

# Ocotillo ENVIRONMENTAL

Dirt Work • On-Site Remediation • Soil Testing • Excavation

## RECEIVED

January 24, 2008

JAN 30 2008

Mr. Larry Johnson  
Environmental Engineer  
Oil Conservation Division  
New Mexico Energy, Minerals and Natural Resources Department  
1625 N. French Drive  
Hobbs, New Mexico 88240

## HOBBS OCD

**Re: Spill Remediation Report, Lovington Paddock Unit #7,  
Unit Letter P (SE/4, SE/4), Section 25, Township 16 South, Range 36 East,  
Lea County, New Mexico  
(Latitude: N 32 deg. 53 min. 12.85 sec. / Longitude: W 103 deg. 18 min. 1.02 sec.)  
1RP #1604**

Dear Mr. Johnson:

Chevron MidContinent SBU (Chevron) has retained Ocotillo Environmental, LLC (Ocotillo) to remediate impacts to soil from a leak at an injection line located approximately 75 feet east of the Lovington Paddock Unit #7 well. The well is located in the southeast quarter (SE/4) of the southeast quarter (SE/4), Section 25, Township 16 South, Range 36 East, Lea County, New Mexico (Site). Approximately 20 barrels of produced water was released from the injection line on September 26, 2007, and approximately 15 barrels was recovered from the site. A C-141 was submitted to the New Mexico Oil Conservation Division (NMOCD) on October 1, 2007. A Spill Investigation Workplan was submitted to the NMOCD on October 4, 2007, and verbal approval of the plan was granted on October 11, 2007. A Spill Remediation Workplan was submitted to the NMOCD on December 10, 2007, and approval was granted on December 14, 2007. Figure 1 shows the site location.

Based on published literature (1961), well records of the New Mexico State Engineer, and well records of the United States Geological Survey, groundwater occurs at approximately 65 feet bgs in the well located nearest the Site. No domestic water wells are located within 1,000 feet of the site. The NMOCD has established recommended remediation action levels (RRALs) for benzene, total BTEX and TPH resulting from spills of natural gas liquids ("Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993"). Remediation levels for benzene, total BTEX and TPH were calculated using the following NMOCD criteria:

Criteria	Result	Ranking Score
Depth-to-Groundwater	50 - 99 Feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0
Total:		10

OK to  
Close  
Chris Williams  
1/30/08  
RP# 1604

The following RRALs have been assigned based on NMOCD criteria:

<b>Benzene</b>	<b>10 mg/kg</b>
<b>Total BTEX</b>	<b>50 mg/kg</b>
<b>TPH</b>	<b>1,000 mg/kg</b>

### **Initial Investigation**

On November 13, 2007, Ocotillo installed five (5) soil borings (BH-1 through BH-5) at the site in order to assess the horizontal and vertical limits of the spill. Soil had been previously scraped from the surface of the spill area to a depth of approximately one foot below ground surface (bgs) and stockpiled on site. Figure 2 shows the locations of the soil borings.

As reported in the Spill Remediation Workplan, TPH concentrations in all samples were below the RRAL of 1,000 mg/kg. Chloride concentrations in samples from borings BH-1, BH-4 and BH-5 were all below the RRAL of 250 mg/kg. The sample from boring BH-2 at a depth of 0-2' bgs reported a chloride concentration of 3,200 mg/kg. All other samples from boring BH-2 reported chloride concentrations below 250 mg/kg.

### **Remediation Activities**

On January 14, 2008, a soil sample was collected from the present surface (1 foot bgs) in the area of boring BH-1, and submitted to Cardinal Laboratory (Cardinal) for chloride analysis. The laboratory reported a chloride concentration of 4,480 mg/kg. On January 15, 2008, Ocotillo began excavation of the impacted soil in the vicinity of boring BH-2. Soil was excavated to a depth of approximately 2.5 to 3 feet bgs until soil samples were collected from the bottom (SS-1, SS-2 and SS-3) and sides (N Comp, S Comp, and E Comp) of the excavation for laboratory analysis of chlorides. Table 1 provides a summary of the laboratory results. Figure 2 shows the sample locations. Appendix A provides a copy of the laboratory reports and chain of custody documentation.

Referring to Table 1, soil samples collected from the bottom (SS-1, SS-2 and SS-3), north (N Comp), and east (E Comp) sides reported chloride concentrations above 250 mg/kg. Excavation continued in the vicinity of boring BH-2 on January 16, 2008, until confirmation samples were collected from the bottom (SS-4, SS-5 and SS-6), north and east sides of the excavation. Soil was also excavated from the area of boring BH-1 to a depth of approximately 2 feet bgs until a confirmation sample was collected. All samples were delivered to Cardinal for laboratory analysis of chlorides. Table 1 provides a summary of the laboratory results. Figure 2 shows the sample locations. Appendix A provides a copy of the laboratory reports and chain of custody documentation.

Referring to Table 1, final samples collected from the area of borings BH-1 and BH-2 reported chloride concentrations below 250 mg/kg.

All stockpiled and newly excavated soil (approximately 360 yards) was removed from the site to an NMOCD approved disposal facility. The excavation was backfilled with soil from the New Mexico State Pit #294.

Mr. Larry Johnson  
Page 3  
January 24, 2008

Chevron respectfully requests that the Lovington Paddock #7 site be closed by the NMOCD. A final C141 form is attached as the last page of this report.

If you have any questions or need additional information, please call Mr. Larry Ridenour at (505) 396-4414 x102, or myself at (505) 441-7244. We may also be reached by email at [Lridenour@chevron.com](mailto:Lridenour@chevron.com) or [Cindy.Crain@gmail.com](mailto:Cindy.Crain@gmail.com).

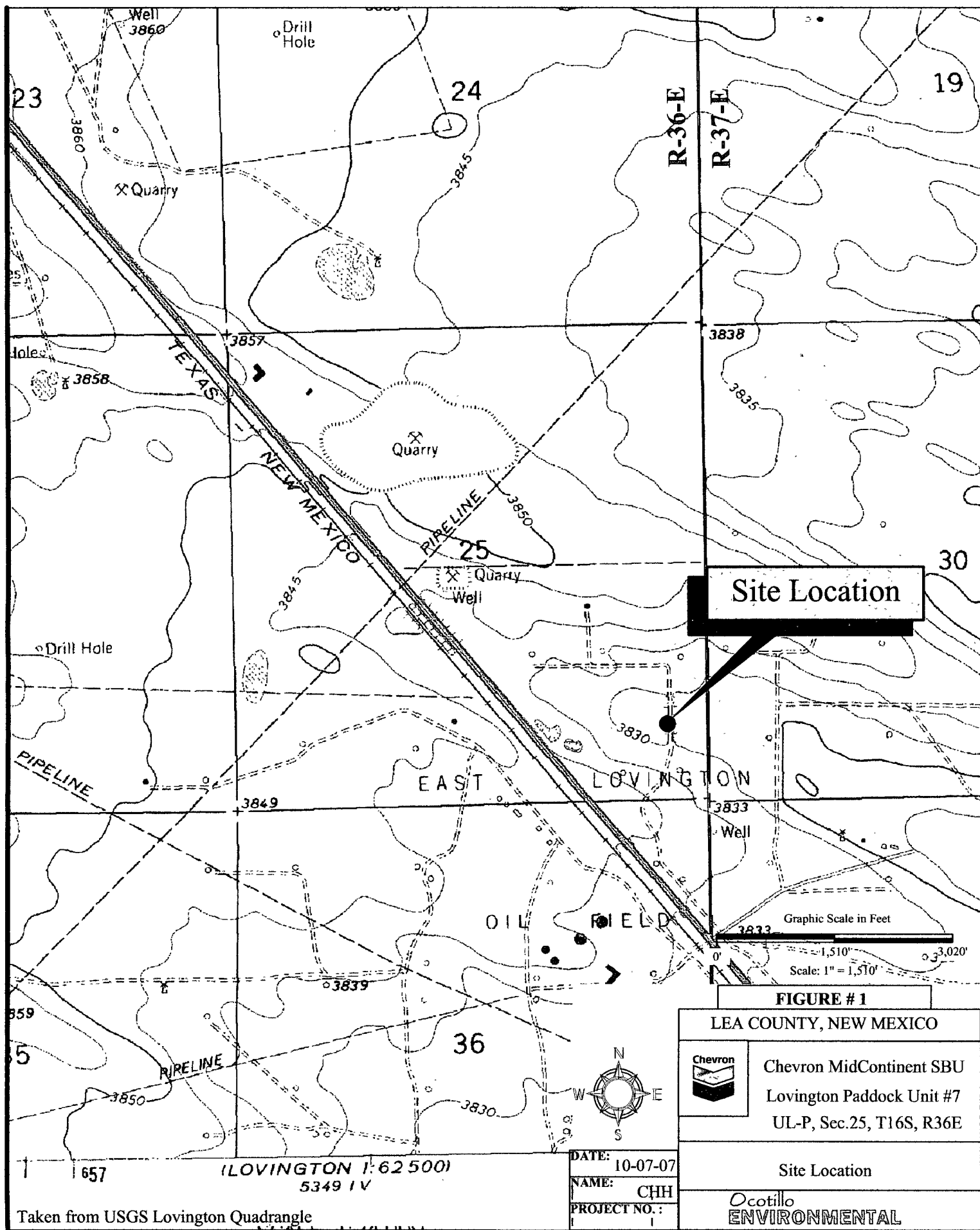
Sincerely,  
***Ocotillo Environmental, LLC***

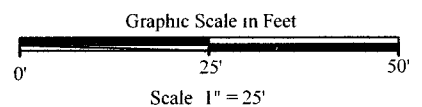
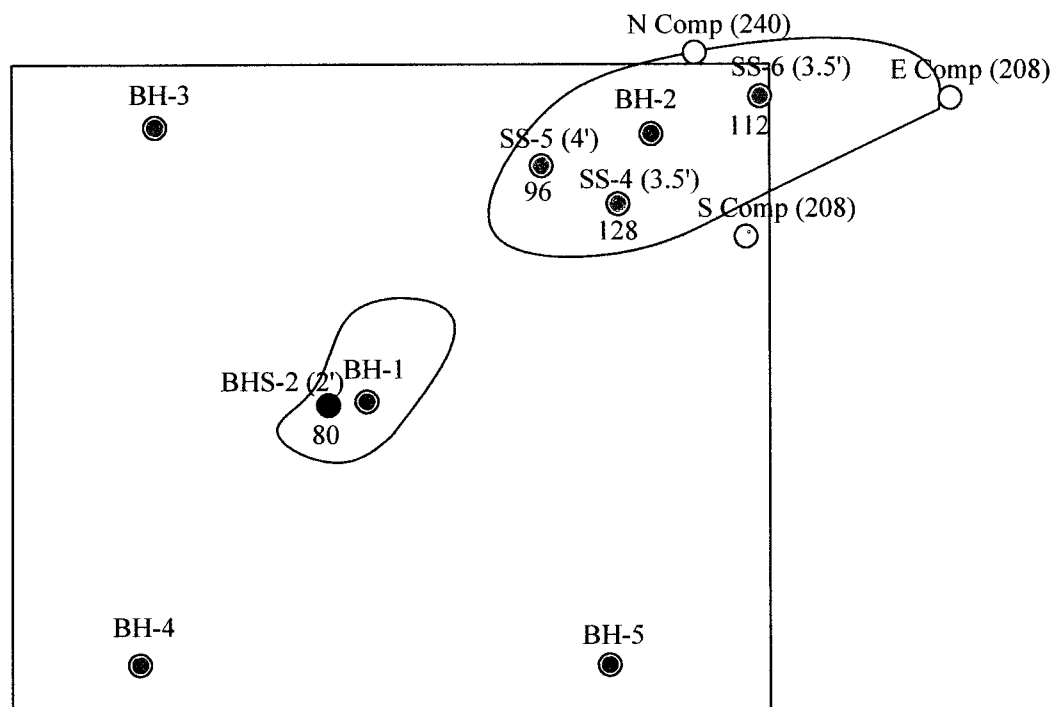
A handwritten signature in cursive script, reading "Cindy K. Crain".

Cindy K. Crain, P.G.  
Environmental Manager

cc: Larry Ridenour, Chevron

## FIGURES





**Figure # 2**

LEA COUNTY, NEW MEXICO



Chevron MidContinent SBU  
Lovington Paddock Unit #7  
UL-P, Sec. 25, T16S, R36E

Site Drawing With Soil Boring and Sample  
Locations

*Ocotillo*  
**ENVIRONMENTAL**

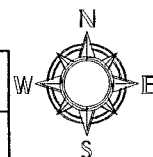
**LEGEND**

Soil Boring Location

Spill Area Boundary

Excavation Area

SS-1 Soil Sample Location with  
(3,5') depth (feet) and Chloride  
concentration (mg/kg)  
128



DATE: 1-28-08

NAME: MAC

PROJECT NO.: 1107-007B

## TABLE

**Table 1:**  
**Summary of Laboratory Analysis of Soil Samples**  
**Chevron MidContinent Alaska, Lovington Paddock #7**  
**Section 25, Township 16 South, Range 36 East**  
**Lea County, New Mexico**

Sample Date	Soil Boring Number	Sample Depth (feet BGS)	TPH (GRO) C6 - C12 mg/kg	TPH (DRO) C12 - C28 mg/kg	TPH (ORO) C28 - C35 mg/kg	Total TPH C6 - C35 mg/kg	Chloride (mg/kg)
RRAL						1000	250
1/14/08	BH-1	1	---	---	---	---	4,480.0
1/16/08	BHS-2	2	---	---	---	---	80.0
11/13/07	BH-1	5-7	<16.7	<16.7	<16.7	<50.1	94.5
		10-12	<16.7	<16.7	<16.7	<50.1	96.5
		15-17	---	---	---	---	42.5
		20-22	---	---	---	---	42.5
11/13/07	BH-2	0-2	<16.1	61.6	<16.1	61.6	3,200.0
1/15/08	SS-1	2.5	---	---	---	---	528.0
1/16/08	SS-4	3.5	---	---	---	---	128.0
1/15/08	SS-2	3	---	---	---	---	464.0
1/16/08	SS-5	4	---	---	---	---	96.0
1/15/08	SS-3	2.5	---	---	---	---	416.0
1/16/08	SS-6	3.5	---	---	---	---	112.0
1/15/08	N Wall Comp	---	---	---	---	---	560.0
1/16/08	N Wall Comp	---	---	---	---	---	240.0
1/15/08	S Wall Comp	---	---	---	---	---	208.0
1/15/08	E Wall Comp	---	---	---	---	---	928.0
1/16/08	E Wall Comp	---	---	---	---	---	208.0
11/13/07		5-7	<16.5	<16.5	<16.5	<49.5	234.0
11/13/07		10-12	---	---	---	---	191.0
11/13/07		15-17	---	---	---	---	128.0
11/13/07		20-22	---	---	---	---	63.8
11/13/07		25-27	---	---	---	---	42.5
11/13/07	BH-3	0-2	<15.9	75.3	44.1	119.4	67.7
11/13/07		5-7	<15.7	<15.7	<15.7	<47.1	223.0
11/13/07		10-12	---	---	---	---	255.0
11/13/07		15-17	---	---	---	---	234.0
11/13/07		20-22	---	---	---	---	277.0
11/13/07		25-27	---	---	---	---	170.0
11/13/07		30-32	---	---	---	---	128.0
11/13/07	BH-4	0-2	<15.3	<15.3	<15.3	<45.9	43.4
11/13/07		5-7	<15.3	<15.3	<15.3	<45.9	43.4
11/13/07		10-12	---	---	---	---	42.5
11/13/07		15-17	---	---	---	---	42.5
11/13/07	BH-5	0-2	<15.4	<15.4	<15.4	<46.2	65.5
11/13/07		5-7	<15.7	<15.7	<15.7	<47.1	44.4
11/13/07		10-12	---	---	---	---	21.3
11/13/07		15-17	---	---	---	---	21.3
11/13/07		20-22	---	---	---	---	42.5

**Notes.**

1. BGS: Depth in feet below ground surface
2. mg/kg: Milligrams per kilogram
3. GRO: Gasoline Range Organics
4. DRO: Diesel Range Organics
5. ORO: Oil Range Organics



## **APPENDIX A**

### **ANALYTICAL DATA AND CHAIN OF CUSTODY DOCUMENTATION**



ANALYTICAL RESULTS FOR  
OCOTILLO ENVIRONMENTAL, LLC  
ATTN: CINDY CRAIN  
P.O. BOX 1816  
HOBBS, NM 88241  
FAX TO: (432) 272-0304

Analysis Date: 01/14/08  
Sampling Date: 01/14/08  
Sample Type: SOIL  
Sample Condition: INTACT  
Sample Received By: ML  
Analyzed By: KS

LAB NO.	SAMPLE ID	Cl <sup>-</sup> (mg/kg)
H14080-1	BH1 @ 1'	4,480
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		< 0.1

Note: Analysis performed on a 1:4 w:v aqueous extract.

01/15/08  
Date

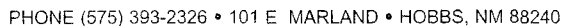
PLEASE NOTE **Liability and Damages** **Cardinal's** liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed 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 services hereunder by **Cardinal**, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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 analysis. 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.

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



Analysis Date: 01/16/08  
Sampling Date: 01/15/08  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: ML  
Analyzed By: HM

Note: Analyses performed on 1:4 w:v aqueous extracts.

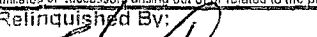
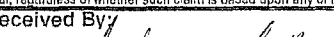
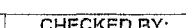
PLEASE NOTE **Liability and Damages** **Cardinal's** liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed 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 services hereunder by **Cardinal**, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

[illegible]

**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 analysis. 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:  Date: 7-15-07 Time: 2:05 PM		Received By:  Date: _____ Time: _____		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 'Add'l Phone #: Fax Result: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 'Add'l Fax #: REMARKS:	
Relinquished By: _____ Date: _____ Time: _____		Received By: _____ Date: _____ Time: _____		FAX # 432-272-0304 ASAP Please	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No		CHECKED BY: (Initials) 	

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



ANALYTICAL RESULTS FOR  
OCOTILLO ENVIRONMENTAL, LLC  
ATTN: CINDY CRAIN  
P.O. BOX 1816  
HOBBS, NM 88241  
FAX TO: (432) 272-0304

Receiving Date: 01/16/08  
Reporting Date: 01/17/08  
Project Owner: CHEVRON (1107-007B)  
Project Name: LOVINGTON PADDOCK UNIT #7  
Project Location: LEA COUNTY, NM

Analysis Date: 01/16/08  
Sampling Date: 01/16/08  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: HM  
Analyzed By: KS

LAB NO.	SAMPLE ID	Cl <sup>-</sup> (mg/kg)
H14098B-1	SS-4 @ 3.5'	128
H14098B-2	SS-5 @ 4'	96
H14098B-3	SS-6 @ 3.5'	112
H14098B-4	COMP S NORTH WALL	240
H14098B-5	COMP S EAST WALL	208
H14098B-6	BHS #2	80
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		2.0

METHOD: Standard Methods	4500-CIB
--------------------------	----------

Note: Analyses performed on 1:4 w:v aqueous extracts.

Beate S. Probst  
Chemist

01/17/10  
Date

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



# ARDINAL 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>Ocotillo Environmental</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>											
Project Manager: <u>Cindy Crain</u>				P.O. #:															
Address: <u>2125 French Dr</u>				Company: <u>Ocotillo</u>															
City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88240</u>				Attn:															
Phone #: <u>575-441-7244</u> Fax #: <u>432-272-0304</u>				Address:															
Project #: <u>1107-007 B</u> Project Owner: <u>Chevron</u>				City:															
Project Name: <u>Livingston Paddock Unit #7</u>				State: Zip:															
Project Location: <u>Lee County NM</u>				Phone #:															
Sampler Name: <u>Steve Cannon</u>				Fax #:															
FOR LAB USE ONLY																			
Lab I.D.		Sample I.D.		(GRAB OR COMPOUND)		# CONTAINERS		MATRIX				PRESERV		SAMPLING					
								GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER				ACID/BASE ICE / COOL OTHER		DATE TIME					
H14048B1		55-4 @ 3.5'		G										1-16-07 11:31					
-2		55-5 @ 4'		G										" 11:36					
-3		55-6 @ 35'		G										" 11:42					
-4		Camp 5 North Wall		G										" 11:44					
-5		Camp 5 <sup>EAST</sup> South Wall		G										" 11:52					
-6		BH5 #2		G										" 11:23					

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>Steve Cannon</u>		Date: <u>1-16-07</u>		Received By: <u>Hope I. M. Wene</u>		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Add'l Phone #:	
		Time: <u>1:34 PM</u>				Fax Result: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS: <u>Fax # 432-272-0304</u> <u>ASAP Please</u>			
		Time:							
Delivered By: (Circle One) Sampler - UPS - Bus - Other:				Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		CHECKED BY: (Initials) <u>Jan</u>			

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

NOTE: TALKED to Cindy about CUC & sample id not matching. She said the sample Id was correct & gave me permission to change CUC. 01-16-07

## C141 DOCUMENTATION



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	Chevron Midcontinent LP	Contact	Larry Ridenour
Address	HCR 60 Box 423 Lovington, NM 88260	Telephone No	(505) 396-4414 x 102
Facility Name	Lovington Paddock #7	Facility Type	Injection Line
Surface Owner:	City of Lovington	Mineral Owner:	State of NM
		Lease No.	9077-2
		IRP #	1604
		API #	30-025-03747

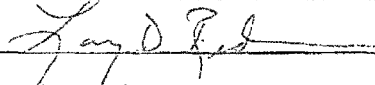
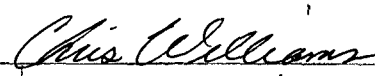
**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	25	16S	36E	330	South	330	East	Lea

Latitude N 32 deg. 53 min. 12.85 sec. Longitude W 103 deg. 18 min. 1.02 sec.

**NATURE OF RELEASE**

Type of Release <sup>1</sup>	Produced Water	Volume of Release	20 BW	Volume Recovered	15 bbl fluids
Source of Release	Injection line	Date and Hour of Occurrence	9/26/07 7:15 AM	Date and Hour of Discovery	9/26/07 7:30 AM
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Pat Caperton		
By Whom?	Larry Ridenour	Date and Hour	9/27/07 10:25 AM		
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.*					
Fiberglass line parted in collar. Leak detected by SCADA system and was shut in very shortly thereafter. Roustabout gang was dispatched with enviro vat to pick up standing water. Picked up 15 bbls of water total. Estimate total spill at 20 bbls water with skim of oil. Emergency one call was done and contaminated dirt removal began on 9/27/07 Chlorides: 35,300					
Describe Area Affected and Cleanup Action Taken.*					
An area approximately 100' x 80' was excavated to a depth of one to two feet bgs. Soil borings were installed in order to assess the horizontal and vertical limits of the spill. Additional soil was excavated at the center and northeast portions of the site until confirmation samples reported all chloride and TPH concentrations below the New Mexico clean up standards. Impacted soil was hauled to an NMOCD approved disposal facility, and the area was backfilled with clean soil from the State of New Mexico pit #294.					
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: Larry Ridenour	Approved by District Supervisor: 	
Title: Operations Representative	Approval Date: 1/30/08	Expiration Date: 1/30/08
E-mail Address: Lridenour@chevron.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1/24/08	Phone: (505) 396-4414 x 102	

\* Attach Additional Sheets If Necessary