



**Whole Earth Environmental, Inc.**

2103 Arbor Cove  
Katy, Tx. 77494  
281.394.2050  
whearth@msn.com

RP-1419

October 26, 2007

Phoenix Hydrocarbons  
P.O. Box 3638  
Midland, Tx. 79702

Attn: Billy Sneed

Dear Mr. Sneed:

Enclosed, please find a copy of the proposed NM State BB battery remediation plan to be submitted to the NMOCD. We can begin the actual work within two weeks of the NMOCD Hobbs office approval.

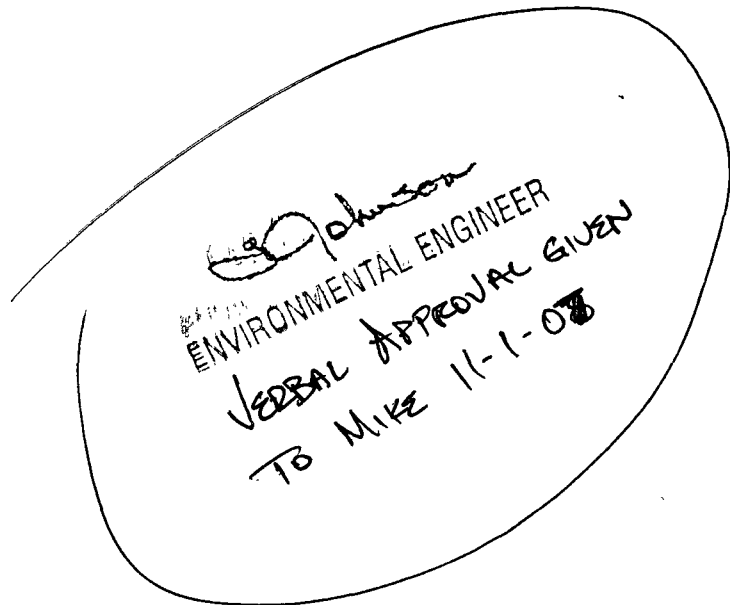
Thank you again for the opportunity of working with you on this very interesting project.

Warmest personal regards,

Mike Griffin  
President  
Whole Earth Environmental, Inc.



*SAME  
COPY REC'D  
11-2-07*





## **Executive Summary**

### **Location**

The site is located approximately thirty-five miles west of the city of Tatum, Lea County, New Mexico on state lands. The primary land use is grazing of cattle however extensive oil and gas operations are prevalent in the area. The area is semi-arid with a net precipitation / evaporation amount of -73" per year. The legal description of the site is Unit J, Sec. 6, T-25S, R-37E.

### **Site History**

A tank overflow was reported by Phoenix on August 13, 2007. Approximately twenty-five barrels of crude oil were spilled and approximately 18 barrels were recovered. Most of the spill was contained within the berms however a portion escaped containment and ran in a generally east - west line along the northern fenceline.

### **Investigation Activities**

Whole Earth Environmental collected four 0-24" composite soil samples along the affected area and had them tested for TPH and Chlorides. The oil is a heavy, almost asphaltic gravity therefore BTEX was not tested within the field screen.

The detailed results of the tests are contained within the Laboratory Analytical section of this report however the summary is that there was no discernable chloride impact however TPH concentrations range from 7,370 - 61,900 ppm.

### **Recommendations and Conclusions**

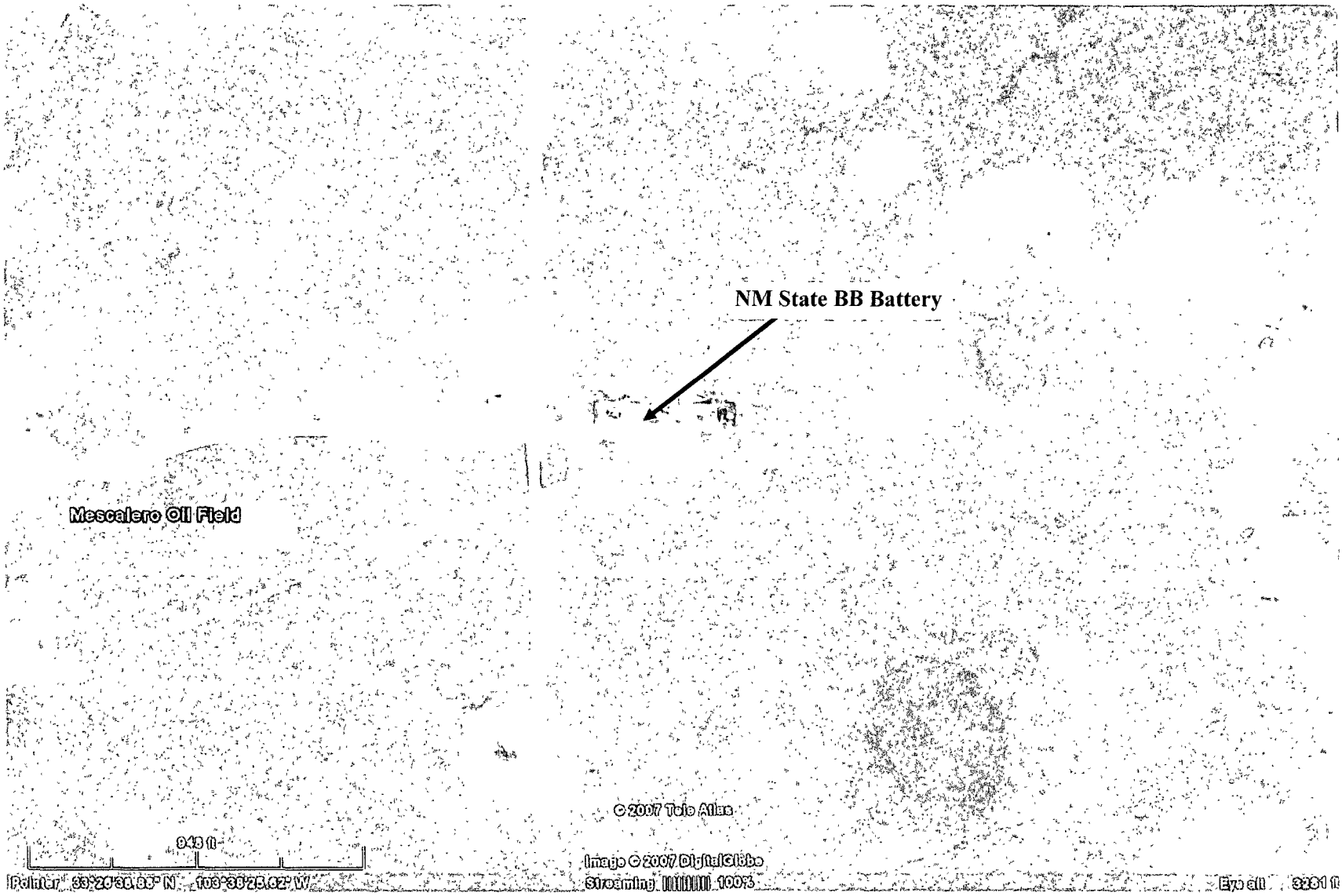
The area within the site perimeter is heavily stained with asphalt and heavily weathered crude. The containment berm surrounding the storage tanks was constructed largely from these asphaltic fractions. Though quite effective in providing containment, they should be replaced with fresh soils. Similarly, all obvious surface stains within the site perimeter will be removed to commercial disposal and the affected areas covered in fresh topsoils.

The spill area outside containment will be excavated to a minimum two foot depth and tested for the presence and concentrations of BTEX, TPH, and chlorides in accordance with PR-86, (enclosed).



## **Exhibit Index**

1. Satellite Photo of Location
2. Site Diagram
3. NMOCD C-141 Date Stamped August 14, 2007
4. NMOCD C-141 Date Stamped ? 27, 2007
5. Letter of Violation Dated August 7, 2007
6. Notice of Violation Dated September 27, 2007
7. October, 2007 View of Stain Area Near North Fence
8. Overview of Location – View to South
9. Overview of Location – View to Southeast



NM State BB Battery

Mescalero Oil Field

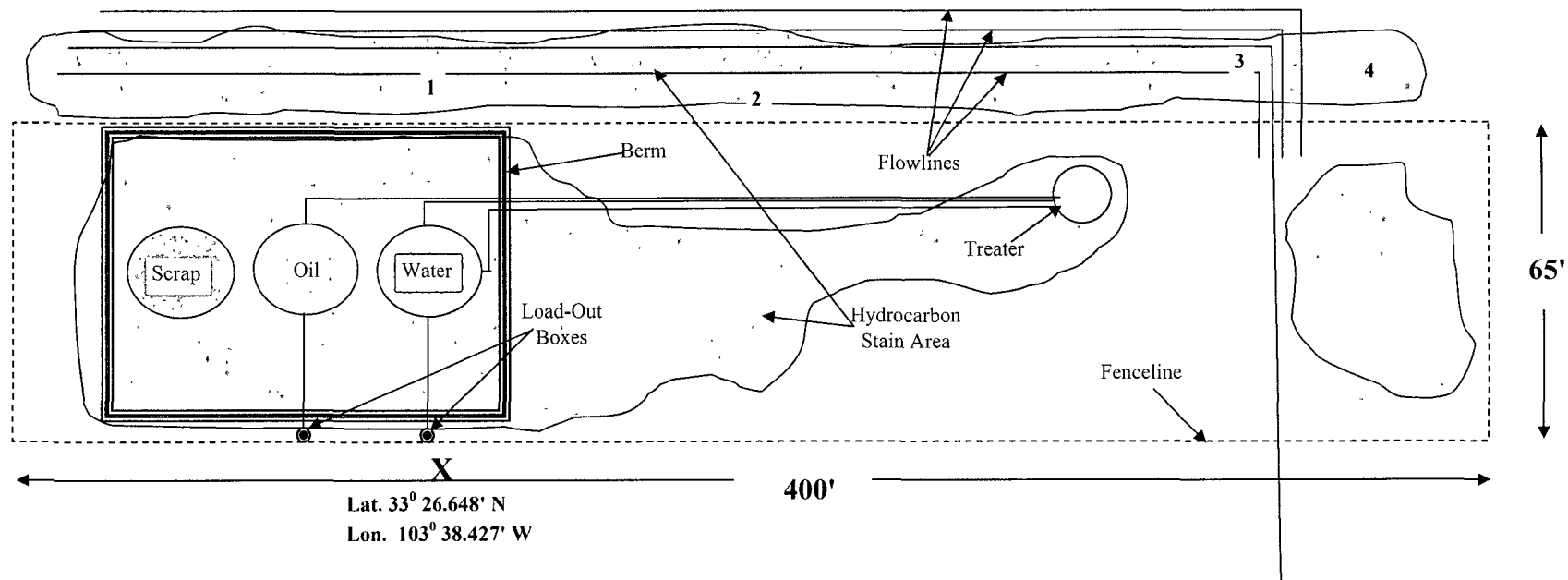
© 2007 Tele Atlas

Image © 2007 DigitalGlobe  
Streaming 100%

Eye alt 3201 ft

0.43 ft  
Point 33°20'00.00" N 108°00'00.00" W

# Phoenix Hydrocarbons NM State BB Tank Battery Site Diagram



Berm Volume = approx. 80 cy.  
 Surface Stains = approx. 40 cy.  
 Outside Fence = approx. 450 cy.  
 Backfill = approx. 500 cy.

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  
20 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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company PHOENIX HYDROCARBONS OPERA	Contact CLARENCE CRAIG	
Address P O BOX 3638	Telephone No. 505-370-0825	
Facility Name NM STATE BB LEASE BATTERY	Facility Type TANK BATTERY	
Surface Owner CARL L JOHNSON	Mineral Owner STATE	Lease No. N/A

LOCATION OF RELEASE

Unit Letter J	Section 14	TOWNSHIP 10-S	Range 32-E	Feet from the	North/South Line	Feet from the	East/West Line	County LEA NEW MEXICO
------------------	---------------	------------------	---------------	---------------	------------------	---------------	----------------	--------------------------

Latitude 33° 26' 65N Longitude 103° 38' 44W

NATURE OF RELEASE

Type of Release CRUDE OIL	Volume of Release 25 BBLS	Volume Recovered 18 BBLS
Source of Release TANK OVERFLOWED	Date and Hour of Occurrence 1 PM	Date and Hour of Discovery 8 3/23/07
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? GARY WINK	
By Whom? PHYLLIS R GUNTER	Date and Hour 12:47 PM 3/23/07	
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.\*

CIRCULATING PUMP MALFUNCTIONED AND FIELED TANK TO OVERFLOWING. 7 BARRELS WERE NOT RECOVERED MOSTLY INSIDE THE BERM. SMALL AREA OUTSIDE THE BERM WILL BE SCRAPED UP AND NEW SOIL BROUGHT IN. AREA INSIDE THE BERM WILL BE REMEDIATED USING PEAT SORB MATERIAL.

Describe Area Affected and Cleanup Action Taken.\*

AFFECTED AREA IS GRASSY (40'X 50') OUTSIDE TANK BATTERY - OIL SPRAY/MIST DUE TO WINDY CONDITIONS WHEN THE TANK OVERFLOWED. THIS AREA WILL BE TREATED WITH SOAPY FRESH WATER.

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>Phyllis R Gunter</i>	OIL CONSERVATION DIVISION	
Printed Name: PHYLLIS R GUNTER	Approved by District Supervisor <i>Environ ENGR</i>	
Title: AGENT	Approval Date: 6.5.07	Expiration Date: 8.5.07
E-mail Address: PRGUNTER@AOL.COM	Conditions of Approval:	
Date: 3/23/07 Phone: 432-686-9869	SUBMIT FINAL C-141 BY <i>1419</i>	

\* Attach Additional Sheets If Necessary

RP# 1419

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

State of New Mexico  
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1220 South St. Francis Dr.  
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Form C-141  
Revised October 10, 2003

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Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company PHOENIX HYDROCARBONS OPER	Contact CLARENCE CRAIG
Address P O BOX 3638, MIDLAND, TX 79701	Telephone No. 505-370-0825
Facility Name NM STATE BB LEASE BATTERY	Facility Type TANK BATTERY

Surface Owner CARL L JOHNSON	Mineral Owner	Lease No. N/A
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STATE OF NM

LOCATION OF RELEASE

Unit Letter J	Section 14	Township 10-S	Range 32-E	Feet from the	North/South Line	Feet from the	East/West Line	County LEA CO, NM
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Latitude 33°26' 65N Longitude 103° 38' 44W

NATURE OF RELEASE

Type of Release CRUDE OIL	Volume of Release 25 BBLS	Volume Recovered 18
Source of Release TANK OVERFLOWED	Date and Hour of Occurrence 1 PM	Date and Hour of Discovery 3/23/07
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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.\*

Describe Area Affected and Cleanup Action Taken\* Spill sited in initial C-141 dated 3/23/07 (attached) and inspection violation letter dated 8/7/07 (attached): Phoenix plan (1) remove & replace oil stained dirt (aerially & vertically) in the area originally affected outside the battery including the area where flow lines enter the battery. (2) remove idle or junk equipment from the tank battery. (3) Phoenix feels this is an adequate plan given the small volume of oil released (7 barrels). Cleanup action to begin upon approval by Oil Conservation Commission.

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>Phyllis R. Gunter</i>	OIL CONSERVATION DIVISION	
Printed Name: Phyllis R. Gunter	DENIED ENVIRONMENTAL ENGINEER	
Title: Agent	Approval Date:	Expiration Date: <i>Sept 21, 2007</i>
E-mail Address: phygun@aol.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 8/13/07 Phone: 432-686-9869		

\* Attach Additional Sheets If Necessary

FINAL REPORT CANNOT BE  
APPROVED UNTIL WORK IS  
COMPLETED & DOCUMENTATION  
IS SUBMITTED.

SOIL TESTING REQUIRED FOR  
CLOSURE. SUBMIT TESTS BY  
THIS WORK SHOULD HAVE BEEN  
COMPLETED BY 8-5-07



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

**Mark E. Fesmire, P.E.**

Director

**Oil Conservation Division**

## *Field Inspection Program*

*"Preserving the Integrity of Our Environment"*

07-Aug-07

### **PHOENIX HYDROCARBONS OPERATING CORP**

PO BOX 3638

MIDLAND TX 79702

### **LETTER OF VIOLATION - Inspection**

Dear Operator:

The following inspection(s) indicate that the well, equipment, location or operational status of the well(s) failed to meet standards of the New Mexico Oil Conservation Division as described in the detail section below. To comply with standards imposed by Rules and Regulations of the Division, corrective action must be taken immediately and the situation brought into compliance. The detail section indicates preliminary findings and/or probable nature of the violation. This determination is based on an inspection of your well or facility by an inspector employed by the Oil Conservation Division on the date(s) indicated.

Please notify the proper district office of the Division, in writing, of the date corrective actions are scheduled to be made so that arrangements can be made to reinspect the well and/or facility.

### **INSPECTION DETAIL SECTION**

**NEW MEXICO BB STATE No.002**

**J-14-10S-32E**

**30-025-21475-00-00**

Inspection Date	Type Inspection	Inspector	Violation?	*Significant Non-Compliance?	Corrective Action Due By:	Inspection No.
08/06/2007	Routine/Periodic	Maxey Brown	Yes	No	9/9/2007	IMGB0721857567
	Violations					
	Tank Battery Equipment (Rules 114, 115)					
	Surface Leaks/Spills					

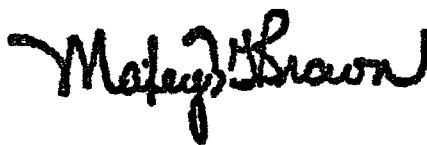
#### **Comments on Inspection:**

**FOLLOWUP ON SPILL OCCURRING IN MARCH 2007. NEED TO REMOVE SOIL CONTAMINATION OUTSIDE OF FENCE USING VERTICAL AND HORIZONTAL DELINIATION TO DETERMINE EXTENT OF EFFECTED AREA. SEND REPORT AND WORK PLAN TO LARRY JOHNSON HOBBS-OCD 505-393-6161 EXT.111 FOR APPROVAL. RULE 116. ALSO NEED TO REMOVE IDLE OR JUNK EQUIPMENT FROM TANK BATTERY. RULE 114, 115. (TANK, SEPERATOR, UNUSED HEATER TREATER). IF TIME EXTENSION IS NEEDED OR ADMINISTRATIVE CONFERENCE CONTACT CHRIS WILLIAMS DISTRICT SUPERVISOR. HOBBS-OCD 393-6161 EXT 102. THIS IS 1ST LETTER OF NON-COMPLIANCE.**



In the event that a satisfactory response is not received to this letter of direction by the "Corrective Action Due By:" date shown above, further enforcement will occur. Such enforcement may include this office applying to the Division for an order summoning you to a hearing before a Division Examiner in Santa Fe to show cause why you should not be ordered to permanently plug and abandon this well. Such a hearing may result in imposition of CIVIL PENALTIES for your violation of OCD rules.

Sincerely,



**COMPLIANCE OFFICER**

Hobbs OCD District Office

Note: Information in Detail Section comes directly from field inspector data entries - not all blanks will contain data  
\*Significant Non-Compliance events are reported directly to the EPA, Region VI, Dallas, Texas.



*Billy Sneed*

# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**  
Governor  
**Joanna Prukop**  
Cabinet Secretary

**Mark E. Fesmire, P.E.**  
Director  
Oil Conservation Division

## NOTICE OF VIOLATION NOV (1-07-07)

September 27, 2007

**Certified Mail**

**Return Receipt #:** 7000 0520 0021 3771 7583

***\*Response Required-Deadline Enclosed\****

Phoenix Hydrocarbon Operating Corp.  
P.O. Box 3638  
Midland, TX 79702

Operator: Phoenix Hydrocarbon Operating Corp. OGRID 188483  
Well: New Mexico BB State Tank Battery, API 30-025-21475  
Violation: Rule 116.D [19.15.3.116 NMAC]  
Surety: Trinity Universal Ins. Co., \$165,000 bond #437294

Dear Operator:

The Oil Conservation Division (OCD) issues this Notice of Violation for the knowing and willful violation of Rule 116.D at the Phoenix Hydrocarbon Operating Corp. (Phoenix) New Mexico BB State Tank Battery well (Tank Battery).

1. On March 26, 2007, the OCD received a complaint regarding a spill at the Tank Battery. Environmental Engineer Larry Johnson inspected the site that day and saw oil and water standing inside the dike, with spray and puddles outside the fence surrounding the Tank Battery. Cattle and wildlife were in the area. Mr. Johnson called Alan Standifer of Phoenix regarding the spill. Phyllis Gunter of Phoenix called back and stated that the spill had been reported on March 23, 2007.
2. On March 27, 2007, the OCD received a Form C-141 release notification from Phoenix regarding the spill, dated March 23, 2007. Phoenix reported that on March 23, 2007 it discovered a release of 25 barrels of crude oil due to a tank overflow. It reported recovering 18 barrels. Phoenix stated that it would scrape up a small area outside the berm and bring in new soil; remediate the area inside the berm using peat sorb material; and treat the area outside the tank battery with soapy fresh water.

3. Environmental Engineer Larry Johnson approved the initial C-141 on June 5, 2007, with the condition that a final C-141 needed to be submitted by August 5, 2007. A copy of the approved initial C-141 is attached. A final C-141 is used to report the completed remediation work.

4. Deputy Inspector Maxey Brown inspected the Tank Battery on June 20, 2007 and August 6, 2007. On both occasions he found that the site had not been remediated. It appeared that contaminated soil had been used to build the dike around the Tank Battery. He also found a deteriorated tank, separator and heater-treater at the site.

5. On August 7, 2007, two days after the final C-141 was due, the OCD issued a letter of violation to Phoenix based on Mr. Brown's inspections, instructing Phoenix to remove the soil contamination outside the fence using vertical and horizontal delineation to determine the extent of the affected area, and to send a report and work plan to Larry Johnson for approval. The letter also instructed Phoenix to remove idle or junk equipment from the tank battery. The letter required corrective action by September 9, 2007, and instructed Phoenix to contact District Supervisor Chris Williams if it needed additional time or desired an administrative conference. A copy of the letter is attached.

6. On August 14, 2007, the OCD received a C-141 from Phoenix, marked "Final Report" and dated August 13, 2007. Although the C-141 was marked "Final Report" it described a cleanup plan and indicated "Cleanup action to began (sic) upon approval by Oil Conservation Commission." The plan addressed only contamination outside the battery, and did not include soil testing.

7. The OCD denied the C-141 "Final Report" stating that a final report could not be approved until work is completed and documentation submitted. The OCD also stated that soil testing was required and that the tests should be submitted by September 24, 2007, noting that all the work should have been completed by August 5, 2007.

8. Rule 116.D provides:

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 Section 19 of 19.15.1 NMAC.

NMSA 1978, §70-2-31(A) authorizes penalties of up to one thousand dollars (\$1,000.00) per day per violation for any knowing and willful violation of any provision of the Oil and Gas Act or any rule adopted pursuant to the Act.

Phoenix Hydrocarbons Operating Corp., OGRID 188483  
New Mexico BB State Tank Battery  
NOV (1-07-07)  
Sept. 27, 2007  
Page 3 of 4

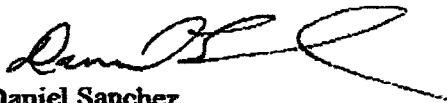
Phoenix' failure to remediate the March 23, 2007 release at the Tank Battery after more than five months, despite repeated instructions from the OCD to do so, constitutes a knowing and willful violation of Rule 116.D.

The OCD believes at this time a civil penalty and a definite commitment to future corrective action are essential.

**Please contact me within ten (10) days at (505) 476-3493, to schedule an administrative conference to discuss this matter.** OCD legal counsel may be present by telephone for this conference, and you may bring legal counsel if you wish. The purpose of the administrative conference is to discuss the facts surrounding this notice of violation, and to determine if the matter can be resolved administratively through an agreed compliance order. If this matter cannot be resolved administratively, the OCD may take further enforcement action, which may include an enforcement hearing before an OCD hearing examiner seeking an order requiring corrective action and assessing a penalty. The OCD may also seek an order under NMSA 1978, Section 70-2-14(B), which provides:

If any of the requirements of the Oil and Gas Act or the rules promulgated pursuant to that act have not been complied with, the oil conservation division, after notice and hearing, may order any well plugged and abandoned by the operator or surety or both in accordance with division rules. If the order is not complied with in the time period set out in the order, the financial assurance shall be forfeited.

Sincerely yours,

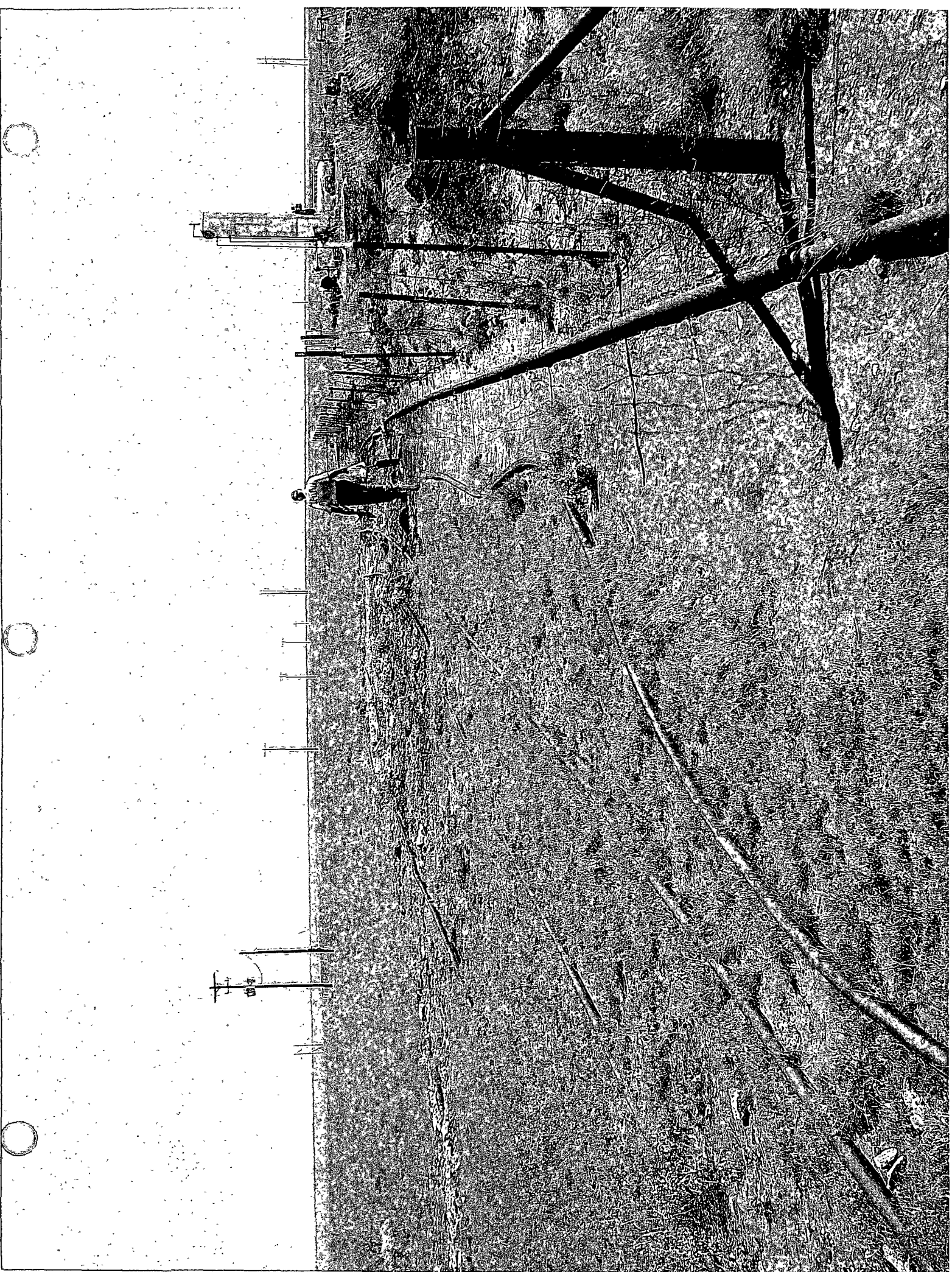


Daniel Sanchez,  
OCD Enforcement and Compliance Manager

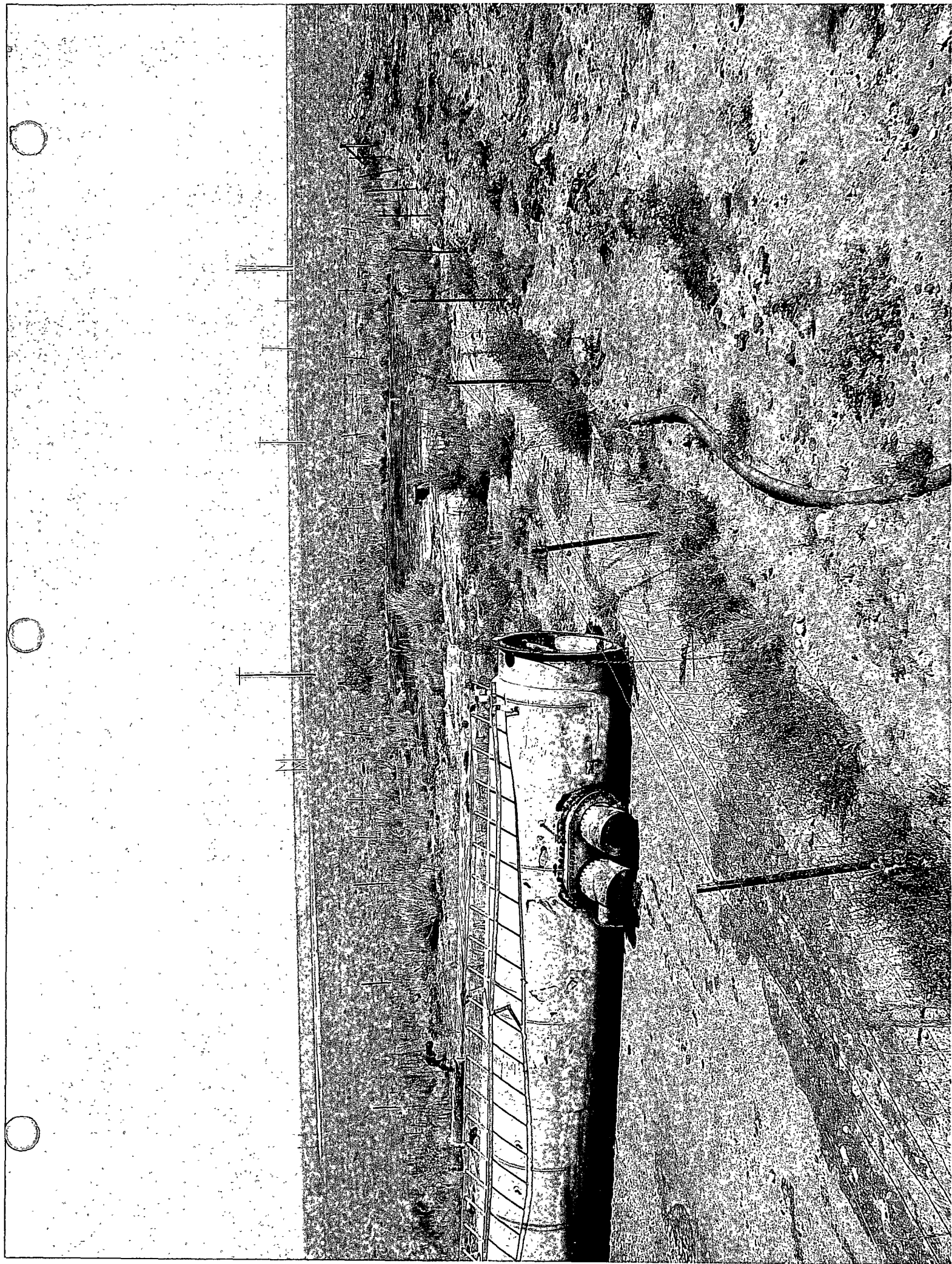
Encl: Approved initial C-141  
Letter of violation dated 8-7-07  
Denied "Final Report" C-141

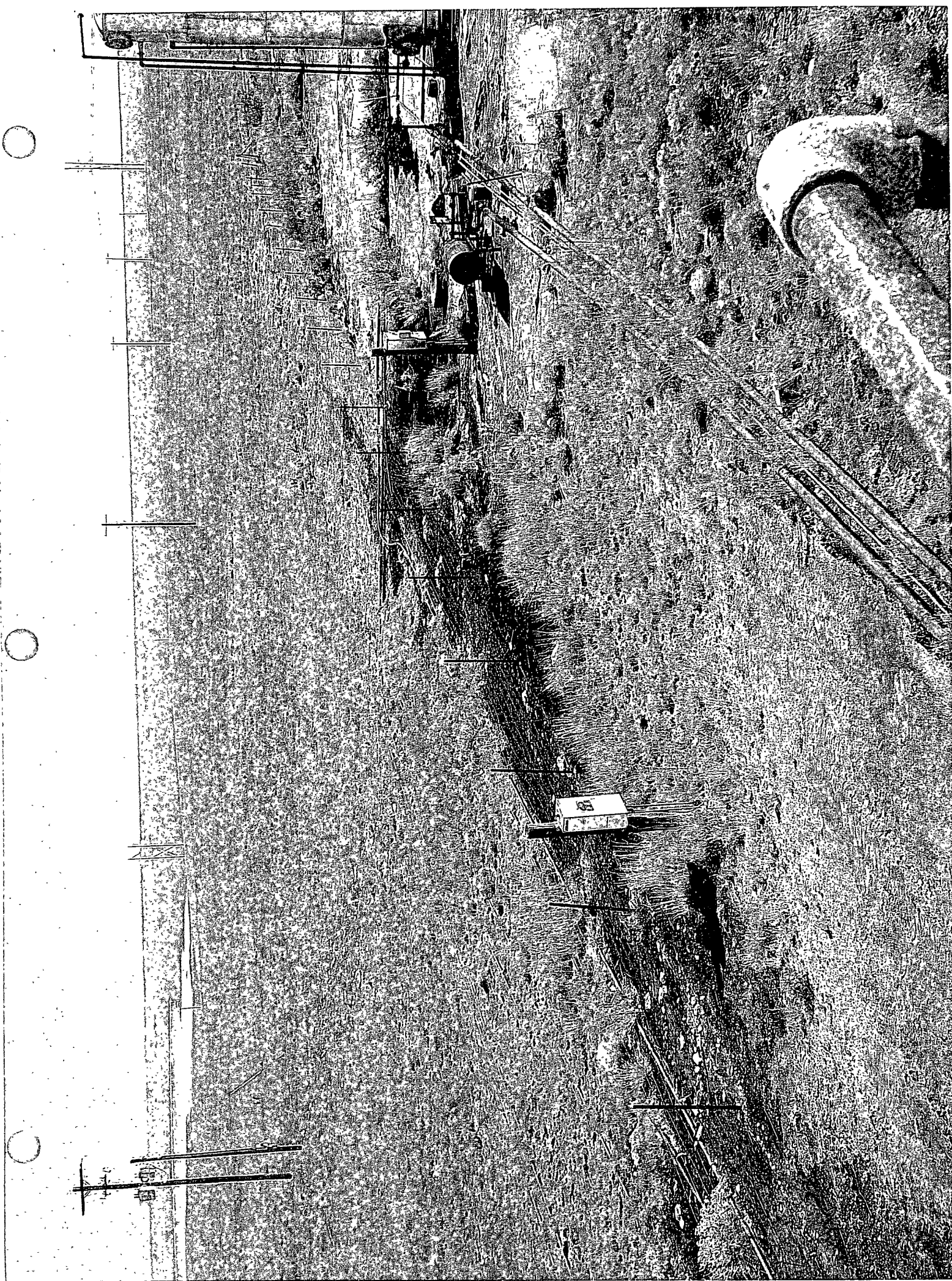
Cc: Trinity Universal Ins. Co.  
Attn: Bond Dept.  
P.O. Box 655028  
Dallas, TX 75265

Ec: Chris Williams, District I  
Maxey Brown, District I  
Larry Johnson, District I  
Gail MacQuesten, OCD Attorney











## **Protocol**

This section contains a copy of PR-86, the site remediation protocol to be employed on this project.





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**Spill Remediation Protocol  
Phoenix Hydrocarbons  
NM State BB Remediation Project**

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**1.0 Purpose**

This protocol is to provide a detailed outline of the steps to be employed in the remediation of a hydrocarbon spill location located near Caprock, New Mexico.

**2.0 Scope**

This protocol is site specific for the NM State BB Remediation Project.

**3.0 Preliminary**

Prior to any field operations, Whole Earth Environmental shall conduct the following activities:

**3.1 Client Review**

3.1.1 Whole Earth shall meet with appointed personnel within Phoenix to review this protocol and make any requested modifications or alterations.

3.1.2 Changes to this protocol will be documented and submitted for final review by Phoenix prior to the initiation of actual fieldwork.

3.1.3 Upon client approval, the protocol will be submitted to the NMOCD for review and approval.

**4.0 Safety**

4.1 Prior to work on the site, Whole Earth shall obtain the location and phone numbers of the nearest emergency medical treatment facility. We will review all safety related issues with the appropriate Phoenix personnel, sub-contractors and exchange phone numbers.

4.2 A tailgate safety meeting shall be held and documented each day. All sub-contractors must attend and sign the daily log-in sheet.

4.3 Anyone allowed on to location must be wearing sleeved shirts, steel toed boots, and long pants. Each vehicle must be equipped with two way communication capabilities.

- 4.4 Prior to any excavation, the area shall be surveyed with a line finder. If lines are discovered within the area to be excavated they shall be marked with pin flags on either side of the line at maximum five foot intervals.

## **5.0 Site Preparation**

- 5.1 The southern fence of the battery will be partially dismantled and placed aside for future re-installation. Once a clear area is prepared, a backhoe will remove any surface hydrocarbons found within the perimeter of the location. The excavated soils will be sent to commercial disposal. Fresh topsoil will be backhauled to the location on a one-to-one basis. It is presently considered that the majority of the soils within the containment berm will be replaced. Tare will be taken to insure that temporary containment exists at all times.
- 5.2 Once the inside surface of the battery is cleared of free asphaltic material, Phoenix will re-route the lines situated to the north of the battery to new locations within the existing site perimeter.
- 5.3 The surplus tank and separator will be removed by a third party within sixty days of the submittal of this protocol.

## **6.0 Remediation Procedure**

- 6.1 Once the area of interest has been cleared of all active lines, the contaminated soils will be excavated to a minimum depth of 2' below ground surface. The soils will be field tested for TPH, chlorides and VOC's. Any soils containing concentrations >100 ppm TPH, 250 ppm chlorides or 20 ppm VOC's will either be sent to commercial disposal or mixed and blended with native soils until the individual concentrations fall within acceptance ranges.
- 6.2 Any materials sent to commercial disposal will be replaced with fresh topsoil.
- 6.3 Soil samples from the side-walls and bottom of the excavation and mixed materials used within the backfill will be collected in accordance with WEQP- 77. The samples will be forwarded to a third party laboratory for the analysis of TPH, BTEX and chlorides.

**7.0 Closure Report**

**7.1** At the conclusion of the project, Whole Earth shall prepare a closure report which contains the following minimum information:

- Photographs of the location prior to remediation
- Photographs of the excavation at maximum size
- Photographs of the location at time of final closure
- All pre-closure contaminant concentrations
- Contaminant concentrations at the conclusion of the project
- Copies of this protocol and all testing procedures
- Independent split sample laboratory analyses
- Manifests of all materials sent to commercial disposal



## **Procedures**

This section contains a copy of QP-77, the sample collection and transportation procedure; QP-06 the field TPH analysis procedure and QP-96, the field chloride analysis procedure that will be employed on this project.



QP-06 Rev. C

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## WHOLE EARTH ENVIRONMENTAL QUALITY PROCEDURE

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### Procedure for Conducting Field TPH Analysis

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Completed By:

Approved By:

Effective Date: 02/15/97

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#### 1.0 Purpose

To define the procedure to be used in conducting total percentage hydrocarbon testing in accordance with EPA Method 418.1 (modified) using the "MEGA" TPH Analyzer.

#### 2.0 Scope

This procedure is to be used for field testing and on site remediation information.

#### 3.0 Procedure

3.1 The G.A.C. "MEGA" TPH analyzer is an instrument that measures concentrations of aliphatic hydrocarbons by means of infra-red spectrometry. It is manufactured to our specifications and can accurately measure concentrations from two parts per million through 100,000 parts per million. The unit is factory calibrated however minor calibration adjustments may be made in the field. Quality Procedure 25 defines the field calibration methods to be employed.

3.2 Prior to taking the machine into the field, insert a 500 ppm and 5,000 ppm calibration standard into the sample port of the machine. Zero out the Range dial until the instrument records the exact standard reading.

3.3 Once in the field, insert a large and small cuvette filled with clean Freon 113 into the sample port of the machine. Use the range dial to zero in the reading. If the machine does not zero, do not attempt to adjust the span dial. Immediately implement Quality Procedure 25 .

3.4 Place a 100 g. weight standard on the field scale to insure accuracy. Zero out the scale as necessary.

3.5 Tare a clean 100 ml. sample vial with the Teflon cap removed. Add 10 g. (+/- .01 g), of sample soil into the vial taking care to remove rocks or vegetable matter from the sample to be tested. If the sample is wet, add up to 5 g. silica gel or anhydrous sodium sulfate to the sample after weighing.

3.6 Dispense 10 ml. Freon 113 into the sample vial.

3.7 Cap the vial and shake for five minutes.

3.8 Carefully decant the liquid contents of the vial into a filter/desiccant cartridge and affix the cartridge cap. Recap the sample vial and set aside.

3.9 Insert the metal tip of the pressure syringe into the cap opening and slowly pressurize. **WARNING: APPLY ONLY ENOUGH PRESSURE ON THE SYRINGE TO EFFECT FLOW THROUGH THE FILTERS. TOO MUCH PRESSURE MAY CAUSE THE CAP TO SEPARATE FROM THE BODY OF THE CARTRIDGE.** Once flow is established through the cartridge direct the flow into the 5 cm. cuvette until the cuvette is full. Reverse the pressure on the syringe and remove the syringe tip from the cartridge cap. Set the cartridge aside in vertical position.

3.10 The cuvette has two clear and two frosted sides. Hold the cuvette by the frosted sides and carefully insert into the sample port of the machine. Read the right hand digital read-out of the instrument. If the reading is less than 1,000 ppm. the results shall be recorded in the field Soil Analysis Report. If the result is higher than 1,000 ppm, continue with the dilution procedure.

#### 4.0 Dilution Procedure

4.1 When initial readings are greater than 1,000 ppm using the 5 cm. cuvette, pour the contents of the 5 cm. cuvette into a 1 cm. cuvette. Insert the 1. cm cuvette into the metal holder and insert into the test port of the instrument.

4.1 Read the left hand digital read-out of the machine. If the results are less than 10,000 ppm, record the results into the field Soil Analysis Report. If greater than 10,000 ppm, continue the dilution process. **Concentrations >10,000 ppm are to be used for field screen purposes only.**

4.2 Pour the contents of the small cuvette into a graduated glass pipette. Add 10 ml. pure Freon 113 into the pipette. Shake the contents and pour into the 1cm. cuvette. Repeat step 4.2. adding two zeros to the end of the displayed number. If the reported result is greater than 100,000 ppm. the accuracy of further readings through additional dilutions is extremely questionable. **Do not use for reporting purposes.**

4.4 Pour all sample Freon into the recycling container.

## **5.0 Split Samples**

5.1 Each tenth test sample shall be a split sample. Decant approximately one half of the extraction solvent through a filter cartridge and insert into the instrument to obtain a concentration reading. Clean and rinse the cuvette and decant the remainder of the fluid to obtain a second concentration reading from the same sample. **If the second reading varies by more than 1% from the original, it will be necessary to completely recalibrate the instrument.**



QP-77

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**WHOLE EARTH ENVIRONMENTAL  
QUALITY PROCEDURE**

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**Procedure for Obtaining  
Soil Samples for Transportation to a Laboratory**

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Completed By:                      Approved By:                      Effective Date:    /    /

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**1.0 Purpose**

This procedure outlines the methods to be employed when obtaining soil samples to be taken to a laboratory for analysis.

**2.0 Scope**

This procedure is to be used when collecting soil samples intended for ultimate transfer to a testing laboratory.

**3.0 Preliminary**

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the soil. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 If collecting TPH, BTEX, RCRA 8 metals, cation / anions or O&G, the sample jar may be a clear 4 oz. container with Teflon lid. If collecting PAH's, use an amber 4 oz. container with Teflon lid.

**4.0 Chain of Custody**

4.1 Prepare a Sample Plan. The plan will list the number, location and designation of each planned sample and the individual tests to be performed on the sample. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.



- 4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

## **5.0 Sampling Procedure**

- 5.1 Go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to obtain the soil. Do not touch the soil with your bare hands. Use new latex gloves with each sample to help minimize any cross-contamination. Try to avoid collecting rocks or vegetation.
- 5.2 Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label.
- 5.3 Place the sample directly on ice for transport to the laboratory.
- 5.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

## **6.0 Documentation**

- 6.1 The testing laboratory shall provide the following minimum information:
  - A. Client, Project and sample name.
  - B. Signed copy of the original Chain of Custody Form including data on the time the sample was received by the lab.
  - C. Results of the requested analyses
  - D. Test Methods employed
  - E. Quality Control methods and results



QP-96

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**WHOLE EARTH ENVIRONMENTAL  
QUALITY PROCEDURE**

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**Sampling and Testing Protocol  
Chloride Titration Using .1 Normal  
Silver Nitrate Solution**

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Completed By:                      Approved By:                      Effective Date:    /    /

---

**1.0 Purpose**

This procedure is to be used to determine the concentrations of chlorides in soils.

**2.0 Scope**

This procedure is to be used as the standard field measurement for soil chloride concentrations.

**3.0 Sample Collection and Preparation**

3.1 Collect at least 80 g. of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample of soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).

3.2 The soil sample(s) shall be immediately inserted into a one quart or larger polyethylene freezer bag. Care should be taken to insure that no cross-contamination occur between the soil sample and the collection tools or sample processing equipment.

3.3 The sealed sample bag should be massaged to break up any clods.

**4.0 Sample Preparation**

- 4.1 Tare a plastic cup having a minimum six-ounce capacity. Add between 80-120 grams of the soil sample and record the weight.
- 4.2 Add the same weight of distilled water to the soil sample and stir thoroughly using a glass or plastic stir stick.
- 4.3 Allow the sample to set for a period of thirty minutes. The sample should be stirred at least three times before fluid extraction.
- 4.4 Carefully pour off the free liquid from the sample through a paper filter into a clean plastic cup.

**5.0 Titration Procedure**

- 5.1 Using a graduated pipette, remove 10 ml extract and dispense into a clean plastic cup.
- 5.2 Add 2-3 drops 5% potassium chromate ( $K_2CrO_4$ ) to mixture.
- 5.3 If the sample contains any sulfides (hydrogen or iron sulfides are common to oilfield soil samples) add 2-3 drops of hydrogen peroxide ( $H_2O_2$ ) to mixture. Allow the mixture to set for a minimum of five minutes.
- 5.4 Using a 1 ml pipette, carefully add .1 normal silver nitrate solution to sample until solution turns salmon red when viewed with yellow goggles. Be consistent with endpoint recognition.

**6.0 Calculation**

Multiply the amount of silver nitrate used in step 5.4 by 354.5 to obtain the chloride concentration in mg/L.



## **Laboratory Analytical Results**

This section contains a copy the chain of custody, laboratory analytical results and quality control information for soil samples processed during this project.



# ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

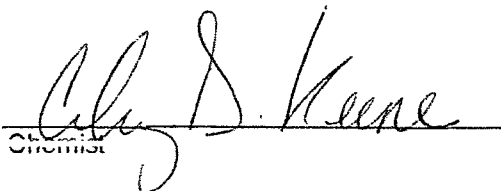
ANALYTICAL RESULTS FOR  
WHOLE EARTH ENVIRONMENTAL  
ATTN: ELLIOT WERNER  
2103 ARBOR COVE  
KATY, TX 77494  
Fax: (281) 394-2051

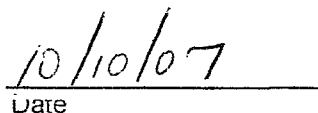
Receiving Date: 10/03/07  
Reporting Date: 10/10/07  
Project Owner: PHOENIX  
Project Name: NM STATE BB  
Project Location: CAPROCK

Sampling Date: 10/03/07  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: KS  
Analyzed By: CK/HM

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>12</sub> ) (mg/Kg)	DRO (>C <sub>12</sub> -C <sub>28</sub> ) (mg/Kg)	Cl* (mg/Kg)
		10/09/07	10/09/07	10/05/07
H13436-1	1	<400	19400	<16
H13436-2	2	<400	21300	96
H13436-3	3	<400	61900	48
H13436-4	4	<100	7370	112
Quality Control		414	565	500
True Value QC		500	500	500
% Recovery		82.8	113	100
Relative Percent Difference		6.3	9.6	<0.1

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Std. Methods 4300-CLE  
Analyses performed on 1:4 w:v aqueous extracts

  
Cheryl S. Keene  
Chemist

  
10/10/07  
Date



# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Whole Earth Env</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>											
Project Manager: <u>E. Warner</u>				P.O. #:				<div style="writing-mode: vertical-rl; transform: rotate(180deg);">           TPH - DRG GRO chloride         </div>											
Address: <u>2103 Arbor Cove</u>				Company: <u>Whole Earth</u>															
City: <u>Katy</u> State: <u>TX</u> Zip: <u>77494</u>				Attn: <u>Mike Griffin</u>															
Phone #: <u>(281) 394-2050</u> Fax #: <u>(281) 394-2051</u>				Address: <u>Same</u>															
Project #: <u>N.M. State BIP</u> Project Owner: <u>Phoenix</u>				City:															
Project Name:				State: Zip:															
Project Location: <u>Caperock</u>				Phone #:															
Sampler Name: <u>Ellettsen</u>				Fax #:															
FOR LAB USE ONLY																			
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.		SAMPLING		DATE	TIME		
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:					
H13436		1																	
-2		2																	
-3		3																	
-4		4																	

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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <u>[Signature]</u>		Date: <u>10/3/07</u>	Received By: <u>[Signature]</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Time: <u>2:45</u>				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:		Date:	Received By:	REMARKS:	
Time:					
Delivered By: (Circle One)			Sample Condition	CHECKED BY:	
Sampler - UPS - Bus - Other:			Cool Intact	(Initials)	
			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>KS</u>	
			<input type="checkbox"/> Yes <input type="checkbox"/> No		

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

# Approval Request to Remediate RP #1419

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

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report ☐ Final Report

Name of Company	PHOENIX HYDROCARBONS OPER	Contact	CLARENCE CRAIG
Address	P O BOX 3638, MIDLAND, TX 79701	Telephone No.	505-370-0825
Facility Name	NM STATE BB LEASE BATTERY	Facility Type	TANK BATTERY
Surface Owner	State of New Mexico	Mineral Owner	
		Lease No.	N/A

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	14	10-S	32-E					LEA CO, NM

Latitude 33°26' 65N Longitude 103° 38' 44W

### NATURE OF RELEASE

Type of Release	CRUDE OIL	Volume of Release	25 BBLS	Volume Recovered	18
Source of Release	TANK OVERFLOWED	Date and Hour of Occurrence	1PM	Date and Hour of Discovery	3/23/07
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	GARY WINK		
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.\*

Describe Area Affected and Cleanup Action Taken.\* Phoenix has contacted Whole Earth Environmental, 19606 San Gabrel, Houston, TX 77084 (9/20/07) to over see the clean up on this spill. Please find attached Whole Earth Environmental's proposal to clean up the affected area of RP-1419.

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>Phyllis Gunter</i>	OIL CONSERVATION DIVISION	
Printed Name: Phyllis R. Gunter	Approved by District Supervisor <i>D. Johnson</i> ENVIRONMENTAL ENGINEER	
Title: Agent	Approval Date: 11-1-07	Expiration Date:
E-mail Address: phygun@aol.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 11/1/07 Phone: 432-686-9869		

\* Attach Additional Sheets If Necessary

cc: *Ramirez Sanchez*