



# **PHASE II ENVIRONMENTAL SAMPLING ASSESSMENT**

## **EnerVest Operating, LLC West Loco Hills Unit Tract 26 Well #1**

**Minor Saltwater Spill**

**Site location: WLHU Tract 26 Well #1**

**API # 30-015-03233**

**Section 1, T18S – R29E**

**Eddy County, NM**

**Coordinates:**

**Longitude -104.02964**

**Latitude 32.77184**

**December 4th, 2008**

**A Report For:  
New Mexico Oil Conservation Division, Artesia  
&  
EnerVest Operating LLC  
Mr. Elroy Ardoin**

Prepared by:  
Baseline Solutions LLC  
Andy Price, REM  
511 West Ohio, Suite 400  
Midland, Texas 79701

## TABLE OF CONTENTS

### EXECUTIVE SUMMARY

- 1.0 INTRODUCTION
  - A. Site Description / Location
- 2.0 PURPOSE
- 3.0 PROCEDURES / METHODS
  - A. Sampling Methods and Procedures
- 4.0 FINDINGS AND INVESTIGATION RESULTS
- 5.0 HYDROLOGY
- 6.0 REGULATORY REVIEW
  - A. New Mexico Oil Conservation Division C141
  - B. New Mexico Oil Conservation Division Rule 116 & Rule 119
- 7.0 CONCLUSIONS / RECOMMENDATIONS
- 8.0 Limitations

### APPENDIXES

- A. Site Photos
- B. Chain of Custody
- C. Lab Report
- D. OCD Form C141
- E. Maps

## EXECUTIVE SUMMARY

Baseline Solutions conducted a Phase II Environmental Sampling Assessment at the WLHU Tract 26 #1 for a minor saltwater spill. The spill occurrence is described as a flow line leak occurring at the tank battery. The spill location is described as follows.

WLHU Tract 26 Well #1

Section 1, T18S – R29E

Eddy County, NM

API # 30-015-03233

Coordinates:

Longitude -104.02964

Latitude 32.77184

A summary of the analytical information, research and observations gathered during the sampling investigation is as follows:

WLHU Tract 26 #1

Lab results for Chlorides and TPH levels are listed below (please see app. G).

Sample field code	Chloride PPM		Sample field code	TPH PPM
1&2 - Surface	2900		1&2 - Surface	245
3&4 - Surface	3320		3&4 - Surface	206
1-2'	156		1-2'	<50.0
2-3'	<100		2-3'	<50.0
3-3'	415		3-3'	264
4-2'	200		4-2'	<50.0

**NMOCD acceptable level for Chlorides is 250ppm and less.**

**NMOCD acceptable level for Total Petroleum Hydrocarbons is 5000ppm and less.**

**Contaminated Area Delineated:** Soil excavation with field and laboratory analysis determined the salt water spill area to have been an approximate average of 30ft X150ft.

**A total of 358.7 cubic yards was removed and delivered to the Lea Land Disposal Facility on 11/14/08 and 11/15/08. The excavated area will not be backfilled until formal approval by NMOCD.**

**Hydrology:** Hydrology data was compiled and submitted to NMOCD in the July 2<sup>nd</sup>, 2008 proposed remediation plan. No Surface hydrology issues were identified for surface run-off due to topographical gradient and rain fall average. Subsurface hydrology data indicates groundwater for this area to be at an approximate average depth of 141 ft. The OCD rating for the spill area is considered to be 0.

### **Conclusion:**

**Chloride levels** for the spill area after excavation were determined to be below 250ppm except for one small section (10'x10'), which had levels of 410ppm.

**Total Petroleum Hydrocarbon (TPH),** levels for the spill area after excavation were determined to be 245ppm at the highest level which is well below NMOCD action levels of 5,000ppm.

## 1.0 INTRODUCTION

Baseline Solutions, (Andy Price) was retained by EnerVest Operating LLC of Houston, TX, to conduct a Phase II Environmental Sampling Assessment at the Site location: WLHU Tract 26 Well #1.

### A. Site Description / Location

- Spill Location
  - Legal Description:  
Site location: WLHU Tract 26 Well #1  
Section 1, T18S – R29E  
Eddy County, NM  
API # 30-015-03233  
Coordinates:  
Longitude -104.02964  
Latitude 32.77184
- Discharge Event  
A flow line connection developed a leak resulting in the saltwater spill. The approximate spill area is 30ft X150ft.

## 2.0 Purpose

- A. The purpose of the investigation was to quantify the level of Chlorides and Total Petroleum Hydrocarbons (TPH), associated with a pipeline leak/spill located on the subject site. The Environmental Sampling Assessment was to:
- a. Delineate the area and level of contamination for the spill site.
  - b. Excavate contaminated soil for proper disposal.
  - c. Take formal lab samples which are representative of the bottom of the excavated area. Report lab results to NMOCD for approval to backfill excavated site.

## 3.0 PROCEDURES AND METHODS

The procedures and methods for this project were conducted according to EPA protocol and conducted in a professional manner within the parameters as established in the scope and purpose of this investigation.

### A. Sampling Methods and Procedures

- Visual site reconnaissance of entire property with photos
- Grab samples were taken and screened for Chlorides with an Electrical Conductivity Meter (Milwaukee Model SM802). This process is used to identify any elevated levels for chlorides for a specific depth and area.
- Grab samples were taken and screened for Total Petroleum Hydrocarbons (TPH), with a Photo Ionization Detector (Mini Rae Plus - model # PGM-76IS). This process is used to identify any elevated levels for TPH for a specific depth and area.

- The parameter of the spill area was delineated first by visual reconnaissance and screening surface samples and then with soil borings.
- A site grid was developed from data collected with grab sample screening.
- Grid samples were taken and combined within specific areas which made up the identified composite samples.
- Samples were systematically taken at Surface, 1ft depths and up to 3ft depths. Samples were screened with EC meter and PID detector. According to field screening and supported by Lab analysis, Chlorides were below OCD requirements except for a small section approximately 10ft X10ft within area 2 on sampling grid. This area had elevated chlorides at 415ppm.
- Chloride levels at surface in most of the spill area exceeded OCD action levels but were below action levels at different depths ranging from 1' through 3' with respect to site location.
- Lab Samples: Samples were taken at 4 specific grid locations, and at levels which were surface, 1ft, 2ft, and some 3' depths. Samples from each specific area were combined into Composite samples identified as 1, 2, 3, & 4. A second digit was added to indicate the depth of that sample.
- Decontamination procedures were maintained
- All samples were kept on ice until delivered to lab
- A field log was maintained
- A formal chain of custody was maintained
- Composite samples were delivered to Trace Analysis in Midland, TX - an EPA approved lab.

#### 4.0 FINDINGS AND INVESTIGATION RESULTS

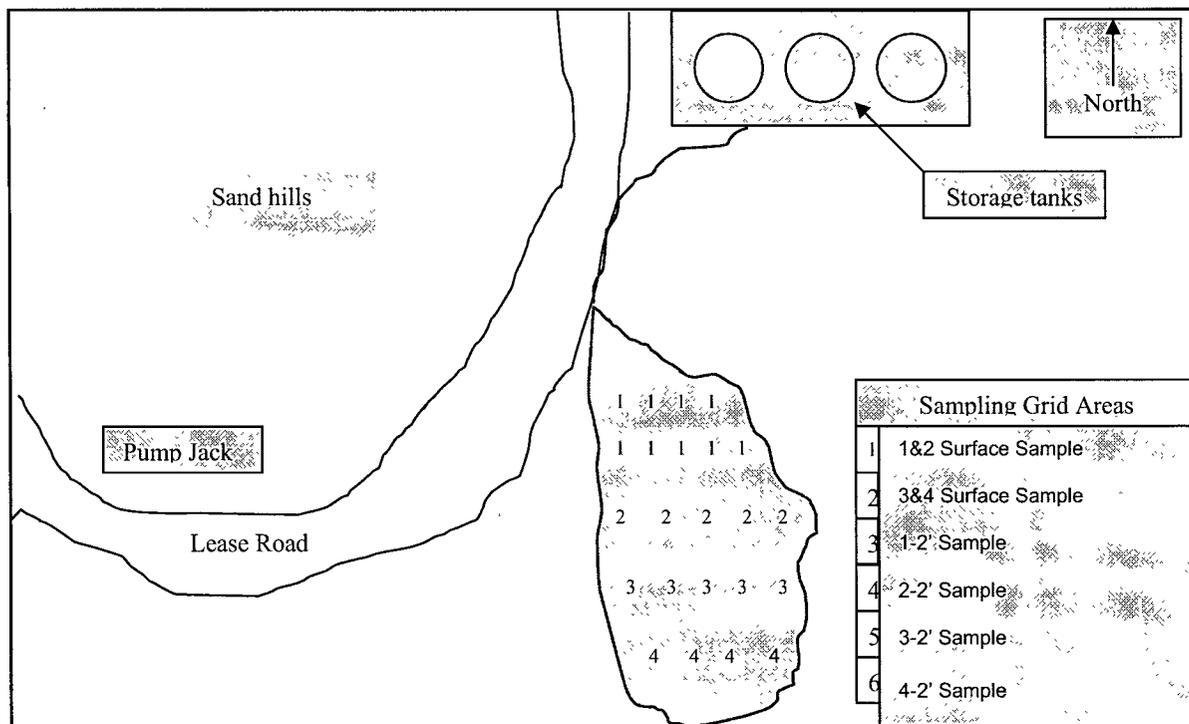
The lab results for Chlorides and TPH levels are listed below. Please see attached Trace Lab Analysis Report (app. C).

Sample field code	Chloride PPM		Sample field code	TPH PPM
1&2 - Surface	2900		1&2 - Surface	245
3&4 - Surface	3320		3&4 - Surface	206
1-2'	156		1-2'	<50.0
2-3'	<100		2-3'	<50.0
3-3'	415		3-3'	264
4-2'	200		4-2'	<50.0

**NMOCD acceptable level for Chlorides is 250ppm and less.**

**NMOCD acceptable level for Total Petroleum Hydrocarbons is 5000ppm and less.**

Sampling Grid: Field screening was conducted at surface, 1ft depth, 2ft depth and 3ft depth. Composite samples were taken in four designated areas making up a total of six lab samples. Two composite samples at surface, two composite samples at 2' and two composite at 3ft depth.



## 5.0 HYDROLOGY

Hydrology data was compiled and submitted to NMOCD in the July 2<sup>nd</sup>, 2008 proposed remediation plan. No Surface hydrology issues were identified for surface run-off due to topographical gradient and rain fall average. Subsurface hydrology data indicates groundwater for this area to be at an approximate average depth of 141 ft.

### A. GENERAL SITE CHARACTERISTICS

#### **SITE RANKING – According to NMOCD “Spill Clean up Guidelines” for “Unsaturated Contaminated Soils”**

The general site characteristics obtained during the site assessment was used to determine the appropriate soil remediation action levels using a risk based approach. Subject site soils were contaminated by saltwater and were scored according to the ranking criteria below to determine their relative threat to public health, fresh waters and the environment.

#### **Ranking Criteria**

Depth To Ground Water	Ranking Score
<50 feet	20
50 - 99	10
>100	0

Township	Range	Section	Depth to Water
16S	29E	19	110'
17S	27E	32	140'
19S	28E	9	265'
19S	29E	34	60'
19S	31E	36	130'
Average depth			141'

The above listed wells were the closest wells on record according to the New Mexico State Engineers office database (please see app. C).

### **Wellhead Protection Area**

<1000 feet from a water source, or;	
<200 feet from private domestic water source	
Yes	20
No	0

### **Distance To Surface Water Body**

<200 horizontal feet	20
200 - 1000 horizontal feet	10
>1000 horizontal feet	0

### **From NMOCD "Spill Clean up Guidelines"**

Recommended Remediation Action Level. The total ranking score determines the degree of remediation that may be required at any given site. The total ranking score is the sum of all four individual ranking criteria listed in Section IV.A.2.a.

**Total Ranking Score for this spill site is considered to be O.**

## **6.0 REGULATORY REVIEW**

- A. The NMOCD form C141 was submitted and approved on 5/5/08 to Mike Bratcher, OCD Artesia office. This sampling investigation is intended to be in compliance with New Mexico Oil Conservation Division:
- Rule 116 RELEASE NOTIFICATION AND CORRECTIVE ACTION [1-1-50...2-1-96; A, 3-15-97]
    1. 116.D. CORRECTIVE ACTION: The responsible person must complete Division approved corrective action for releases which endanger public health or the environment. Releases will be addressed in accordance with a remediation plan submitted to and approved by the Division or with an abatement plan submitted in accordance with Rule 19 (19 NMAC 15.A. 19). [3-15-97]
  - Rule 19 (19 NMAC 15.A. 19). [3-15-97].

## 7.0 CONCLUSIONS / RECOMMENDATIONS

**Chloride levels** for the spill area after excavation were determined to be below 250ppm except for one small section (10'x10'), which had levels of 410ppm.

**Total Petroleum Hydrocarbon (TPH)**, levels for the spill area after excavation were determined to be 245ppm at the highest level which is well below NMOCD action levels of 5,000ppm.

**REQUEST TO BACKFILL:** The contaminated soil has been excavated and hauled to Lea Land Disposal facility. Requested action is to backfill excavated area with clean top soil purchased from Lea Land Disposal. Properly restore natural topography and reseed the area with appropriate seed mix. A simple closing report with photos will then be submitted to the NMOCD.

## 8.0 LIMITATIONS

This report was prepared exclusively for use by EnerVest Operating. The contents of the report shall not be disseminated to, or used by any other party without EnerVest Operating written consent.

Baseline Solutions hereby gives notice that any statement or opinion in this report shall not be construed to create any warranty or representation that the real property on which the investigation was conducted is free of pollution or complies with any or all applicable regulatory or statutory requirements, or that the property is fit for any particular purpose.

Unless otherwise indicated in this report, no attempt was made to check on the compliance of present or past owners of the site with federal, state or local laws and regulations.

The conclusions presented in this report were based on the services described, and not on specific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by EnerVest Operating.

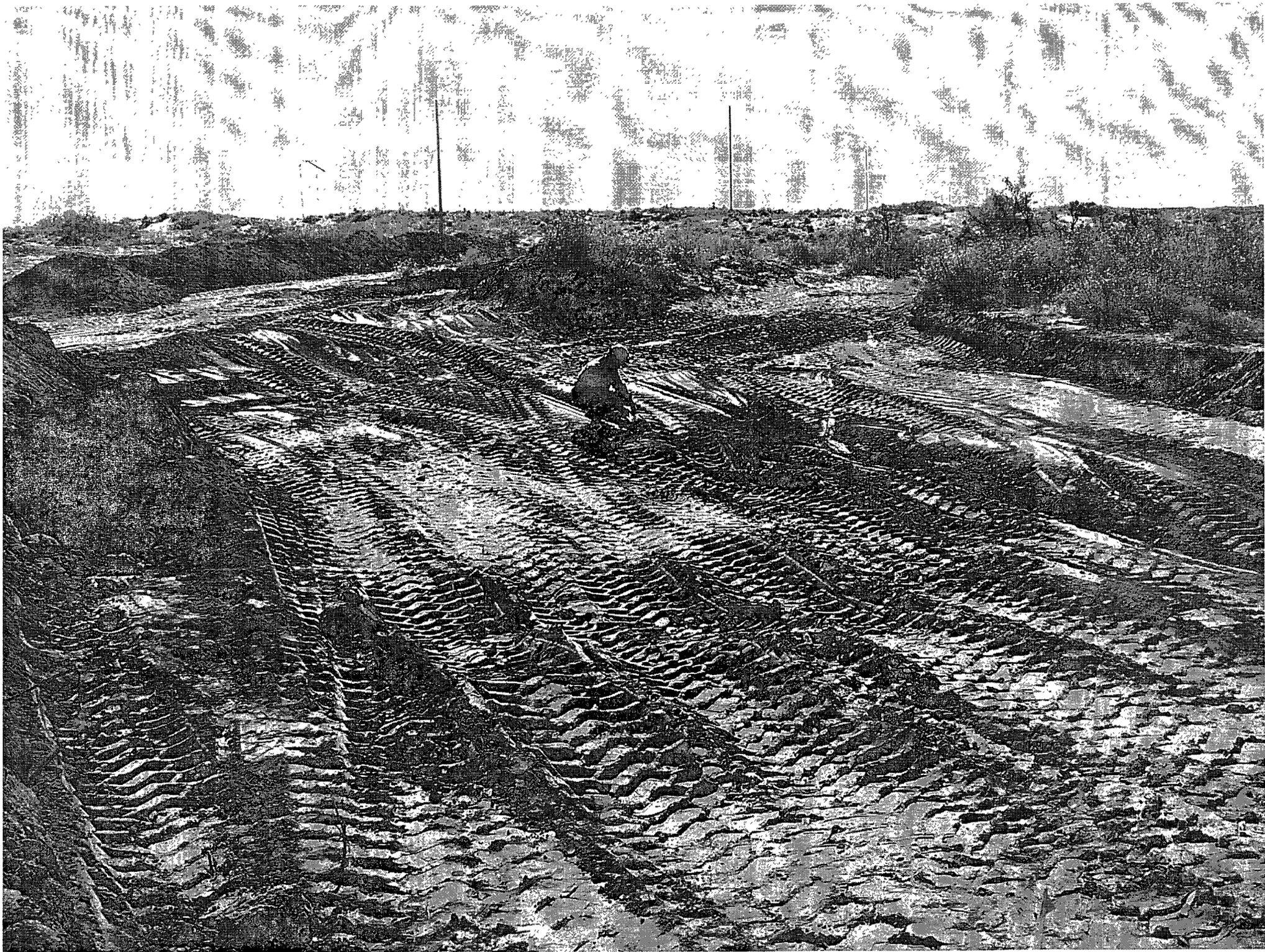
Person or entity considering use, acquisition, or other involvement or activity concerning the property shall be solely responsible for determining the adequacy of the property for any and all uses for which that person or entity shall use the property. Any person or entity considering the use, acquisition, or other involvement or activity concerning the property which is the subject of this report should enter into any use, occupation, acquisition, or the like on sole reliance of its own judgment and on its own personal investigation of such property, and not in reliance on any representation made by Baseline Solutions regarding such property, the character quality, or its value. Baseline Solutions performed environmental services in a professional manner using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. Baseline Solutions shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the environmental services were conducted.

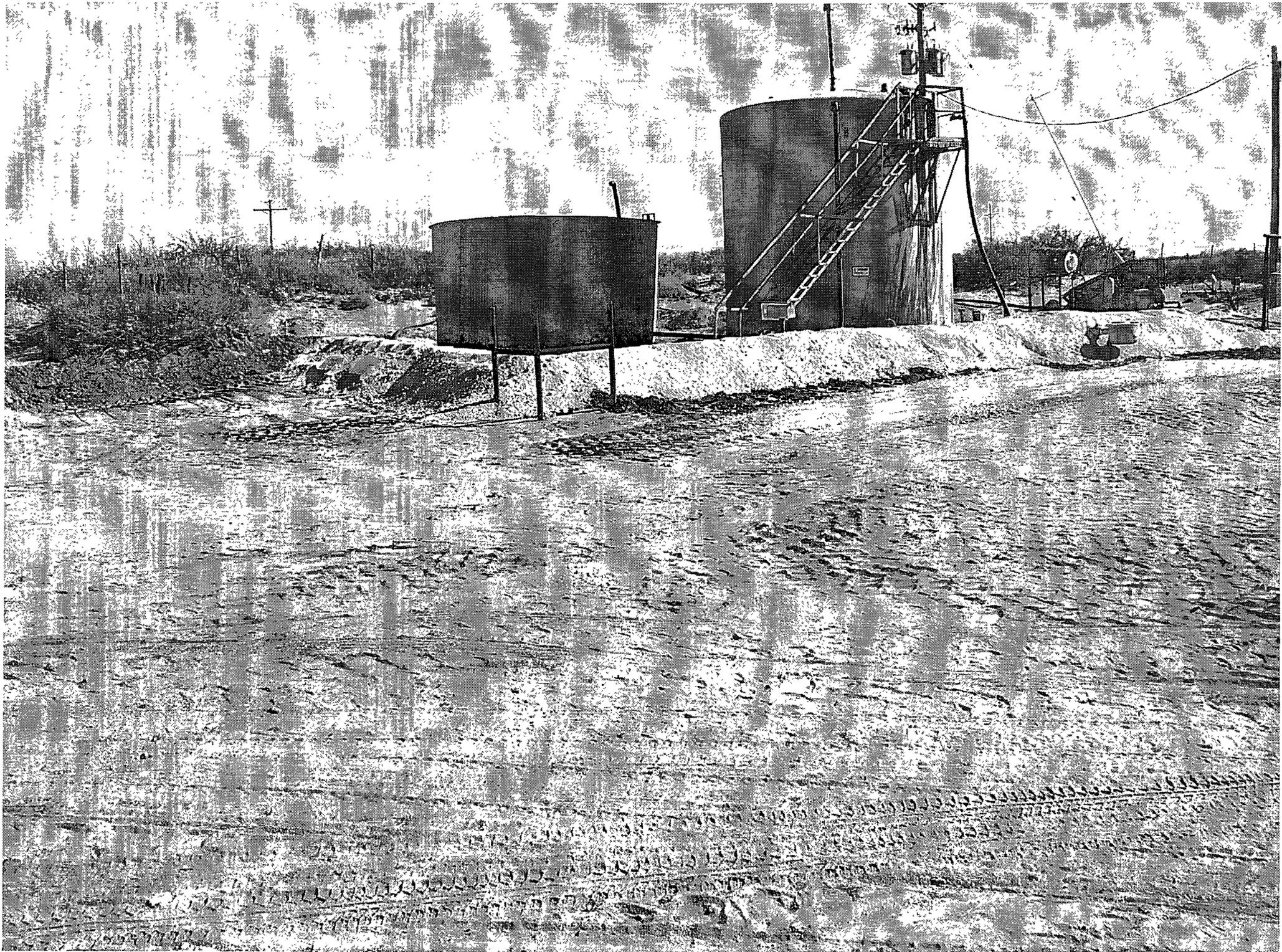
# APPENDICES

- A. Site Photos
- B. Chain of Custody
- C. Lab Report
- D. NMOCD Form 141
- E. Maps











## Summary Report

Andy Price  
 Baseline Solutions LLC  
 511 W. Ohio  
 P.O. Box 8061  
 Midland, TX 79708

Report Date: November 21, 2008

Work Order: 8111501



Project Location: Eddy County, NM  
 Project Name: WLHU Tr. 26 #1  
 Project Number: WLHU Tr. 26 #1

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
179497	1 + 2 Surface	soil	2008-11-14	08:04	2008-11-14
179498	3 + 4 Surface	soil	2008-11-14	08:15	2008-11-14
179499	1-2'	soil	2008-11-14	09:30	2008-11-14
179500	2-3'	soil	2008-11-14	10:30	2008-11-14
179501	3-3'	soil	2008-11-14	10:45	2008-11-14
179502	4-2'	soil	2008-11-14	11:00	2008-11-14

Sample - Field Code	TPH DRO DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
179497 - 1 + 2 Surface	245	1.54
179498 - 3 + 4 Surface	206	2.03
179499 - 1-2'	<50.0	<1.00
179500 - 2-3'	<50.0	1.08
179501 - 3-3'	264	7.03
179502 - 4-2'	<50.0	2.96

**Sample: 179497 - 1 + 2 Surface**

Param	Flag	Result	Units	RL
Chloride		2990	mg/Kg	2.00

**Sample: 179498 - 3 + 4 Surface**

*continued ...*

sample 179498 continued ...

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		3320	mg/Kg	2.00

Sample: 179499 - 1-2'

Param	Flag	Result	Units	RL
Chloride		156	mg/Kg	2.00

Sample: 179500 - 2-3'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

Sample: 179501 - 3-3'

Param	Flag	Result	Units	RL
Chloride		415	mg/Kg	2.00

Sample: 179502 - 4-2'

Param	Flag	Result	Units	RL
Chloride		200	mg/Kg	2.00

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

Form C-141  
Revised October 10, 2003

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

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 1.16 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company - Texas ReExploration Operating I.C	Contact - Dean Brooks
Address - 3025 Maxroy, Houston, TX 77008	Telephone No. 713-622-2425
Facility Name - WLHU Tract 26 #1	Facility Type - Pump Jack
Surface Owner - Turkey Track Ranch	Mineral Owner - <sup>52%</sup>
API No. 30-015-03233	

**LOCATION OF RELEASE**

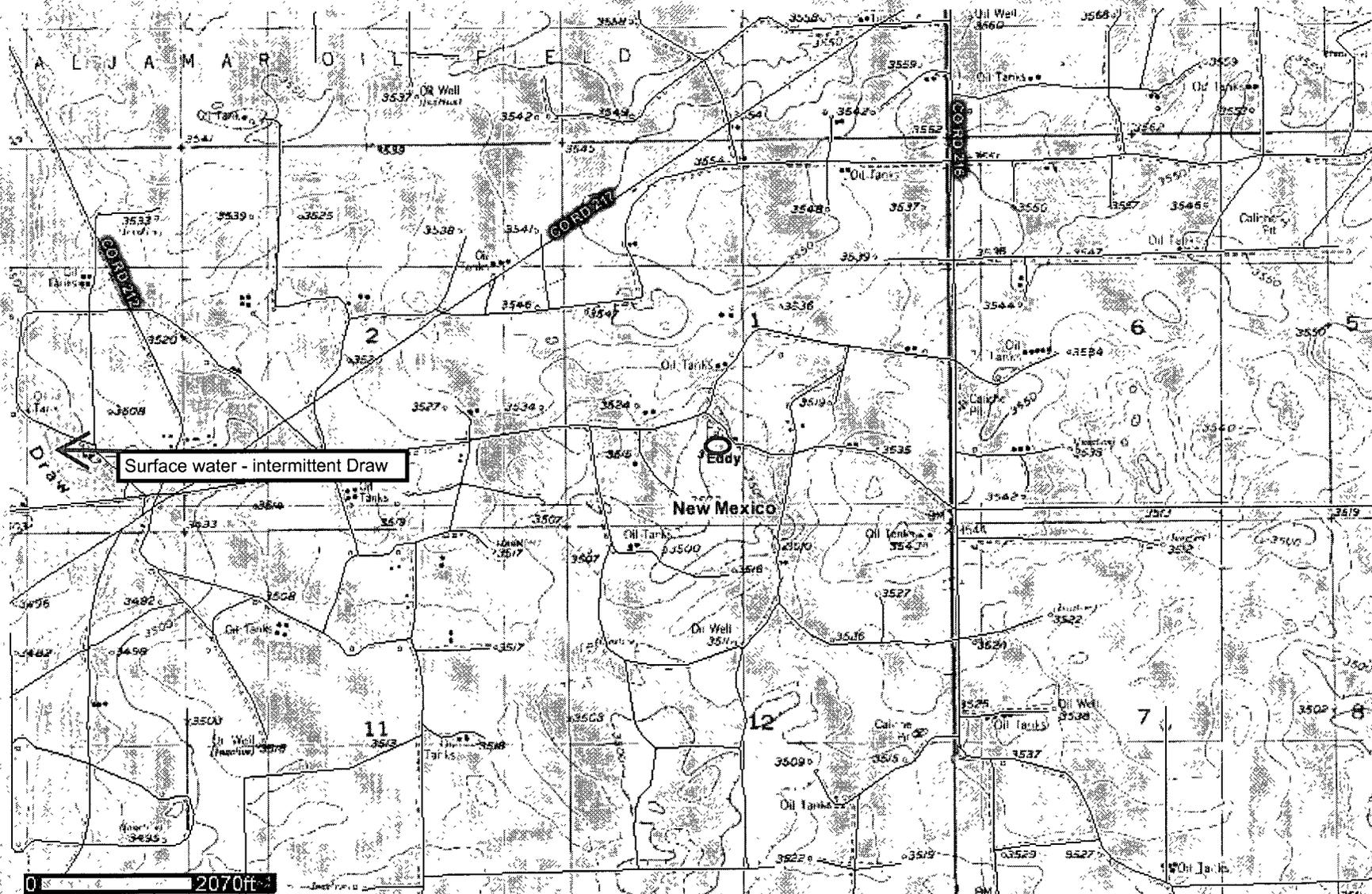
Unit Letter N	Section 1	Township 18S	Range 29E	Feet from the South Line	Feet from the East/West Line	County Eddy
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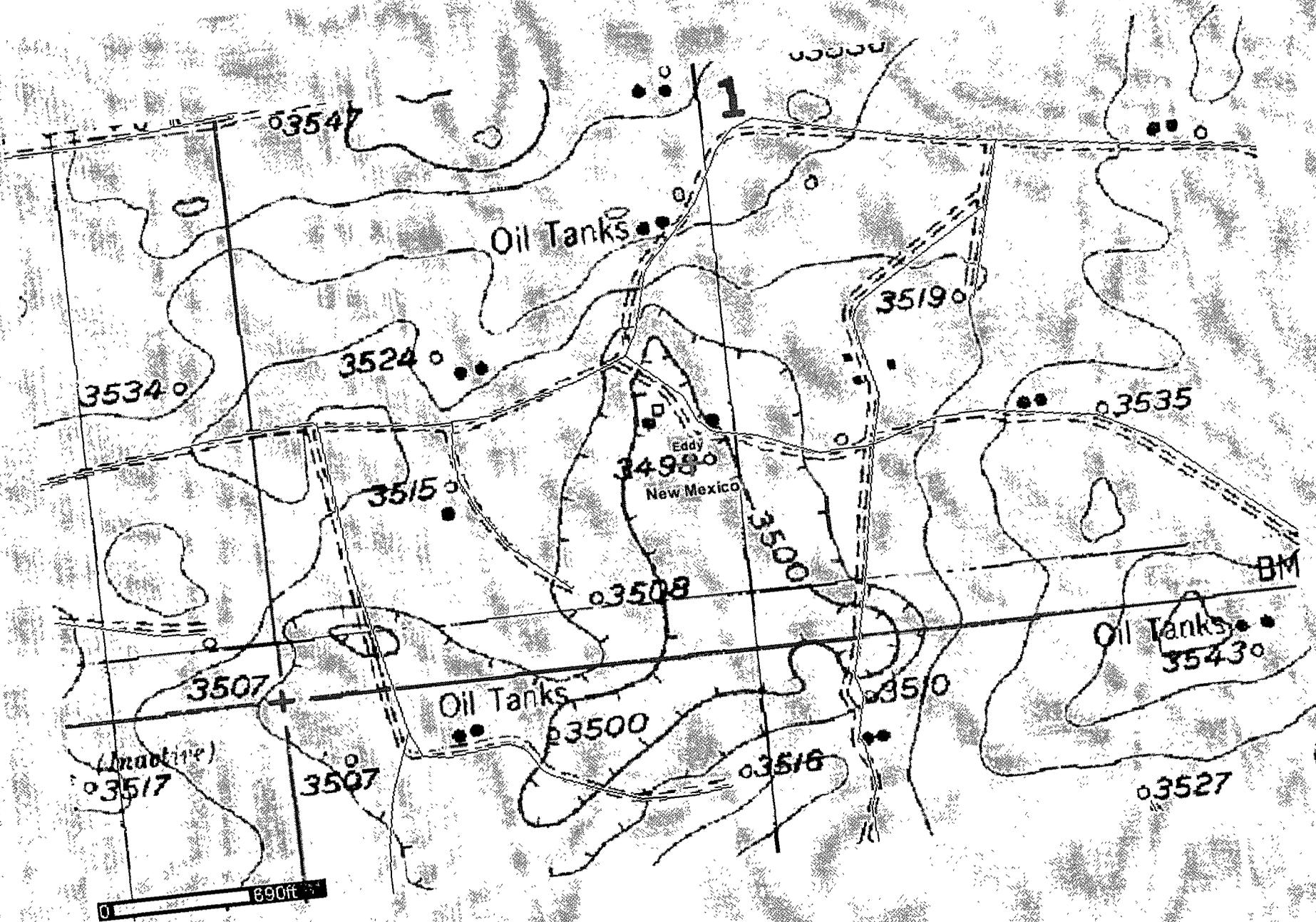
Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

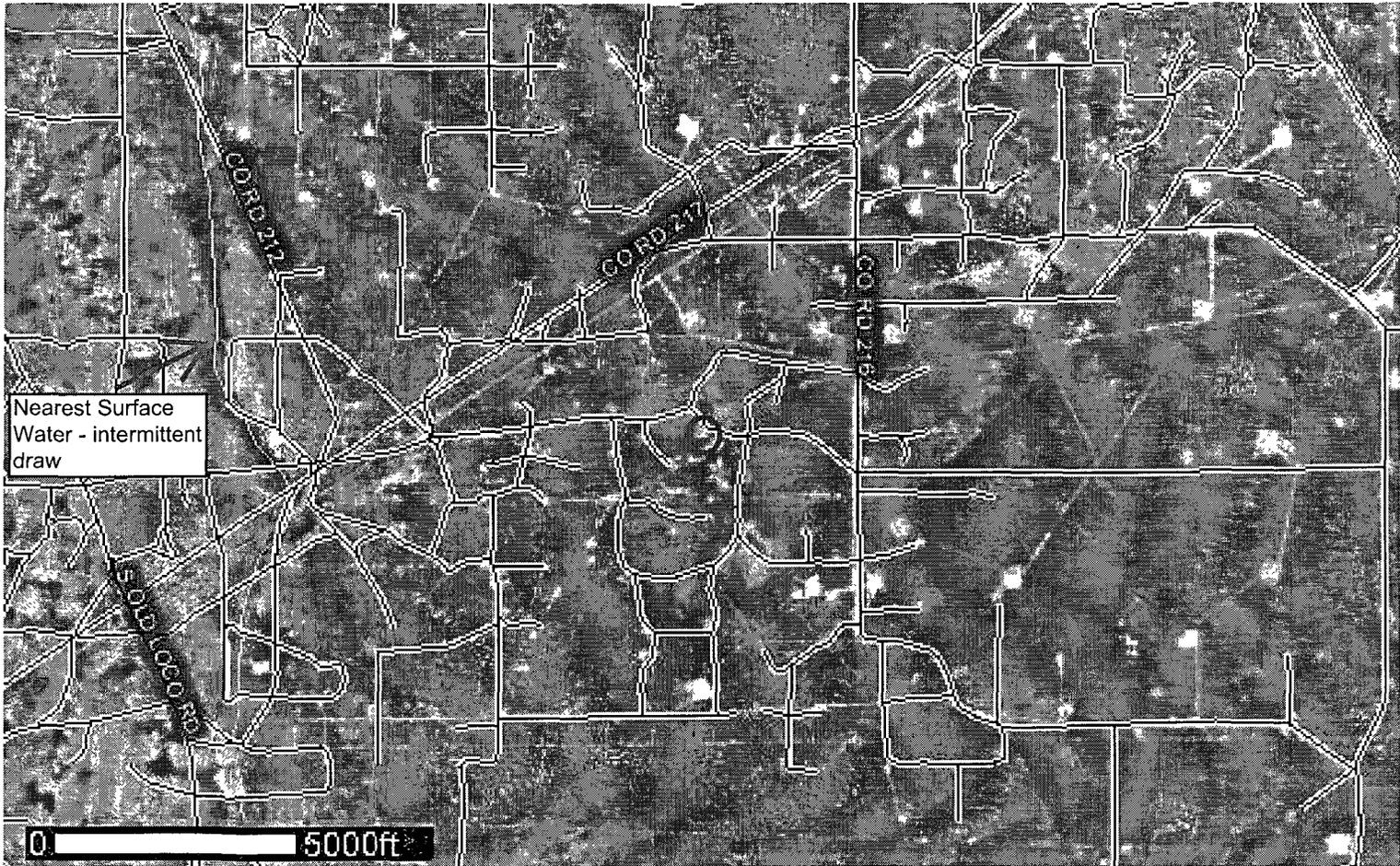
Type of Release - Oil	Volume of Release - estimated 20bbbls	Volume Recovered - 0bbbls
Source of Release - Flow Line	Date and Hour of Occurrence. ?	Date and Hour of Discovery 3/24/08
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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.* The spill at this site is considered to be approximately 20bbbls. The cause of the leak was a flowline failure which was quickly repaired. No remedial action taken yet. The remediation plan is to remove contaminated soil and dispose of at nearest NMOCD approved disposal site. This plan will be implemented upon NMOCD approval. Please see attached photos.		
Describe Area Affected and Cleanup Action Taken.* The approximate area effected is 10yds X 50yds. The originated at spill ran across the lease road area and along side the storage tanks. Any soil with elevated levels of Total Petroleum Hydrocarbons will be removed. The choice of abatement is to remove contaminated soil and dispose of at the nearest NMOCD approved disposal site. in Eddy County.		
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>Dean Brooks</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Dean Brooks	Approved by District Supervisor:	
Title: Vice President of Engineering	Approval Date:	Expiration Date:
E-mail Address: dbrooks@tex-rex.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 4/15/08	Phone: 713-622-2425	

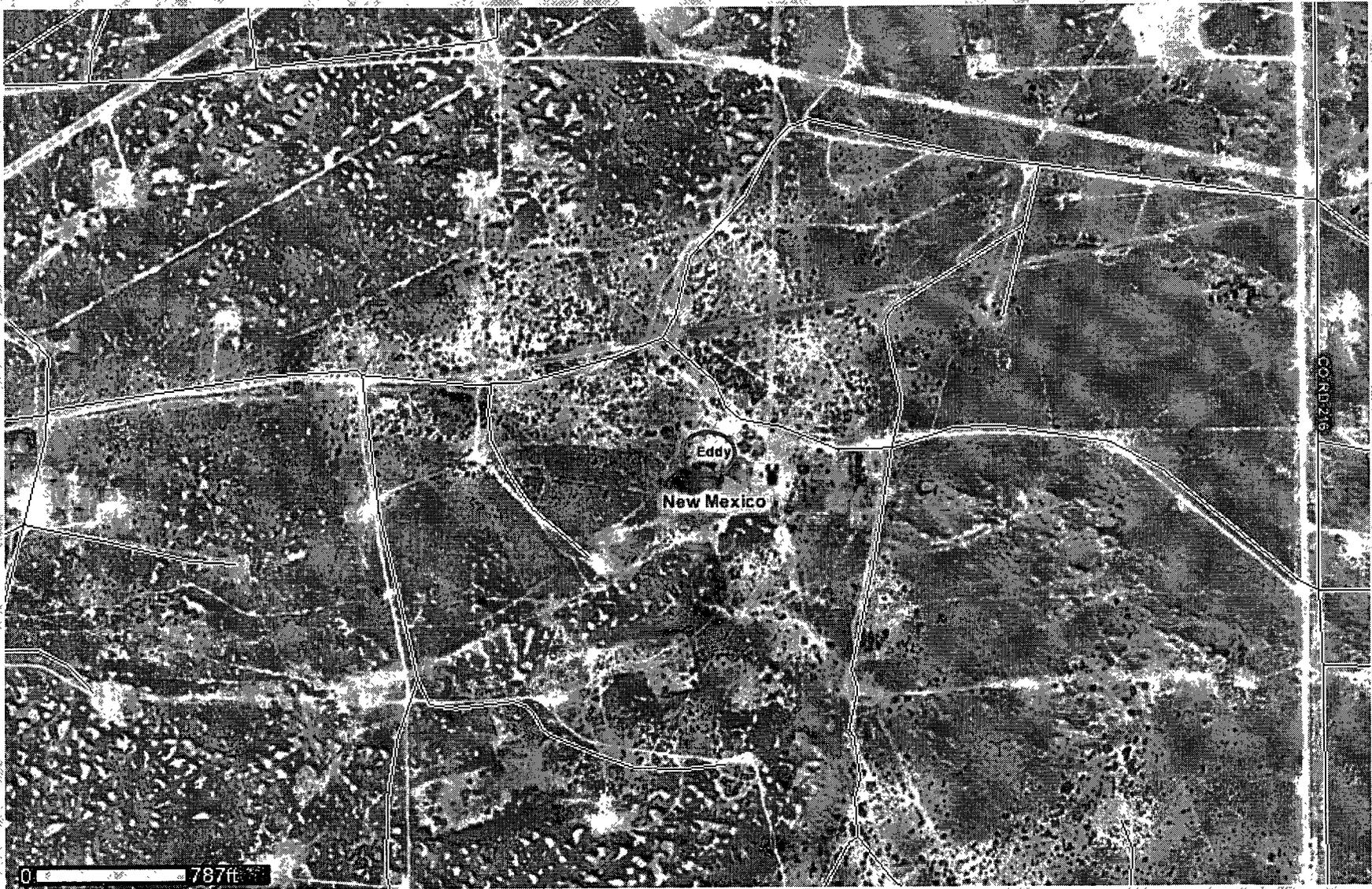
\* Attach Additional Sheets If Necessary

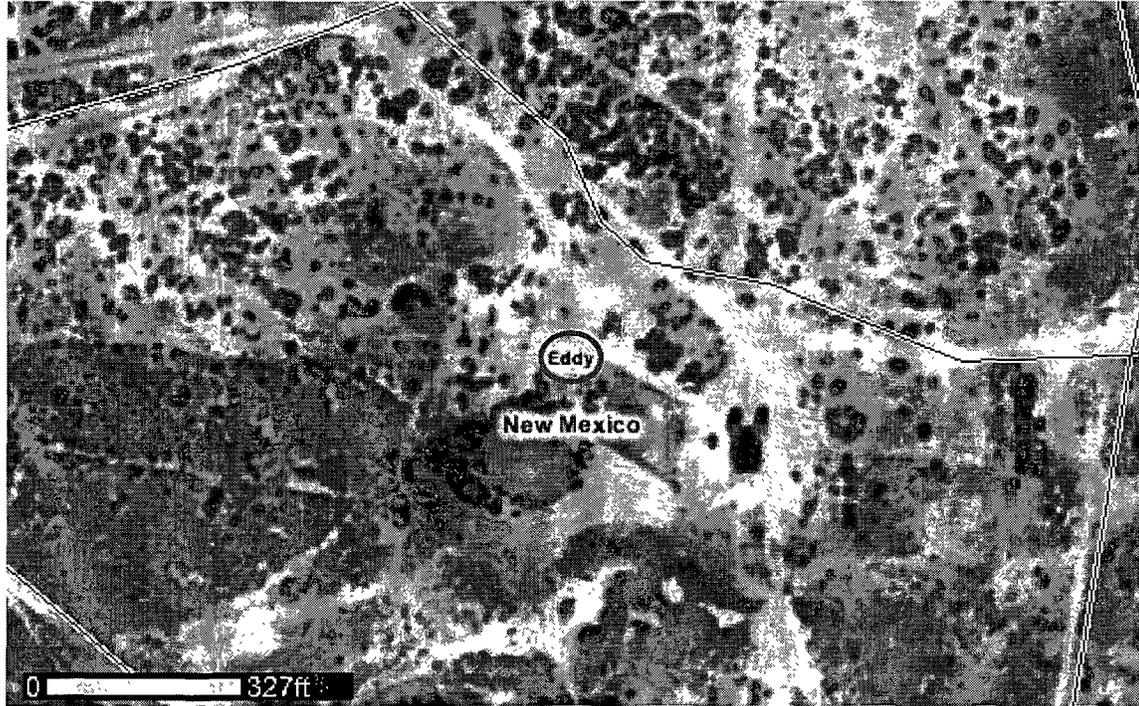




6/24/2008







**Bratcher, Mike, EMNRD**

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**From:** Bratcher, Mike, EMNRD  
**Sent:** Wednesday, January 07, 2009 7:49 AM  
**To:** 'Andy Price'  
**Cc:** Elroy Ardoin; Watne, Douglas E.  
**Subject:** RE: EnerVest Operating - West Loco Hills Unit Tract 26 #1 - saltwater spill Sampling Investigation Report

Andy,

I apologize for the slow response. Based on the analytical data provided, this site is approved for backfill. Please submit a Final Report C-141 upon completion of project.

Thanks,

Mike Bratcher  
NMOCD District 2  
575-748-1283 Ext.108

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**From:** Andy Price [mailto:andyprice@grandecom.net]  
**Sent:** Monday, December 08, 2008 5:31 AM  
**To:** Bratcher, Mike, EMNRD  
**Cc:** Elroy Ardoin; Watne, Douglas E.  
**Subject:** EnerVest Operating - West Loco Hills Unit Tract 26 #1 - saltwater spill Sampling Investigation Report

Mike,

I hope all is well with you. I am attaching a sampling report for EnerVest Operating West Loco Hills Unit Tract 26 #1 - saltwater spill remediation. The current status is that we did excavate and sample at the same time as you and I discussed. The attached report has the lab results for the bottom of the excavation. We had one small area that came in at 415ppm for chlorides - the rest of the spill area was below the action level of 250ppm for Chlorides and TPH levels are well below the 5000ppm. The excavated spill area Has Not been backfilled. I am requesting to back fill upon your review of the attached report. Please call if I can be of any assistance.  
Thank you.

Andy Price  
Baseline Solutions, LLC  
432-352-6400  
511 W. Ohio Street  
Midland, TX 79701

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This inbound email has been scanned by the MessageLabs Email Security System.

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## Bonham, Sherry, EMNRD

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**From:** Bratcher, Mike, EMNRD  
**Sent:** Thursday, May 29, 2008 1:15 PM  
**To:** Andy Price  
**Cc:** Dean Brooks; Bonham, Sherry, EMNRD  
**Subject:** RE: Texas ReExploration Operating - Two minor spill reports - attached c-141

Andy,

The C-141s look OK for submittal. We will require samples to be taken for analyses from the excavated/release areas and approval granted prior to backfilling. In researching the surface ownership at these two sites, it looks like the # 1 well is State and the # 6 well is Federal. The section that the # 1 well is in is a classic example of surface ownership in New Mexico. That section contains State, Federal and Private land. Any excavation/clean-up off site on BLM (Federal) surface will require like approval by them. One thing TREX needs to be aware of is the date of discovery on these releases. The C-141 lists this as 3/24/08. Rule 116 requires a C-141 to be submitted within 15 days of discovery on releases under 25 bbls. Releases over 25 bbls require immediate verbal notification (within 24 hours of discovery) to be followed by the C-141 within 15 days.

*Mike Bratcher*

NMOCD District II  
Office (575)748-1283x108  
Cell (575)626-0857

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**From:** Andy Price [mailto:andyprice@grandecom.net]  
**Sent:** Wednesday, May 28, 2008 1:07 PM  
**To:** Bratcher, Mike, EMNRD  
**Cc:** Dean Brooks  
**Subject:** Texas ReExploration Operating - Two minor spill reports - attached c-141

Mike,

Texas ReExploration Operating ask that I report two minor spills at their West Loco Hills Unit. I am attaching c-141's (with photos) which are drafts for your review. I had some difficulty in identifying the mineral owners for the two locations/wells. I have not been able to pull up well files on the OCD web site in order to confirm if one or both sites are BLM leases. Some of the TREX people were able to find what I needed. The locations are:

WLHU Tract 26 #1 (nearby tank battery) State of NM lease

WLHU Tract 1 #6 (nearby tank battery) Federal Lease

Dean Brooks - TREX Engineer - will sign the c141s upon your acceptance of the information needed. The original will then be delivered to your office.. Please call if I can be of any help in providing you additional information for reporting these two spills.

Thank you for your help in this matter.

Andy Price  
Baseline Solutions, LLC  
432-352-6400  
511 W. Ohio Street  
Midland, TX 79701

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This inbound email has been scanned by the MessageLabs Email Security System.

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