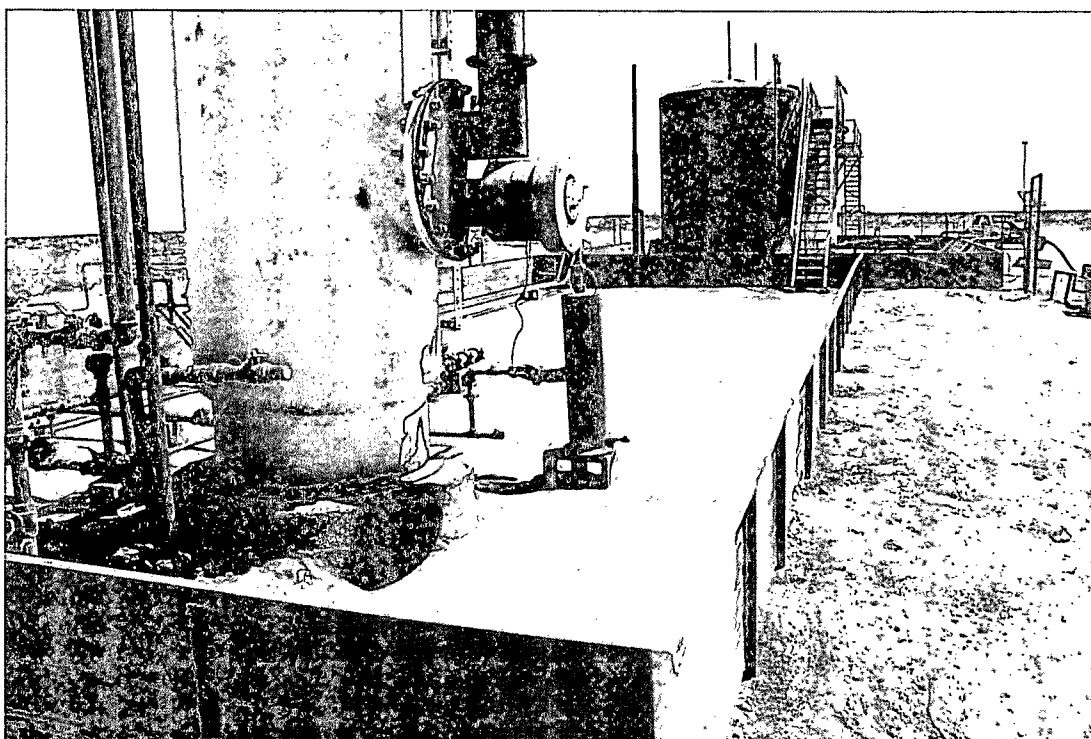
Bass 3 Federal Battery #1 - Installation of Liner & Steel Containment Area



Bass 3 Federal Battery #1 - Steel Containment Area

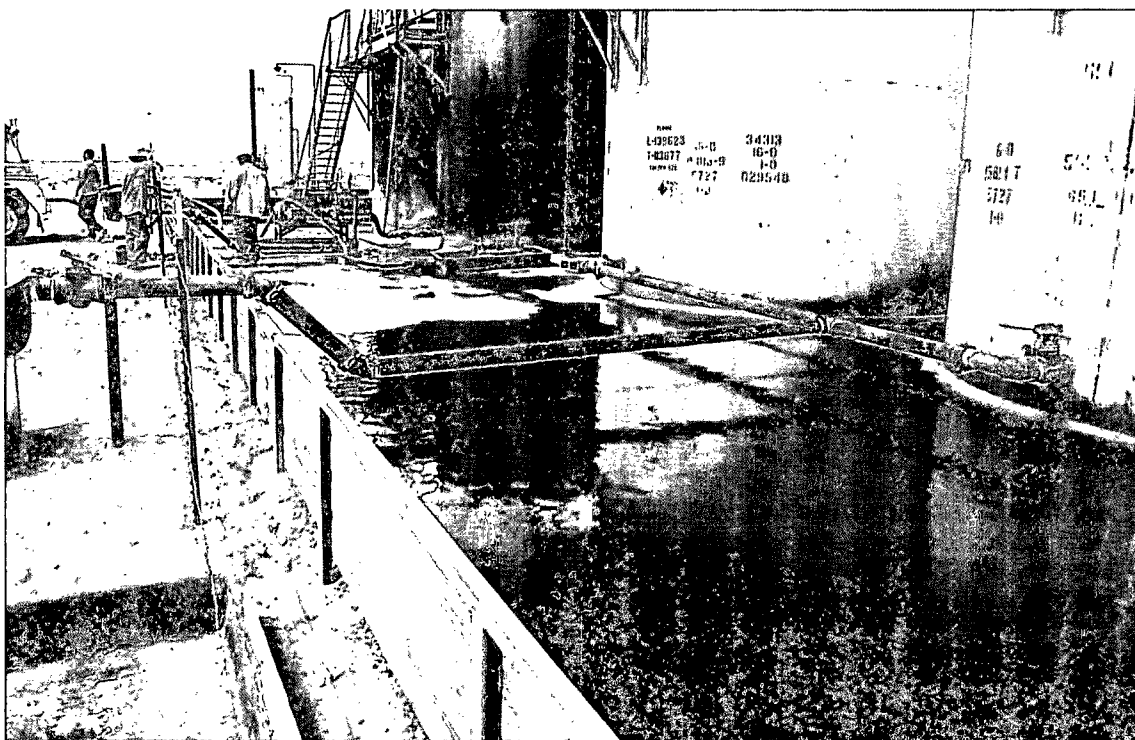


Bass 3 Federal Battery #1 - Steel Containment Area

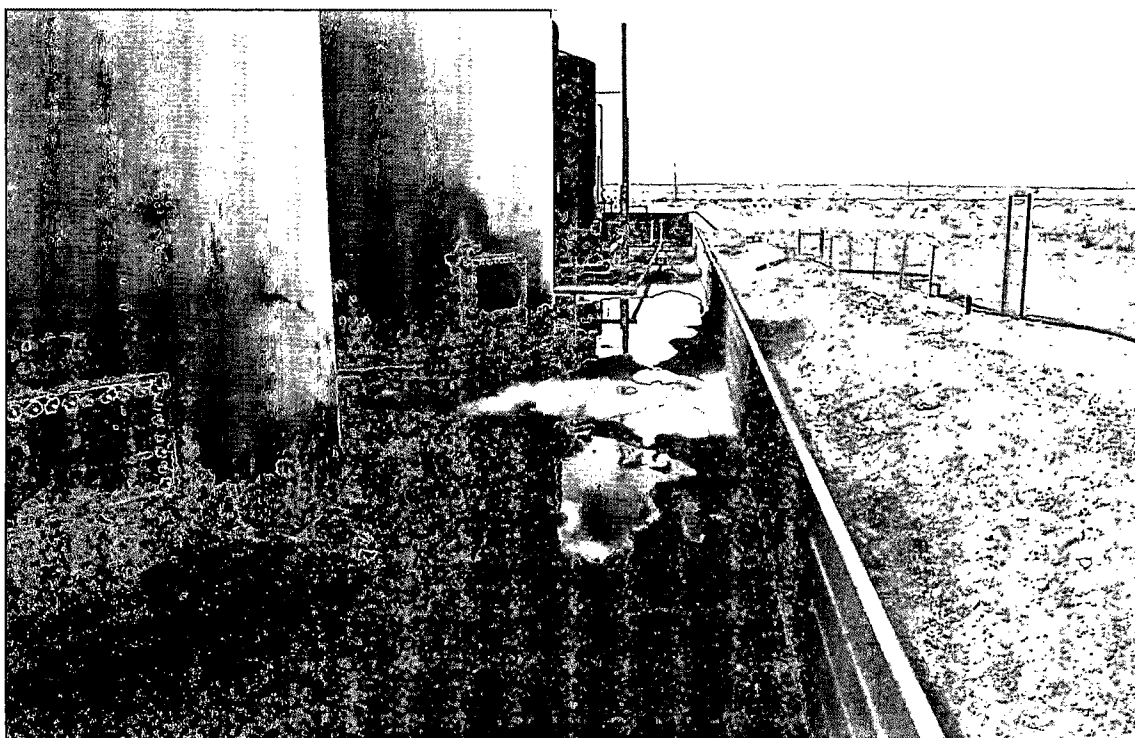


Bass 3 Federal Battery #1 - Steel Containment Area

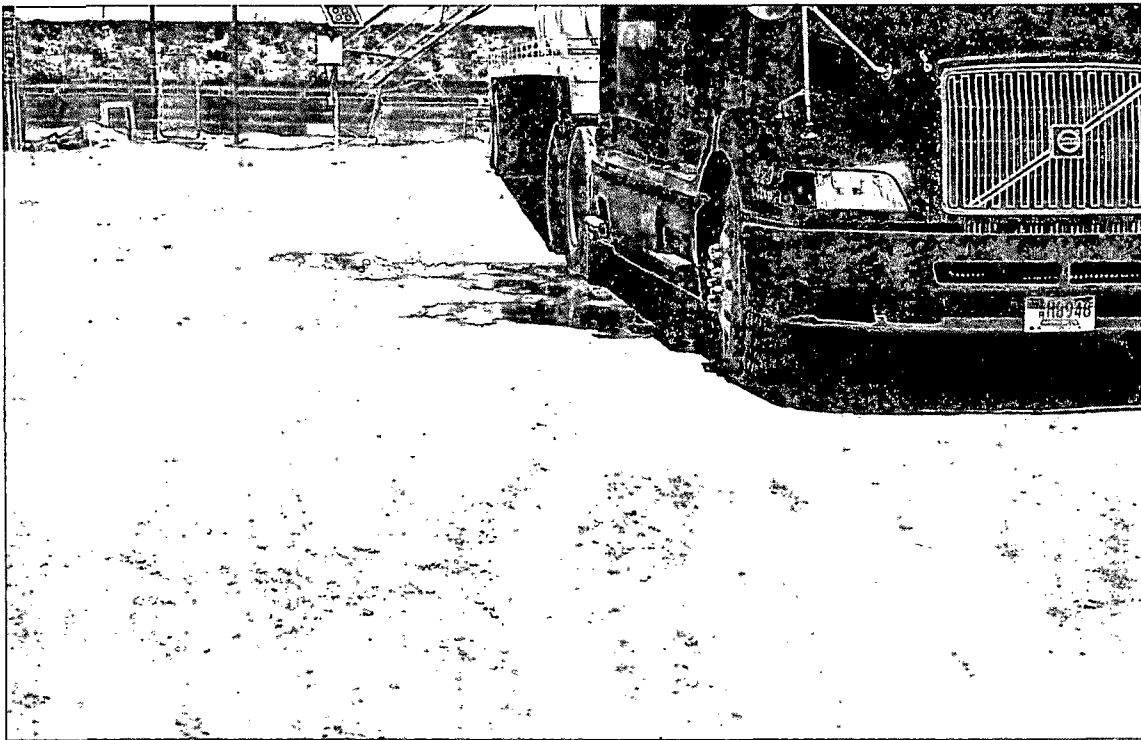




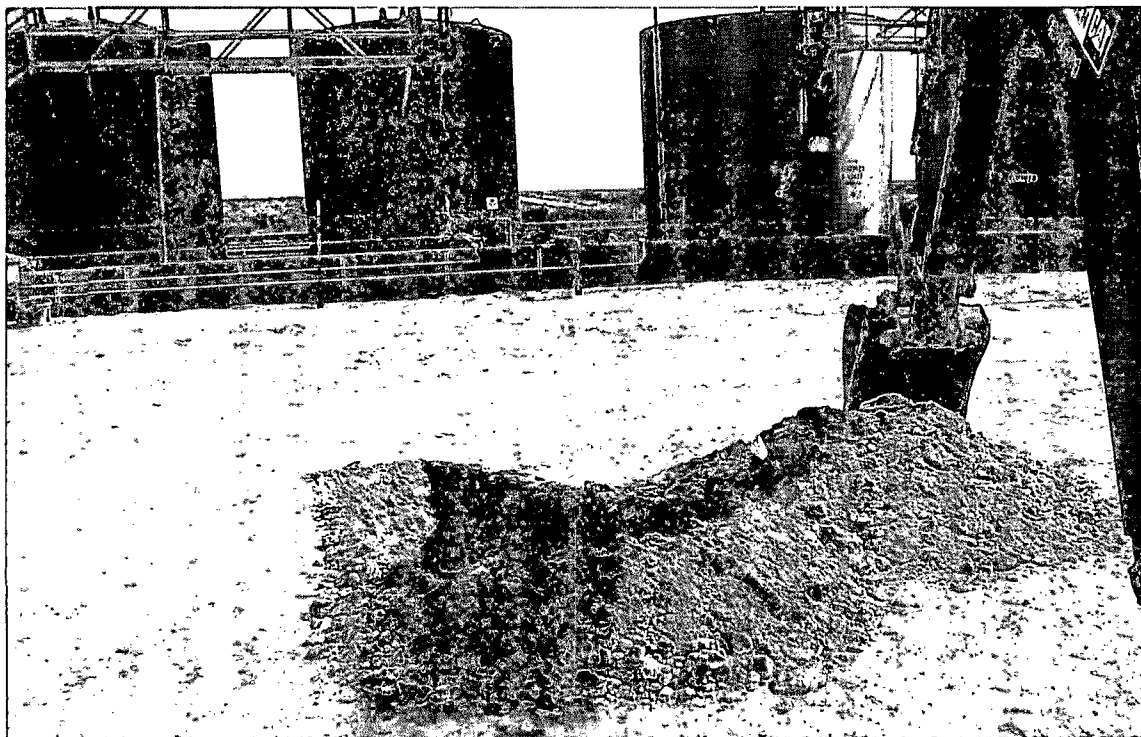
Bass 3 Federal Battery #1 - April 3, 2012, Release



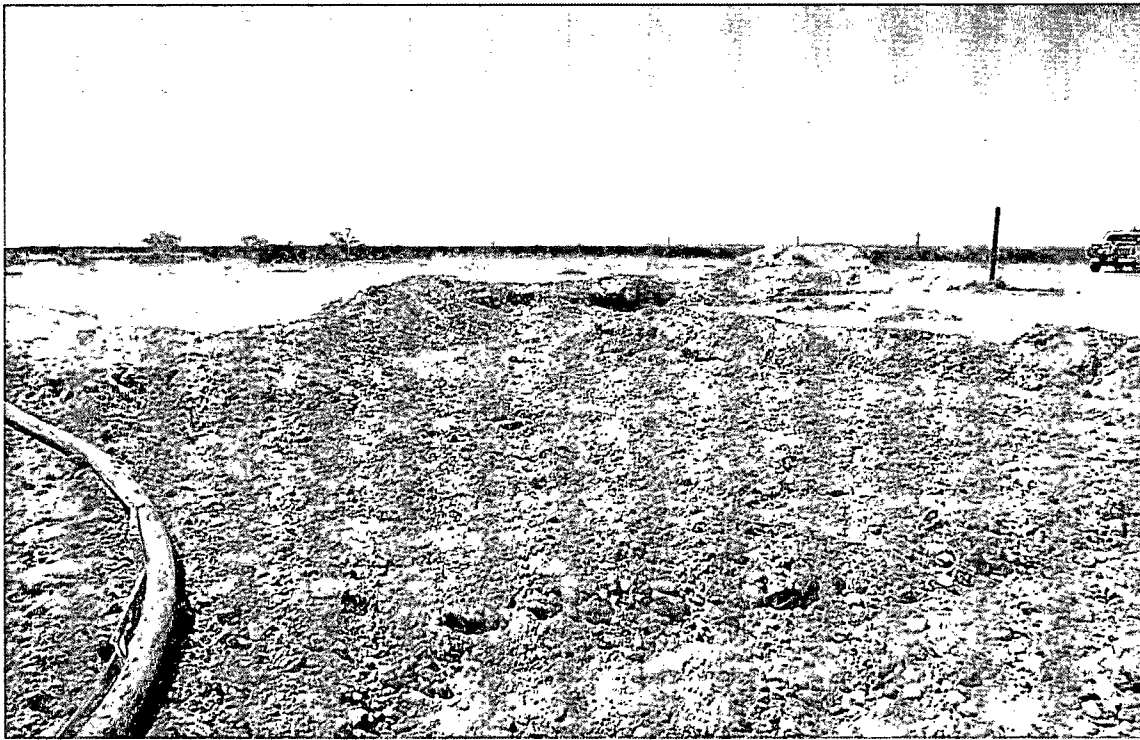
Bass 3 Federal Battery #1 - April 3, 2012, Release



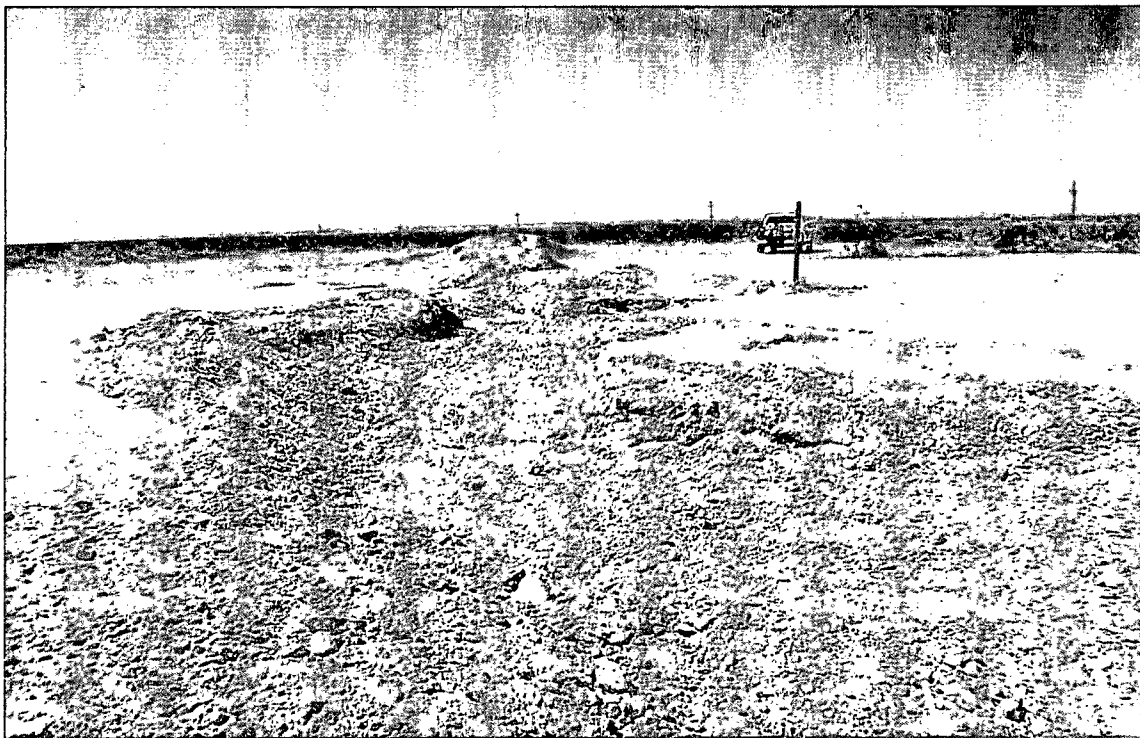
Bass 3 Federal Battery #1 - April 3, 2012, Release



Bass 3 Federal Battery #1 - Excavation #3



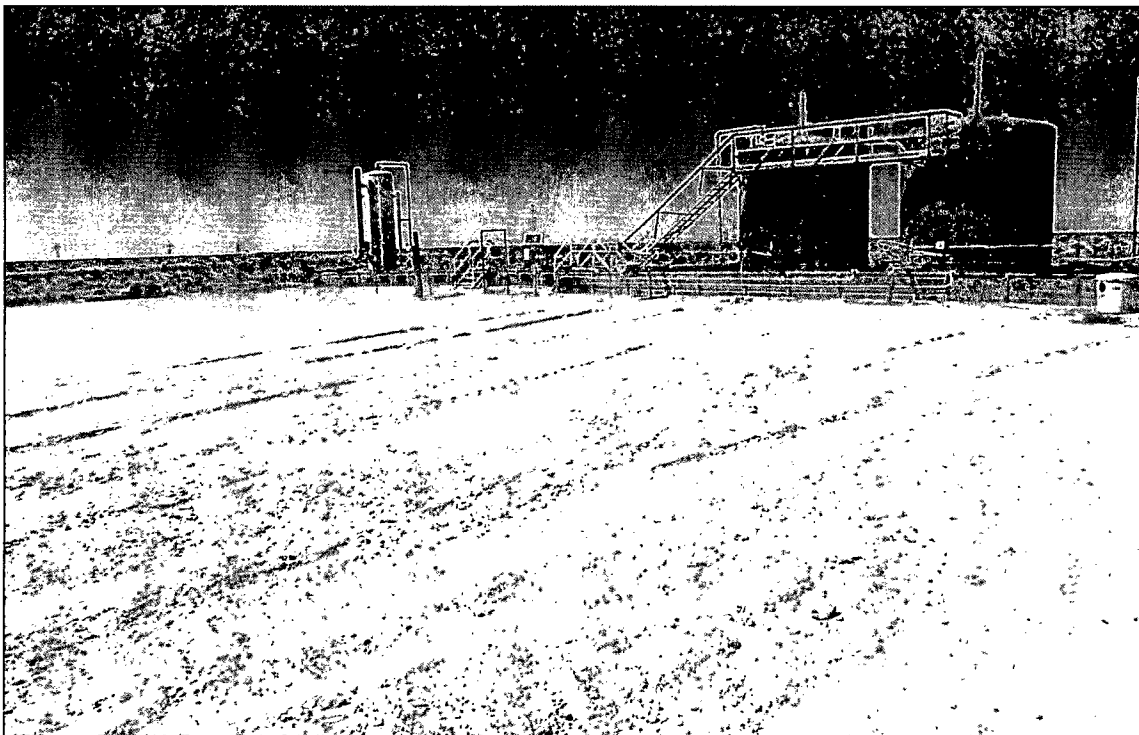
Bass 3 Federal Battery #1 - Excavation #3



Bass 3 Federal Battery #1 - Excavation #3



Bass 3 Federal Battery #1 - Excavation #3 (Following Backfill)






Bass 3 Federal Battery #1 - Excavation #3 (Following Backfill)

# **Appendix C**

## **Soil Boring Logs**

# Soil Boring SB-1

Depth Below Ground Surface	Soil Column	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description	Boring SB-1
0		1,960	1,396	Heavy	Heavy		Date Drilled <u>January 16, 2012</u>
5				Heavy	None		Thickness of Bentonite Seal <u>60 Ft</u>
10				Heavy	None	0' - 16' - Tan fine sand - caliche - sandstone	Depth of Exploratory Boring <u>60 Ft bgs</u>
15				Heavy	None		Depth to Groundwater _____
20		(1,028)	(1,168)	Heavy	None	16' - 21' - Red fine sand - sandstone	Ground Water Elevation _____
25				Heavy	None	21' - 24' - Red silty sand sand - silty clay	
30		(544)	(274)	Heavy	None		
35				Heavy	None		
40		(536)	(874)	Heavy	None	24' - 60' - Red very fine sand - sandstone	
45				Heavy	None		
50				Heavy	None		
55		(<120)		None	None		
60		(<120)	(0.0)	None	None		

 Indicates the PSH level measured on \_\_\_\_\_  
 Indicates the groundwater level measured on \_\_\_\_\_  
 Indicates samples selected for Laboratory Analysis.  
 PID Head-space reading in ppm obtained with a photo-ionization detector.

## Completion Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

**Soil Boring SB-1**

BOPCO, LP  
 Bass 3 Federal Battery #1 Remediation & Retro-Fit  
 Eddy County, New Mexico



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

Prep By: BJA	Checked By: BRB
May 11, 2012	

# Soil Boring SB-2

Depth Below Ground Surface	Soil Column	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0			1,542	Heavy	Heavy	0' - 1' - Brownish tan fine sand - sandstone
5		(0.2)		None	None	1' - 9' - Tan fine sand - sandstone - caliche
10		(2.7)		None	None	
15		9.7		None	None	9' - 16' - Brown fine sand - sandstone
20		(1,696)	(0.0)	None	None	
25				Slight	None	
30				Slight	None	
35				None	None	16' - 57' - Red fine sand - sandstone
40		2,256		None	None	
45				None	None	
50		(2,428)		None	None	
55				None	None	
60				None	None	
65				None	None	57' - 75' - Red fine sand with clay
70				None	None	
75		(1,188)		None	None	75' - 82' - Red silty sand - silty clay
80				None	None	
85		644		None	None	
90				None	None	82' - 100' - Red fine sand
95		( <u>&lt;120</u> )		None	None	
100		( <u>&lt;120</u> )		None	None	

Boring SB-2  
 Date Drilled January 17, 2012  
 Thickness of Bentonite Seal 100 Ft  
 Depth of Exploratory Boring 100 Ft bgs  
 Depth to Groundwater  
 Ground Water Elevation

Indicates the PSH level measured on  
 Indicates the groundwater level measured on  
 Indicates samples selected for Laboratory Analysis.  
 PID Head-space reading in ppm obtained with a photo-ionization detector.

## Completion Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring SB-2

BOPCO, LP  
 Bass 3 Federal Battery #1 Remediation & Retro-Fit  
 Eddy County, New Mexico



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

Prep By: BJA	Checked By: BRB
May 11, 2012	

# Soil Boring SB-3

Depth Below Ground Surface	Soil Column	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0			681	Heavy	Heavy	
5			0.7	None	None	1' - 11' - Tan fine sand - sandstone - caliche
10			0.1	None	None	
15			0.0	None	None	
20			0.0	None	None	
25			0.0	Slight	None	11' - 40' - Red very fine sand - sandstone
30				Slight	None	
35				None	None	
40		232		None	None	40' - 45' - Red fine sand - sandy clay
45		<120		None	None	

## Boring SB-3

Date Drilled January 17, 2012  
 Thickness of Bentonite Seal 45 Ft  
 Depth of Exploratory Boring 45 Ft bgs  
 Depth to Groundwater  
 Ground Water Elevation

▼ Indicates the PSH level measured on  
 ▼ Indicates the groundwater level measured on  
 ○ Indicates samples selected for Laboratory Analysis.  
 PID Head-space reading in ppm obtained with a photo-ionization detector.

## Completion Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

**Soil Boring SB-3**

**BOPCO, LP**  
 Bass 3 Federal Battery #1 Remediation & Retro-Fit  
 Eddy County, New Mexico



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

Prep By: BJA

Checked By: BRB

May 11, 2012



# **Appendix D**

## **Laboratory Analytical Reports**

January 24, 2012

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BASS 3 FEDERAL BATTERY #1 REMEDIATION & RETRO-FIT

Enclosed are the results of analyses for samples received by the laboratory on 01/19/12 11:45.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

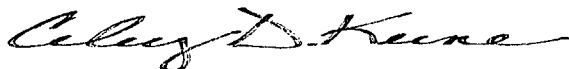
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/16/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 1 @ 5' (H200132-01)**

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	394	10.0	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	2300	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	314	10.0	01/24/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	99.5 %	55.5-154							
Surrogate: 1-Chlorooctadecane	91.7 %	57.6-158							

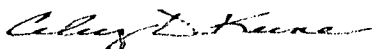
**Sample ID: SB - 1 @ 10' (H200132-02)**

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	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	79.5	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	33.8	10.0	01/24/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	93.9 %	55.5-154							
Surrogate: 1-Chlorooctadecane	101 %	57.6-158							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/16/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 1 @ 20' (H200132-03)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1540	16.0	01/20/2012	ND	448	112	400	7.41		
TPH 8015M			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	207	10.0	01/24/2012	ND	192	95.9	200	9.99		
DRO >C10-C28	1660	10.0	01/24/2012	ND	206	103	200	8.99		
EXT DRO >C28-C35	275	10.0	01/24/2012	ND						

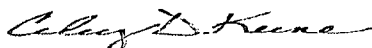
  

Surrogate: 1-Chlorooctane	104 %	55.5-154
Surrogate: 1-Chlorooctadecane	87.5 %	57.6-158

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. 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 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 hereunder by Cardinal, regardless 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.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/16/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 1 @ 30' (H200132-04)**

BTX 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	01/23/2012	ND	1.97	98.7	2.00	1.10	
Toluene*	<0.050	0.050	01/23/2012	ND	2.12	106	2.00	0.0184	
Ethylbenzene*	<0.050	0.050	01/23/2012	ND	2.13	107	2.00	0.824	
Total Xylenes*	<0.150	0.150	01/23/2012	ND	6.59	110	6.00	0.938	

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 64.4-134

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	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	105	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	24.1	10.0	01/24/2012	ND					

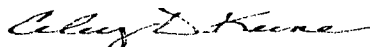
Surrogate: 1-Chlorooctane 93.8 % 55.5-154

Surrogate: 1-Chlorooctadecane 116 % 57.6-158

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/16/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 1 @ 40' (H200132-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	01/20/2012	ND	448	112	400	7.41		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	55.5	10.0	01/24/2012	ND	192	95.9	200	9.99		
DRO >C10-C28	721	10.0	01/24/2012	ND	206	103	200	8.99		
EXT DRO >C28-C35	109	10.0	01/24/2012	ND						

Surrogate: 1-Chlorooctane 87.3 % 55.5-154

Surrogate: 1-Chlorooctadecane 73.7 % 57.6-158


**Sample ID: SB - 1 @ 55' (H200132-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>32.0</b>	16.0	01/20/2012	ND	448	112	400	7.41		

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/16/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 1 @ 60' (H200132-07)**

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	01/23/2012	ND	1.97	98.7	2.00	1.10	
Toluene*	<0.050	0.050	01/23/2012	ND	2.12	106	2.00	0.0184	
Ethylbenzene*	<0.050	0.050	01/23/2012	ND	2.13	107	2.00	0.824	
Total Xylenes*	<0.150	0.150	01/23/2012	ND	6.59	110	6.00	0.938	

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 64.4-134

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/20/2012	ND	448	112	400	7.41	

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	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	16.2	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	19.2	10.0	01/24/2012	ND					

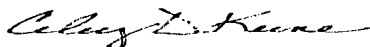
Surrogate: 1-Chlorooctane 93.7 % 55.5-154

Surrogate: 1-Chlorooctadecane 110 % 57.6-158

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\*=Accredited Analyte

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Celest D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

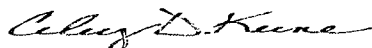
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



[illegible]



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

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January 24, 2012

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BASS 3 FEDERAL BATTERY #1 REMEDIATION & RETRO-FIT

Enclosed are the results of analyses for samples received by the laboratory on 01/19/12 11:45.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

Cardinal Laboratories is accredited 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,

A handwritten signature in black ink that reads "Coley D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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:	01/19/2012	Sampling Date:	01/17/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 2 @ 5' (H200131-01)**

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	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	<10.0	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	<10.0	10.0	01/24/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	85.0 %	55.5-154							
Surrogate: 1-Chlorooctadecane	101 %	57.6-158							

**Sample ID: SB - 2 @ 10' (H200131-02)**

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	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	<10.0	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	<10.0	10.0	01/24/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	90.5 %	55.5-154							
Surrogate: 1-Chlorooctadecane	98.9 %	57.6-158							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/17/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

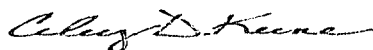
**Sample ID: SB - 2 @ 20' (H200131-03)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>718</b>	16.0	01/20/2012	ND	448	112	400	7.41	
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	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	<10.0	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	<10.0	10.0	01/24/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	90.7 %	55.5-154							
Surrogate: 1-Chlorooctadecane	114 %	57.6-158							

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/17/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 2 @ 50' (H200131-04)**

BTX 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	01/23/2012	ND	1.97	98.7	2.00	1.10		
Toluene*	<0.050	0.050	01/23/2012	ND	2.12	106	2.00	0.0184		
Ethylbenzene*	<0.050	0.050	01/23/2012	ND	2.13	107	2.00	0.824		
Total Xylenes*	<0.150	0.150	01/23/2012	ND	6.59	110	6.00	0.938		

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 64.4-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2360	16.0	01/20/2012	ND	448	112	400	7.41	

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	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	<10.0	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	<10.0	10.0	01/24/2012	ND					

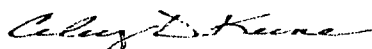
Surrogate: 1-Chlorooctane 86.7 % 55.5-154

Surrogate: 1-Chlorooctadecane 110 % 57.6-158

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/17/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 2 @ 75' (H200131-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1390</b>	16.0	01/20/2012	ND	448	112	400	7.41	
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	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	<10.0	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	<10.0	10.0	01/24/2012	ND					
<i>Surrogate: 1-Chlorooctane</i>									
	85.3 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>									
	95.7 %	57.6-158							

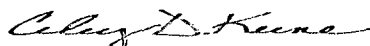
**Sample ID: SB - 2 @ 95' (H200131-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	01/20/2012	ND	448	112	400	7.41	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/17/2012
Reported:	01/24/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 2 @ 100' (H200131-07)**

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	01/23/2012	ND	1.97	98.7	2.00	1.10		
Toluene*	<0.050	0.050	01/23/2012	ND	2.12	106	2.00	0.0184		
Ethylbenzene*	<0.050	0.050	01/23/2012	ND	2.13	107	2.00	0.824		
Total Xylenes*	<0.150	0.150	01/23/2012	ND	6.59	110	6.00	0.938		

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 64.4-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	01/20/2012	ND	448	112	400	7.41	

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	01/24/2012	ND	192	95.9	200	9.99	
DRO >C10-C28	11.9	10.0	01/24/2012	ND	206	103	200	8.99	
EXT DRO >C28-C35	<10.0	10.0	01/24/2012	ND					

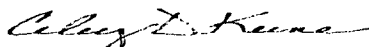
Surrogate: 1-Chlorooctane 87.8 % 55.5-154

Surrogate: 1-Chlorooctadecane 102 % 57.6-158

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Celey D. Keene, Lab Director/Quality Manager

**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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Celey D. Keene, Lab Director/Quality Manager







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

---

January 23, 2012

BEN J. ARGUJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BASS 3 FEDERAL BATTERY #1 REMEDIATION & RETRO-FIT

Enclosed are the results of analyses for samples received by the laboratory on 01/19/12 11:45.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited 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,

A handwritten signature in black ink, appearing to read "Celey D. Keene". The signature is fluid and cursive, with a large, stylized 'C' at the beginning.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/17/2012
Reported:	01/23/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 3 @ 5' (H200129-01)**

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	01/20/2012	ND	193	96.3	200	9.45	
<b>DRO &gt;C10-C28</b>	<b>40.9</b>	10.0	01/20/2012	ND	179	89.6	200	5.71	
EXT DRO >C28-C35	<10.0	10.0	01/20/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	85.0 %	55.5-154							
Surrogate: 1-Chlorooctadecane	101 %	57.6-158							

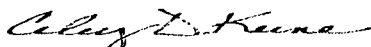
**Sample ID: SB - 3 @ 10' (H200129-02)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1840</b>	16.0	01/20/2012	ND	448	112	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	01/20/2012	ND	193	96.3	200	9.45	
DRO >C10-C28	<10.0	10.0	01/20/2012	ND	179	89.6	200	5.71	
EXT DRO >C28-C35	<10.0	10.0	01/20/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	82.7 %	55.5-154							
Surrogate: 1-Chlorooctadecane	93.6 %	57.6-158							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/17/2012
Reported:	01/23/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 3 @ 25' (H200129-03)**

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	01/23/2012	ND	1.97	98.7	2.00	1.10	
Toluene*	<0.050	0.050	01/23/2012	ND	2.12	106	2.00	0.0184	
Ethylbenzene*	<0.050	0.050	01/23/2012	ND	2.13	107	2.00	0.824	
Total Xylenes*	<0.150	0.150	01/23/2012	ND	6.59	110	6.00	0.938	

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 64.4-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	01/20/2012	ND	448	112	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	01/20/2012	ND	193	96.3	200	9.45	
DRO >C10-C28	<10.0	10.0	01/20/2012	ND	179	89.6	200	5.71	
EXT DRO >C28-C35	<10.0	10.0	01/20/2012	ND					

Surrogate: 1-Chlorooctane 94.7 % 55.5-154

Surrogate: 1-Chlorooctadecane 107 % 57.6-158

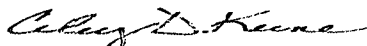
**Sample ID: SB - 3 @ 40' (H200129-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	01/20/2012	ND	448	112	400	7.41	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	01/19/2012	Sampling Date:	01/17/2012
Reported:	01/23/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SB - 3 @ 45' (H200129-05)**

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	01/23/2012	ND	1.97	98.7	2.00	1.10		
Toluene*	<0.050	0.050	01/23/2012	ND	2.12	106	2.00	0.0184		
Ethylbenzene*	<0.050	0.050	01/23/2012	ND	2.13	107	2.00	0.824		
Total Xylenes*	<0.150	0.150	01/23/2012	ND	6.59	110	6.00	0.938		

Surrogate: 4-Bromofluorobenzene (PIE) 110 % 64.4-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/20/2012	ND	448	112	400	7.41	

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	01/20/2012	ND	193	96.3	200	9.45	
DRO >C10-C28	<10.0	10.0	01/20/2012	ND	179	89.6	200	5.71	
EXT DRO >C28-C35	<10.0	10.0	01/20/2012	ND					

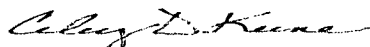
Surrogate: 1-Chlorooctane 89.6 % 55.5-154

Surrogate: 1-Chlorooctadecane 102 % 57.6-158

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**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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Celey D. Keene, Lab Director/Quality Manager

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

[illegible]



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

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March 12, 2012

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BASS 3 FEDERAL BATTERY #1 REMEDIATION & RETRO-FIT

Enclosed are the results of analyses for samples received by the laboratory on 03/06/12 9:30.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited 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

Lab Director/Quality Manager



**Analytical Results For:**

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

Received:	03/06/2012	Sampling Date:	03/05/2012
Reported:	03/12/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SAMPLE #1 (H200576-01)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>2440</b>	16.0	03/07/2012	ND	416	104	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>1100</b>	100	03/09/2012	ND	250	125	200	2.40	
<b>DRO &gt;C10-C28</b>	<b>7180</b>	100	03/09/2012	ND	199	99.7	200	0.875	
<b>EXT DRO &gt;C28-C35</b>	<b>1140</b>	100	03/09/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	172 %	55.5-154							
Surrogate: 1-Chlorooctadecane	140 %	57.6-158							

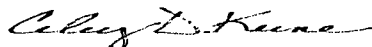
**Sample ID: SAMPLE #2 (H200576-02)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>2680</b>	16.0	03/07/2012	ND	416	104	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>3920</b>	100	03/09/2012	ND	250	125	200	2.40	
<b>DRO &gt;C10-C28</b>	<b>11000</b>	100	03/09/2012	ND	199	99.7	200	0.875	
<b>EXT DRO &gt;C28-C35</b>	<b>1820</b>	100	03/09/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	237 %	55.5-154							
Surrogate: 1-Chlorooctadecane	222 %	57.6-158							

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\*=Accredited Analyte

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Celestine D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	03/06/2012	Sampling Date:	03/05/2012
Reported:	03/12/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SAMPLE #3 (H200576-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4240	16.0	03/07/2012	ND	416	104	400	0.00	
TPH 8015M	mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	5360	100	03/09/2012	ND	250	125	200	2.40	
DRO >C10-C28	18300	100	03/09/2012	ND	199	99.7	200	0.875	
EXT DRO >C28-C35	2470	100	03/09/2012	ND					
Surrogate: 1-Chlorooctane	435 %	55.5-154							
Surrogate: 1-Chlorooctadecane	333 %	57.6-158							

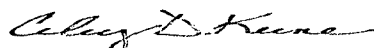
**Sample ID: SAMPLE #4 (H200576-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4160	16.0	03/07/2012	ND	416	104	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	03/10/2012	ND	250	125	200	2.40		
DRO >C10-C28	116	10.0	03/10/2012	ND	199	99.7	200	0.875		
EXT DRO >C28-C35	41.5	10.0	03/10/2012	ND						
Surrogate: 1-Chlorooctane	89.9 %	55.5-154								
Surrogate: 1-Chlorooctadecane	80.6 %	57.6-158								

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	03/06/2012	Sampling Date:	03/05/2012
Reported:	03/12/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SAMPLE #5 (H200576-05)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>5440</b>	16.0	03/07/2012	ND	416	104	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>2530</b>	100	03/09/2012	ND	250	125	200	2.40	
<b>DRO &gt;C10-C28</b>	<b>17700</b>	100	03/09/2012	ND	199	99.7	200	0.875	
<b>EXT DRO &gt;C28-C35</b>	<b>1910</b>	100	03/09/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	304 %	55.5-154							
Surrogate: 1-Chlorooctadecane	277 %	57.6-158							

**Sample ID: SAMPLE #6 (H200576-06)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>11100</b>	16.0	03/07/2012	ND	416	104	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>644</b>	100	03/09/2012	ND	250	125	200	2.40	
<b>DRO &gt;C10-C28</b>	<b>12500</b>	100	03/09/2012	ND	199	99.7	200	0.875	
<b>EXT DRO &gt;C28-C35</b>	<b>1900</b>	100	03/09/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	193 %	55.5-154							
Surrogate: 1-Chlorooctadecane	273 %	57.6-158							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

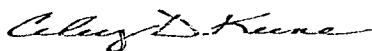
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	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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Celey D. Keene, Lab Director/Quality Manager

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]

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Relinquished By: 	Date: 3/5/12 Time: 1555	Received By: 	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No REMARKS:
Relinquished By: 	Date: 3/6/12 Time: 0700	Received By: 	Please email results to <a href="mailto:perf@basinenv.com">perf@basinenv.com</a> & <a href="mailto:TASa@basinenv.com">TASa@basinenv.com</a>
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: (Initials) 	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



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

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April 02, 2012

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BASS 3 FEDERAL BATTERY #1 REMEDIATION & RETRO-FIT

Enclosed are the results of analyses for samples received by the laboratory on 03/29/12 16:15.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

Cardinal Laboratories is accredited 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

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	03/29/2012	Sampling Date:	03/29/2012
Reported:	04/02/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SAMPLE #1 (H200753-01)**

TPH 8015M	mg/kg	Analyzed By: MS/							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	106	10.0	03/30/2012	ND	183	91.7	200	6.89	
DRO >C10-C28	470	10.0	03/30/2012	ND	178	88.8	200	8.58	
EXT DRO >C28-C35	44.8	10.0	03/30/2012	ND					

Surrogate: 1-Chlorooctane 135 % 55.5-154

Surrogate: 1-Chlorooctadecane 116 % 57.6-158

**Sample ID: SAMPLE #2 (H200753-02)**

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	03/30/2012	ND	183	91.7	200	6.89	
DRO >C10-C28	58.9	10.0	03/30/2012	ND	178	88.8	200	8.58	
EXT DRO >C28-C35	15.7	10.0	03/30/2012	ND					

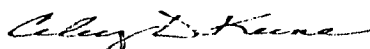
Surrogate: 1-Chlorooctane 126 % 55.5-154

Surrogate: 1-Chlorooctadecane 120 % 57.6-158

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	03/29/2012	Sampling Date:	03/29/2012
Reported:	04/02/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1 REMEDIA	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: SAMPLE #3 (H200753-03)**

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	03/30/2012	ND	183	91.7	200	6.89	
<b>DRO &gt;C10-C28</b>	<b>201</b>	10.0	03/30/2012	ND	178	88.8	200	8.58	
<b>EXT DRO &gt;C28-C35</b>	<b>64.3</b>	10.0	03/30/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	114 %	55.5-154							
Surrogate: 1-Chlorooctadecane	96.4 %	57.6-158							


**Sample ID: SAMPLE #4 (H200753-04)**

TPH 8015M		mg/kg		Analyzed By: MS/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	61.8	10.0	03/30/2012	ND	183	91.7	200	6.89	
<b>DRO &gt;C10-C28</b>	<b>460</b>	10.0	03/30/2012	ND	178	88.8	200	8.58	
<b>EXT DRO &gt;C28-C35</b>	<b>37.5</b>	10.0	03/30/2012	ND					
<hr/>									
Surrogate: 1-Chlorooctane	118 %	55.5-154							
Surrogate: 1-Chlorooctadecane	110 %	57.6-158							

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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

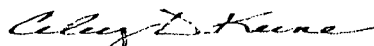
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]



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

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April 20, 2012

BEN J. ARGUJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BASS 3 FEDERAL BATTERY #1

Enclosed are the results of analyses for samples received by the laboratory on 04/18/12 8:40.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

Cardinal Laboratories is accredited 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,

A handwritten signature in black ink, appearing to read "Celey D. Keene". The signature is fluid and cursive, with a long horizontal stroke at the end.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

 Received: 04/18/2012  
 Reported: 04/20/2012  
 Project Name: BASS 3 FEDERAL BATTERY #1  
 Project Number: NONE GIVEN  
 Project Location: EDDY CO. NM

 Sampling Date: 04/17/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SAMPLE #1 (H200891-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	656	16.0	04/19/2012	ND	432	108	400	0.00	

**Sample ID: SAMPLE #2 (H200891-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	04/19/2012	ND	432	108	400	0.00	

**Sample ID: SAMPLE #3 (H200891-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	04/19/2012	ND	432	108	400	0.00	

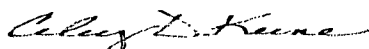
**Sample ID: SAMPLE #4 (H200891-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	04/19/2012	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/18/2012	Sampling Date:	04/17/2012
Reported:	04/20/2012	Sampling Type:	Soil
Project Name:	BASS 3 FEDERAL BATTERY #1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO. NM		

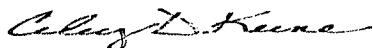
**Sample ID: SAMPLE #5 (H200891-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	288	16.0	04/19/2012	ND	432	108	400	0.00			

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

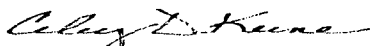
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

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