Stoller

established 1959

April 5, 2006

Chris Beadle
New Mexico EMNRD
Oil Conservation Division
1301 W. Grand
Artesia, NM 88210

30-015-27537

RECEIVED
APR 10 2006
OCD-ARTESIA

RE: Transmittal of Remedial Action Final Report for Poker Lake Unit No. 080.

Attached for your review are the Remedial Action Final Reports for Poker Lake Unit No. 080. Stoller is pleased to submit this report on behalf of Bass Enterprises Production Company. The report recommends that no further actions be required at this time with regard to hydrocarbon contamination. Chloride contamination if present below the surface of the active pad will be addressed, as required by NMOCD and BLM guidelines, during normal site restoration activities when the well location is permanently abandoned.

If you have any questions regarding the report, please do not hesitate to contact Christy Box at (505) 885-0172 or Harry Bolton at (303) 546-4300.

Regards,

Donald L. George
Assistant Vice President

cc: Mike Waygood, Bass Enterprises Production Company
Terry Gregston, BLM

APPROVED CLOSURE.
COMPLIANCE CLOSED.
CR 4/10/06

Bass Enterprises Production Company

Remedial Action Final Report
Poker Lake Unit No. 080

April 4, 2006

Stoller

Submitted by
The S.M. Stoller Corporation
314 W. Mermod, Suite 102
Carlsbad, New Mexico 88220
(505) 885-0172

Table of Contents

Executive Summary

The New Mexico Oil Conservation Division, District 2 Office, issued a letter of violation to Bass Enterprises Production Company (Bass) for a spill at Poker Lake Unit No. 080. On behalf of Bass, the S.M. Stoller Corporation (Stoller) and Mesquite Services, Inc. (Mesquite) conducted remediation activities on March 2, 2006. Contaminated soil was excavated, verification soil samples were collected for laboratory analysis, and the excavation was backfilled. All excavated material was transported offsite to Controlled Recovery, Incorporated (CRI). Laboratory analysis of soil samples confirmed field-screening methods.

The wellhead area impacted by the spill has been remediated in compliance with Division guidelines. No additional remedial actions are recommended for subsurface chlorides at this time. However, subsurface soils will be addressed, as required by BLM and NMOCD guidelines, during normal site restoration activities when the well location is permanently abandoned.

Introduction

The New Mexico Oil Conservation Division (NMOCD), District 2 Office, issued a letter of violation (Attachment A) to Bass. This violation notice regards Poker Lake Unit No. 080 and is dated February 2, 2006. NMOCD had identified surface leaks/spills during a routine site inspection. Specific inspection comments included localized wellhead contamination with associated saturated soil, hydrocarbon odors, and visible chloride residues. NMOCD did not require a remediation work plan for this release prior to commencing cleanup activities.

Stoller reviewed the ranking criteria for this site to determine the recommended remediation action levels. Using the NMOCD "Guidelines For Remediation of Leaks, Spills, and Releases," Stoller determined the total ranking score to be between 0-9. Depth to groundwater is greater than 100 feet. The site is not within the limits of a wellhead protection area. The distance to the nearest surface water body is greater than 1,000 horizontal feet. Therefore, remediation action levels are 10 parts-per-million (ppm) benzene, 50 ppm total benzene, toluene, ethylbenzene, and xylenes (BTEX), and 5,000 ppm total petroleum hydrocarbons (TPH).

Site Location and Description

Poker Lake Unit No. 080 is located in section 19, township 24 south, range 31 east in Eddy County, New Mexico. The site consists of a wellhead and pump jack situated on a pad surfaced with caliche. Crude oil and produced water are transferred to a tank battery southwest of the site via a 2-inch flow line. Figure 1 (Attachment B) is a sketch of the site showing the physical features, contamination zone, remedial excavation, and sampling locations. A search of the well location using the U.S. Bureau of Land Management (BLM), New Mexico State Office, Statewide Spatial Database, verified BLM surface ownership/management.

Response to Release

Bass Enterprises contracted Stoller and Mesquite to provide remedial services in response to the above referenced NMOCD letter of violation.

Stoller and Mesquite began cleanup operations Thursday morning, March 2, 2006, and finished remedial activities that afternoon. Stoller's initial inspection of the site confirmed that of the NMOCD. Localized contamination resulted from a release of fluids due to worn packing in the wellhead stuffing box. The impacted area roughly centered on the wellhead, extending about 30 feet east and 10 feet north and south (Figure 1). The impacted area was confined to the pad. There was no evidence of fluids running off the pad as a result of this spill.

Methods of Remediation

Stoller provided supervision of the remedial activities, directed Mesquite personnel, conducted field screening, and collected confirmation samples. The surface area impacted by the release was scraped with the backhoe to remove hydrocarbon stains and chloride residues. Contaminated soil immediately surrounding the wellhead, within the six-by-six-feet well box, was removed by hand digging. Contaminated soil outside the well box was excavated with the backhoe. Observations of soil staining, chloride residues, and hydrocarbon odors guided the initial cleanup of highly contaminated/saturated soils. Stoller used a photoionization detector (PID) to screen impacted soils and assess the extent of contamination. The PID was calibrated onsite with isobutylene and programmed with a response factor to more accurately reflect benzene concentrations.

Headspace samples were collected periodically as soil removal progressed. Soil removal stopped when either headspace analysis indicated volatiles were less than 100 ppm, or contaminated soils were removed to the maximum extent practicable. Confirmation samples were then collected from the excavation for headspace and offsite laboratory analysis.

The impacted surface of the pad was scraped to a depth of about three inches. This was sufficient to remove soil staining and chloride residues resulting from the release in the periphery. However, close to the wellhead, released fluids had penetrated through the caliche cap.

Mesquite personnel removed highly contaminated/saturated soil at the wellhead by hand digging. Within the confines of the well box or cellar, minimal soil removal was necessary. At a depth of one-foot the soil within the cellar was essentially dry and stain-free. A grab sample (PLU080-2) was collected from the southeast corner of the cellar for headspace analysis. As seen on the Headspace Testing for Volatiles form (Attachment C), results for sample number PLU080-2 confirm a peak reading of 32 ppm volatiles.

Contaminated soil around the exterior of the cellar was excavated with the backhoe. The final excavation measured about 16 feet north to south and 18 feet east to west (Figure 1). It tapered from three inches at the margins to a maximum depth of two feet around the cellar. The headspace testing form (Attachment C) presents screening data for depths of 3-inches, 1.5-feet, and 2-feet. Representative samples were collected and analyzed as excavating progressed. The sample locations are identified on Figure 1.

Excavating stopped when headspace analysis confirmed volatiles were less than 100 ppm in undisturbed soils. Confirmation soil samples were collected after digging was completed. Backfill material consisted of caliche scraped from the southern and western margins of the existing well pad. Analytical results for the confirmation samples are presented in the following section.

Sample Analysis

Headspace testing results were documented on the Headspace Testing for Volatiles form and are included as Attachment C. Headspace analysis was used in lieu of laboratory analysis for benzene and BTEX. Sample numbers for field headspace analysis correlate directly with laboratory confirmation soil sample numbers for consistency. One composite sample (PLU080-1) was collected from the contaminated soil stockpile for waste documentation purposes. Four grab samples (PLU080-9, PLU080-13, PLU080-14, and PLU080-15) were collected from the wellhead excavation to confirm remaining TPH levels. One sample was collected for chloride analysis.

Composite sample (PLU080-16) was collected for chloride analysis. This sample was composed of caliche material collected from several locations within the impacted area. It was collected after 3-inches of caliche had been scraped from the surface. This sample confirms the presence of chloride contamination within the caliche capping the pad.

Confirmation samples were transported by Stoller and relinquished under chain-of-custody to Cardinal Laboratories in Hobbs, New Mexico, for analysis. The chain-of-custody form is included as Attachment D. The samples were analyzed for TPH by method 8015 M and chlorides by method 4500-CL^-B. Laboratory results verify field-screening results. Attachment E is a copy of the laboratory certificate of analysis. Table 1 presents a summary of laboratory and headspace analytical results confirming OCD cleanup requirements have been achieved.

As shown in Table 1, none of the confirmation soil samples collected in the undisturbed soils of the excavation and analyzed for TPH exceeded the 5,000 ppm cleanup guideline. Corresponding headspace analysis indicated total volatile organic vapor concentrations were less than 100 ppm. Chlorides in the composite sample from the caliche pad, PLU080-16, were analyzed to be 2,800 ppm.

Table 1
Analytical Results for Confirmation Samples

Sample Number	Sample Location/Depth	Field Headspace Analysis (ppm)	TPH GRO (ppm)	TPH DRO (ppm)	Chlorides (ppm)
PLU080-1	soil stockpile	272	300	8,910	NA
PLU080-9	6' west WH/1.5'	5	<10.0	244	NA
PLU080-13	6' south WH/2'	19	<10.0	126	NA
PLU080-14	6' east WH/2'	84	<10.0	1,030	NA
PLU080-15	6' north WH/2'	52	28.0	1,900	NA
PLU080-16	caliche cap/3"	NA	NA	NA	2,800

NA = Not Analyzed WH = Wellhead

Contaminated Soil Disposition

Mesquite transported contaminated soils excavated at Poker Lake Unit No. 080 to CRI for final disposition as exempt waste. Copies of the waste acceptance documents are included as Attachment F. About 24 cubic yards of contaminated soil were removed from the site and hauled to CRI.

Conclusions and Recommendations

Poker Lake Unit No. 080 has been remediated to the extent required by NMOCD Guidelines in regards to the spill identified in the letter of violation dated February 2, 2006. The excavation has been backfilled and no grading or revegetating is necessary.

As stated in the NMOCD "Guidelines for Remediation of Leaks, Spills, and Releases," a total ranking score of 0 –9 is applicable to this site. Depth to groundwater is greater than 100 feet. The site is not within the limits of a wellhead protection area. The distance to the nearest surface water body is greater than 1,000 horizontal feet. Therefore, remediation action levels are 10 ppm benzene, 50 ppm BTEX, and 5,000 ppm TPH. Laboratory and headspace analysis both confirmed cleanup goals have been achieved. No further remedial actions are currently recommended for this site.

One composite sample was collected from the caliche pad following removal of impacted material. This sample confirmed the presence of chloride contamination within the caliche capping the pad. No additional remedial actions are recommended for subsurface chlorides at this time. However, subsurface soils will be addressed, as required by BLM and NMOCD guidelines, during normal site restoration activities when the well location is permanently abandoned.

Attachment A – NMOCD Letter of Violation

02/07/2006 13:19 FAX 432 687 0329 BASS ENTERPRISES → CARLSBAD 006/010

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

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

02-Feb-06

BASS ENTERPRISES PRODUCTION CO
PO BOX 2760
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

POKER LAKE UNIT No.080 4-19-24S-31E **30-015-27537-00-00**

Inspection Date	Type Inspection	Inspector	Violation?	*Significant Non-Compliance?	Corrective Action Due By:	Inspection No.
02/01/2006	Routine/Periodic	Chris Beadle	Yes	No	3/1/2006	iCLB0603248278

Violations
Surface Leaks/Spills

Comments on Inspection: Localized wellhead contamination, some saturated soils around wellhead. Contamination has flowed from wellhead area south across location. Hydrocarbon smells to impacted soils, chloride residues visible.

Wellhead area remediation is required. Remediation must be completed on this release no later than March 1, 2006. Notify NMOCD District 2 Office 48 hours prior to taking samples where results of the samples may be submitted to the OCD. Notify NMOCD District 2 Office when remediation is completed.

Oil Conservation Division * 1301 W. Grand * Artesia, New Mexico 88210
Phone: 505-748-1283 * Fax: 505-748-9720 * http://www.emnrd.state.nm.us

02/07/06 TUE 12:18 [TX/RX NO 7403] 006

Stoller

02/07/2006 13:19 FAX 432 687 0329 BASS ENTERPRISES → CARLSBAD 007/010

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 Divison 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,

Artesia OCD District Office

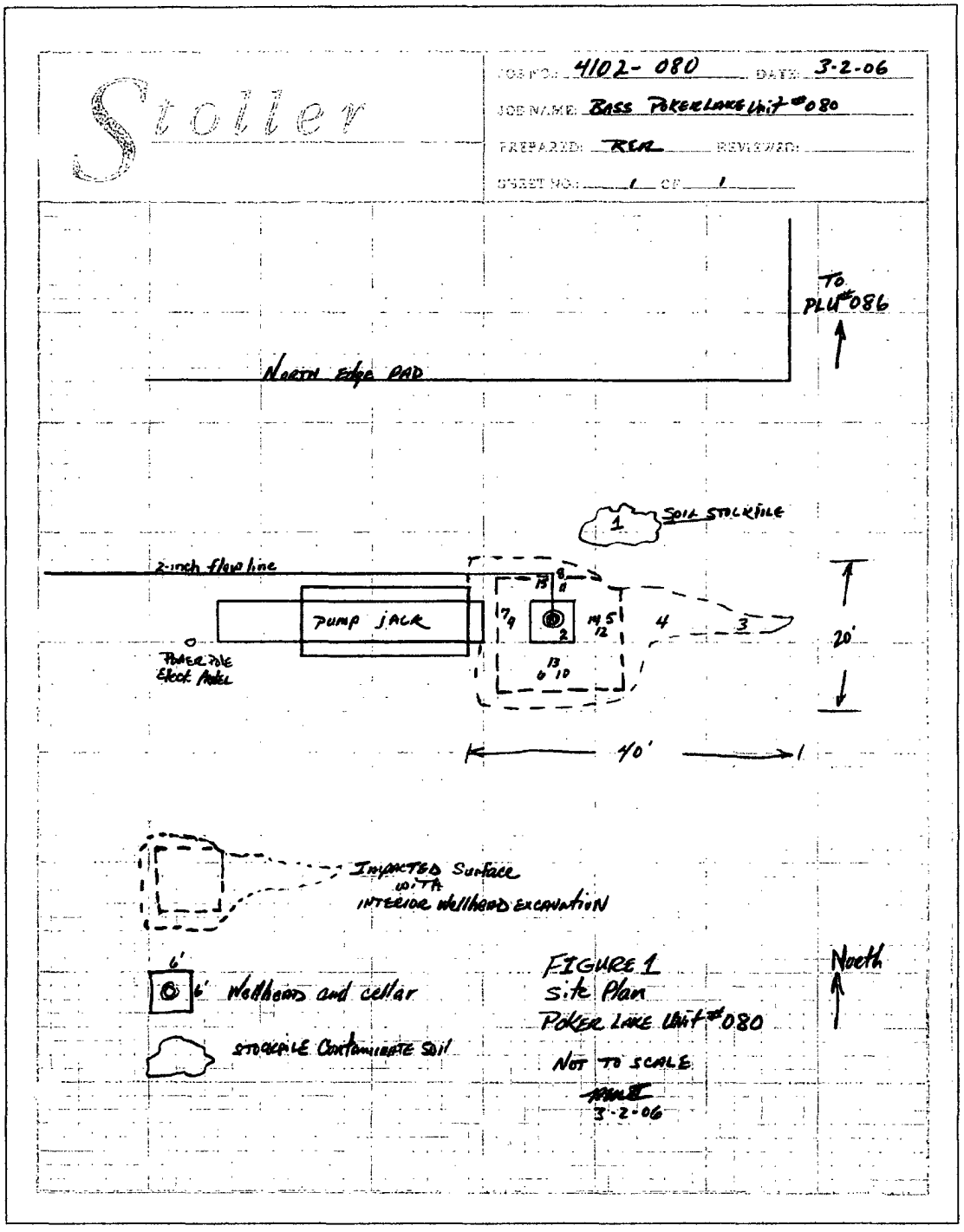
Note: Information in Detail Section comes directly from field inspector data entries - not all blanks will contain data.
*Significant Non-Compliance events are reported directly to the EPA, Region VI, Dallas, Texas.

Oil Conservation Division * 1301 W. Grand * Artesia, New Mexico 88210
Phone: 505-748-1283 * Fax: 505-748-9720 * http://www.emnrd.state.nm.us

02/07/06 TUE 12:18 [TX/RX NO 7403] 007

Stoller

Attachment B – Figure 1



Attachment C – Headspace Testing for Volatiles

Stoller

Page 1 of 1

HEADSPACE TESTING FOR VOLATILES

Project Name: Bass Poker Lake Unit #080 Engineer: R. Rapp

Project No.: 4102-080 Date: 3-2-06

Instrument Type: Thermo 580B Calibration Date: 3-2-06

Serial No.: 580M-46604-276 Calibration Gas Type/Concentration: 250 ppm Isobutylene

Photoionization Bulb Power (eV): 10 ~~Room~~ Temperature (°F): 66°

Sample Number PLU080-	Sampling Location	Sample Depth (ft.)	Sample Matrix	Peak Instrument Reading (ppm)	Comments Time	Lab TPH
1	Stockpile	surface	Sandy caliche	272	1026	composite for GRO ✓
2	Cellar	1.0	Sandy Caliche	32	1050	grab SB corner
3	30'E of WH	3"	Sandy Caliche	9.0	1105	grab
4	18'E of WH	3"	Red Silty Sand	60	1110	grab
5	6'E of WH	3"	Red Tan Caliche	616	1150	grab
6	6'S of WH	3"	Red Tan Caliche	386	1155	grab
7	6'W of WH	3"	Red Silty Sand	329	1200	grab
8	6'N of WH	3"	Red Tan Caliche	357	1210	grab
9	6'N of WH	1.5'	Red Silty Sand	5.0	1333	grab ✓
10	6'S of WH	1.5'	Red Silty Sand	126	1336	grab
11	6'N of WH	1.5'	Red Silty Sand	153	1340	grab
12	6'E of WH	1.5'	Red Tan Caliche	313	1344	grab
13	6'S of WH	2.0'	Red Sandy Silty Sand	19	1415	grab ✓
14	6'E of WH	2.0'	Red Tan Silty Caliche	84	1420	grab ✓
15	6'N of WH	2.0'	Red Tan Silty Sand	52	1425	grab ✓

WH = Wellhead

Attachment D – Sample Chain-of-Custody

CARDINAL LABORATORIES, INC.
2111 Beechwood, Abilene, TX 79603 (325) 673-7001 Fax (325) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

Company Name: S.M. STOLLER CORPORATION		**BILL TO**	
Project Manager: DON George		P.O. #:	
Address: 314 West Mermod Street, Suite 102		Company: SAME	
City: Carlsbad	State: NM Zip: 88220	Attn:	
Phone #: 505-885-0172	Fax #: 505-885-0776	Address:	
Project #: 4102-080	Project Owner:	City:	
Project Name: BEPCO		State:	Zip:
Project Location: POKER LAKE UNIT # 080		Phone #:	
Sampler Name: RALPH RUPP		Fax #:	

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: OIL	MATRIX: SLUDGE	MATRIX: OTHER:	PRESERV.: ACID/BASE:	PRESERV.: ICE / COOL	PRESERV.: OTHER:	SAMPLING: DATE	SAMPLING: TIME	ANALYSIS REQUEST: TPH modified 8015	ANALYSIS REQUEST: chlorides
H10868-1	PLU080-1	C	1			✓					✓		3-2-06	1026	✓	
-2	PLU080-9	G	1			✓					✓		3-2-06	1333	✓	
-3	PLU080-13	G	1			✓					✓		3-2-06	1415	✓	
-4	PLU080-14	G	1			✓					✓		3-2-06	1420	✓	
-5	PLU080-15	G	1			✓					✓		3-2-06	1425	✓	
-6	PLU080-16	C	1			✓					✓		3-2-06	1300		✓

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.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Ralph Rupp III	Date: 3-7-06 Time: 1645	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: Time:	Received By: (Lab Staff) [signature]	Fax Result: ☐ Yes ☐ No
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Temp, °C Intact? ☒ Yes ☐ No	Checked By: (Initials) [initials]	REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to (325) 673-7020.

Attachment E – Cardinal Laboratories Analytical Report

MAR-13-2006(MON) 15:55 S. M. STOLLER CORP. (FAX)5058850776 P. 007/009

Rx Date/Time MAR-13-2006(MON) 15:37 P. 004

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
S.M. STOLLER CORPORATION
ATTN: DON GEORGE
314 WEST MERMOD STREET, SUITE 102
CARLSBAD, NM 88220
FAX TO: (505) 885-0778

Receiving Date: 03/07/06
Reporting Date: 03/13/06
Project Number: 4102-080
Project Name: BEPCO
Project Location: POKER LAKE UNIT #080

Sampling Date: 03/02/06
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: BC/AB

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		03/10/06	03/10/06	03/09/06
H10868-1	PLU080-1	300	8810	-
H10868-2	PLU080-9	<10.0	244	-
H10868-3	PLU080-13	<10.0	126	-
H10868-4	PLU080-14	<10.0	1030	-
H10868-5	PLU080-15	28.0	1900	-
H10868-6	PLU080-16	-	-	2800
Quality Control		828	829	510
True Value QC		800	800	500
% Recovery		104	104	102
Relative Percent Difference		6.3	0.8	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB
*Analysis performed on a 1:4 w:v aqueous extract.

Chemist

3/13/06
Date

H10868.XLS

Attachment F – Waste Acceptance Document

MAR-17-2006 FRI 10:13 AM FAX NO. P. 03

CONTROLLED RECOVERY, INC.
P.O. Box 388 • Hobbs, New Mexico 88241-0388
(505) 393-1079
www.crihobbs.com

Bill to _____

Address _____

Company/Generator BASS

Lease Name Poker Lake 80

Trucking Company Mesquite | Vehicle Number MSOT 4 | Driver (Print) J

Date 3 2 06 | Time 1220 a.m. / p.m.

Type of Material

- ☐ Exempt
- ☐ Non-Exempt
- C138 _____
- ☐ Tank Bottoms
- C117 _____
- ☒ Soils
- ☐ Fluids
- ☐ Other Material
- List Description Below

DESCRIPTION

Volume of Material ☐ Bbls. _____ ☒ Yard 12 ☐ Gallons _____

☐ Wash Out ☐ Call Out ☐ After Hours ☐ Debris Charge

This statement applicable to exempt waste only.
I represent and warrant that the wastes are: generated from oil and gas exploration and production operations: exempt from Resource Conservation and Recover Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt wastes.

Agent _____ (Signature)

CRI Representative _____ (Signature)

TANK BOTTOMS

	Feet	Inches			
1st Gauge			BBLS Received		BS&W %
2nd Gauge			Free Water		
Received			Total Received		

81074

White - CRI Canary - CRI Accounting Pink - CRI Plant Gold - Transporter

Stoller

MAR-17-2006 FRI 10:12 AM FAX NO. P. 02

CONTROLLED RECOVERY, INC.
P.O. Box 388 • Hobbs, New Mexico 88241-0388
(505) 393-1079
www.crihobbs.com

Bill to _____

Address _____

Company/Generator BASS

Lease Name Poker Lake #80

Trucking Company Mesquite | Vehicle Number MSDT 4 | Driver (Print) JL

Date 4 3 2006 | Time 430 a.m. (p.m.)

Type of Material

- ☐ Exempt
- ☐ Non-Exempt
- C138 _____
- ☐ Tank Bottoms
- C117 _____
- ☒ Solid
- ☐ Fluids
- ☐ Other Material
- List Description Below

DESCRIPTION

Volume of Material ☐ Bbls. _____ ☐ Yard 12 ☐ Gallons _____

☐ Wash Out ☐ Call Out ☐ After Hours ☐ Debris Charge

This statement applicable to exempt waste only.
I represent and warrant that the wastes are: generated from oil and gas exploration and production operations: exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt wastes.

Agent _____ (Signature)

CRI Representative _____ (Signature)

TANK BOTTOMS

	Feet	Inches				
1st Gauge			BBLS Received		BS&W	%
2nd Gauge			Free Water			
Received			Total Received			

81113

White - CRI Canary - CRI Accounting Pink - CRI Point Gold - Transporter

The Print Shop #7521

Stoller