

Ocotillo ENVIRONMENTAL

Groundwater
impact? Sante Fe?

3/21/07

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

February 27, 2007

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

DRILL MONITOR WELL
APPROVED
3-28-07
JGA



DRILL PIT

Re: Groundwater Investigation Workplan, Apache Corporation, Hawk A-5 #3, Unit Letter O (SW/4, SE/4), Section 5, Township 21 South, Range 37 East, Lea County, New Mexico (Latitude: N 32 deg. 30.095' / Longitude: W 103 deg. 10.932')

Dear Mr. Johnson:

R

On behalf of Apache Corporation (Apache), Ocotillo Environmental, LLC (Ocotillo) began closure activities at the Hawk A-5 #3 drilling pit on January 25, 2007. Figure 1 shows the site location. Soil samples were collected below the pit liner on January 30, 2007, and submitted for laboratory analysis. Table 1 provides a summary of the laboratory results. Figure 2 shows the sample locations and chloride concentrations. The laboratory reports and chain of custody documentation are presented in Appendix A.

Referring to Table 1, the samples from the center (SS-3), the northeast corner (SS-7) and the southeast corner (SS-9) reported chloride concentrations below 250 mg/kg (99.1 mg/kg, 160 mg/kg, and 114 mg/kg, respectively). The samples collected from the northwest and southwest corners reported chloride concentrations above the clean up standard (250 mg/kg). Excavation continued on the west side of the pit, and samples were field tested for chloride concentrations. At a depth of 25 feet below ground surface (bgs), the chloride concentrations remained above the recommended clean up level (250 mg/kg).

Initial Investigation

On February 12, 2007, Ocotillo installed two (2) soil borings (BH-1 and BH-2) at the site, using an air rotary drilling rig, to assess the vertical limits of the chloride impact. Samples from the exploratory borings were collected from the currently excavated depth of twelve (12) feet bgs to a depth of approximately 82 feet bgs in boring BH-1, and to approximately 67 feet bgs in boring BH-2, using a split spoon sampling device. The sampling equipment was thoroughly cleaned between each sample interval with a solution of laboratory-grade detergent and potable water, and rinsed with distilled water. Figure 2 shows the locations of the soil borings. Appendix B presents the soil boring logs.

The soil samples from borings BH-1 and BH-2 were collected at approximately three (3) feet below the present surface and every five (5) feet thereafter. Samples were placed in clean glass sample jars, labeled, chilled in an ice chest, and delivered under chain-of-custody control to Environmental Lab of Texas (ELOT), located in Odessa, Texas. All soil samples collected from borings BH-1 and BH-2 were analyzed for chlorides by EPA method SW 846-9253. Table 2 presents a summary of laboratory analysis of soil samples. Laboratory analyses and chain of custody documentation are included in Appendix A.

Send Options... Help

To... harold.swain@usa.apachecorp.com
Cc... cindy.crain@gmail.com
Bcc...
Subject: Hawk AS#3 GW Investigation Recd 3-2-07
Attachments:

Normal Arial 10 B I U

Approval granted.

Start Microsoft Ou... Untitled -- ...

Trusted sites

9:14 AM

Mr. Larry Johnson
Page 2
February 27, 2007

Referring to Table 2, all samples collected from boring BH-1 reported chloride concentrations above 250 mg/kg until the sample collected at a depth of approximately 80 to 82 feet bgs (196 mg/kg). Samples collected from boring BH-2 reported chloride concentrations below 250 mg/kg, beginning at a depth of approximately 50 to 52 feet bgs (19 mg/kg).

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 66 feet bgs in the well located nearest the Site. No indication of groundwater was observed during the soil boring installations.

Proposed Investigation

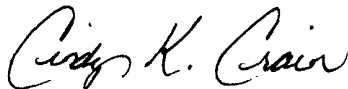
Apache proposes to install one (1) temporary monitoring well (MW-1) at the Site to determine an accurate depth to groundwater and determine whether a chloride impact has occurred. The proposed well location is presented on Figure 2.

An air-rotary drilling rig will be used to drill the well, and soil samples will be collected at five-foot intervals using a split-spoon sampling device. The samples will be tested for chlorides. The monitoring well will be constructed with 2-inch diameter schedule 40 PVC casing and screen. Approximately 20 feet of well screen will be placed in the well, with approximately 15 feet of screen extending into groundwater, and 5 feet extending above groundwater. Silica sand will be placed around the well screen to about 2 feet above the screen. A layer of bentonite pellets, approximately 2 feet thick, will be placed over the sand, and hydrated with potable water.

The well will be bailed after installation to remove fine-grained sediment disturbed during drilling. No sooner than 48 hours following well development, a groundwater sample will be collected from the well, and analyzed for chlorides. Depth-to-groundwater will be measured in the monitoring well before the well is purged and sampled. The groundwater sample will be collected using a dedicated disposable polyethylene bailer, and carefully poured into a laboratory-prepared container. The sample container will be labeled, immediately chilled in an ice chest, and transferred under chain-of-custody control to ELOT. The field observations will be documented in a bound field notebook, and a construction diagram and geologic log will be prepared for the monitoring well.

Following the receipt of laboratory results, the temporary monitoring well will be plugged if no groundwater impact has occurred. If an impact has occurred, the temporary monitoring well will be completed for further monitoring. The NMOCD will be notified at least 48 hours in advance of any activities at the site. A report will be submitted following the groundwater monitoring activities. If you have any questions or need additional information, please call Mr. Harold Swain at (432) 527-3311 or myself at (505) 441-7244. We may also be reached by email at Harold.Swain@usa.apachecorp.com or Cindy.Crain@gmail.com.

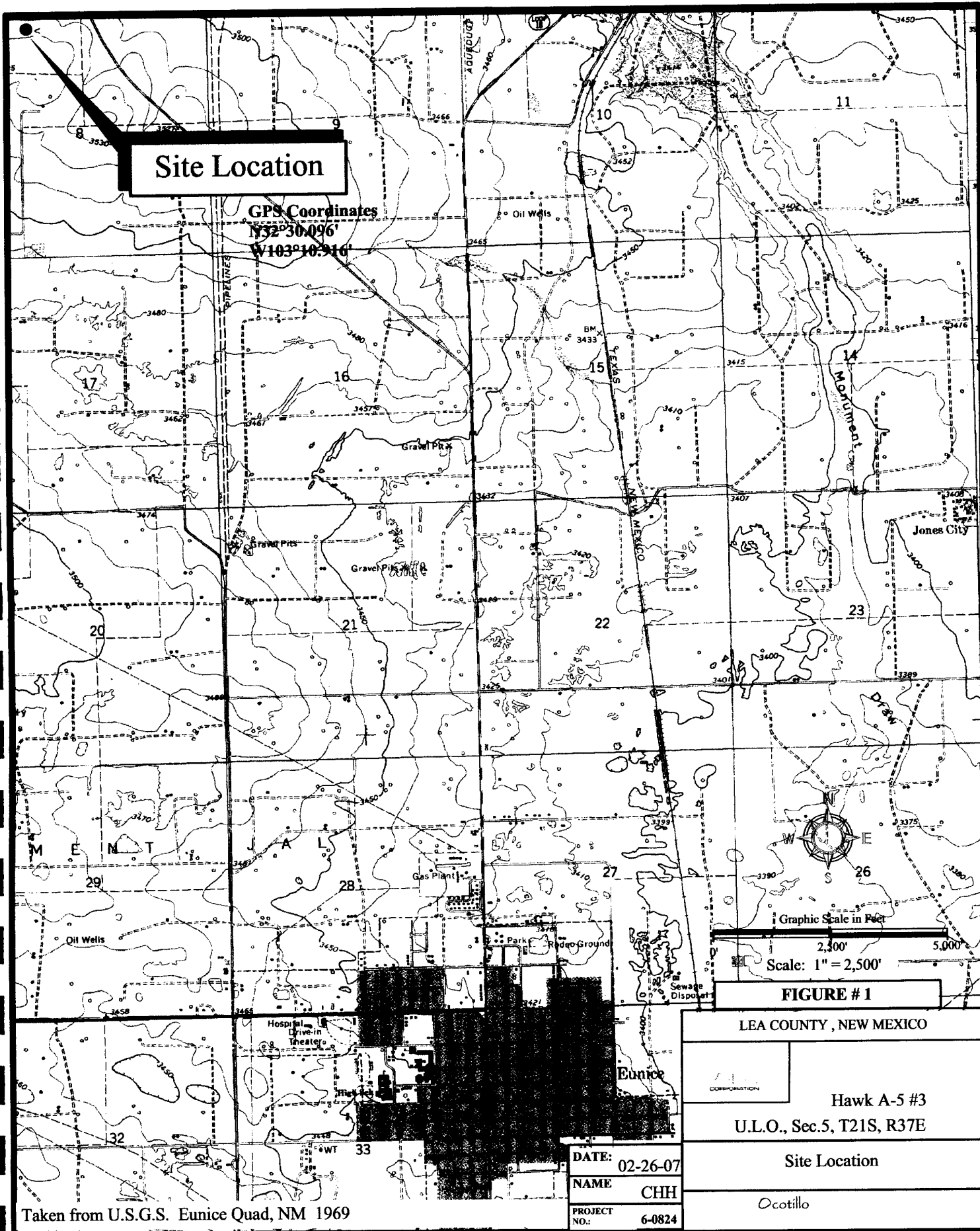
Sincerely,
Ocotillo Environmental, LLC



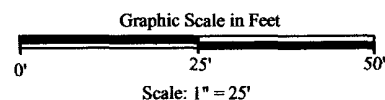
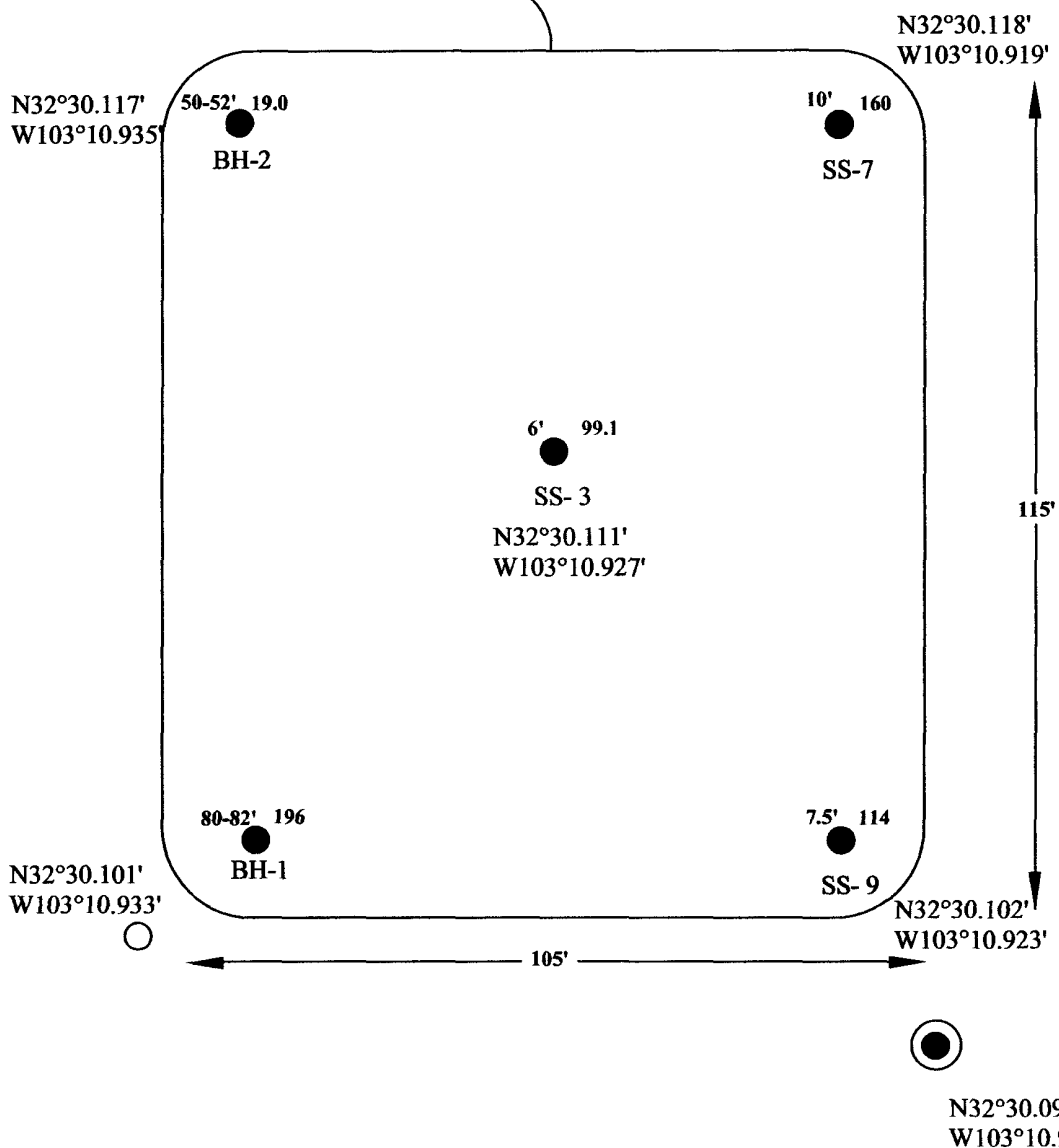
Cindy K. Crain, P.G.
Environmental Manager

cc: Harold Swain, Apache

FIGURES

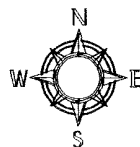


Approximate Pit Boundary



LEGEND

- 6' 99.1
SS-3
Soil sample location taken at a depth, feet, with chloride concentration (mg/kg).
- N32°30.111' W103°10.927'
GPS Coordinates
- Well location
- 80-82' 196
BH-1
Borehole sample location taken at a depth, feet, with chloride concentration, (mg/kg).
- Proposed Monitoring Well Location



DATE: 2-26-07
NAME: CHH
PROJECT NO.: 6-0824

FIGURE # 2

LEA COUNTY, NEW MEXICO

Hawk A 5 #3
U.L.O, NE/SE, Sec.5, T21S, R37E

Site Drawing with Proposed
Monitoring Well Location

Ocotillo

TABLES

Table 1: Summary of Laboratory Analysis of Soil Samples

Apache Hawk A-5 #3

Unit Letter O, Section 5, Township 21 South, Range 37 East

Lea County, New Mexico

Sample Date	Soil Sample Number	Soil Sample Location	Sample Depth (feet BGS)	Chloride (mg/kg)
WQCC Standard				250
1/30/07	SS-3	Center	6	99.1
1/30/07	SS-5	SW Corner	6	2,570
1/30/07	SS-6	SW Corner	9	9,820
1/30/07	SS-7	NE Corner	10	160
1/30/07	SS-8	NW Corner	10	12,000
1/30/07	SS-9	SE Corner	7.5	114
1/30/07	SS-10	NW Corner	12	10,900
1/30/07	SS-15	NW Corner	26	8,170
1/30/07	SS-17	NW Corner	30	13,000
1/30/07	SS-20	NW Corner	40	12,100

Notes:

1. BGS: Depth in feet below ground surface
2. mg/kg: Milligrams per kilogram

Analysis conducted by Environmental Lab of Texas, Odessa, TX

Table 2: Summary of Laboratory Analysis of Soil from Borings
Apache Hawk A-5 #3
Unit Letter O, Section 5, Township 21 South, Range 37 East
Lea County, New Mexico

Sample Date	Soil Sample Number	Sample Depth (feet BGS)	Chloride (mg/kg)
WQCC Standard			250
2/12/07	BH-1	15-17	6,890
		20-22	14,200
		25-27	10,600
		30-32	8,880
		35-37	9,140
		40-42	8,160
		45-47	4,880
		50-52	2,270
		55-57	1,700
		60-62	1,410
		65-67	545
		70-72	402
		75-77	357
		80-82	196
2/12/07	BH-2	26-28	8,170
		30-32	13,000
		40-42	12,100
		45-47	721
		50-52	19
		55-57	28.3
		60-62	22.8
		65-67	15.2

Notes:

1. BGS: Depth in feet below ground surface
2. mg/kg: Milligrams per kilogram

Analysis conducted by Environmental Lab of Texas, Odessa, TX

APPENDIX A

Laboratory Report and Chain of Custody Documentation



12600 West I-20 East - Odessa, Texas 79765

A Xenco Laboratories Company

Analytical Report

Prepared for:

Cindy Crain

Ocotillo Environmental

2125 French Dr.

Hobbs, NM 88201

Project: Apache- Hawk A-5 #3

Project Number: None Given

Location: Eunice, NM

Lab Order Number: 7B01012

Report Date: 02/06/07

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: None Given
Project Manager: Cindy Crain

Fax: (432) 367-6747

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-3	7B01012-01	Soil	01/30/07 07:40	02-01-2007 14:25
SS-5	7B01012-02	Soil	01/30/07 07:45	02-01-2007 14:25
SS-6	7B01012-03	Soil	01/30/07 08:35	02-01-2007 14:25
SS-7	7B01012-04	Soil	01/30/07 08:55	02-01-2007 14:25
SS-8	7B01012-05	Soil	01/30/07 09:00	02-01-2007 14:25
SS-9	7B01012-06	Soil	01/30/07 09:30	02-01-2007 14:25
SS-10	7B01012-07	Soil	01/30/07 10:20	02-01-2007 14:25

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: None Given
Project Manager: Cindy Crain

Fax: (432) 367-6747

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-3 (7B01012-01) Soil									
Chloride	99.1	5.00	mg/kg	10	EB70303	02/03/07	02/03/07	EPA 300.0	
SS-5 (7B01012-02) Soil									
Chloride	2570	40.0	mg/kg	80	EB70303	02/03/07	02/03/07	EPA 300.0	
SS-6 (7B01012-03) Soil									
Chloride	9820	100	mg/kg	200	EB70303	02/03/07	02/03/07	EPA 300.0	
SS-7 (7B01012-04) Soil									
Chloride	160	5.00	mg/kg	10	EB70303	02/03/07	02/03/07	EPA 300.0	
SS-8 (7B01012-05) Soil									
Chloride	12000	200	mg/kg	400	EB70303	02/03/07	02/03/07	EPA 300.0	
SS-9 (7B01012-06) Soil									
Chloride	114	5.00	mg/kg	10	EB70303	02/03/07	02/03/07	EPA 300.0	
SS-10 (7B01012-07) Soil									
Chloride	10900	200	mg/kg	400	EB70303	02/03/07	02/03/07	EPA 300.0	

Environmental Lab of Texas
A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 2 of 4

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: None Given
Project Manager: Cindy Crain

Fax: (432) 367-6747

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EB70303 - Water Extraction

Blank (EB70303-BLK1)

Prepared & Analyzed: 02/03/07

Chloride	ND	0.500	mg/kg
----------	----	-------	-------

LCS (EB70303-BS1)

Prepared & Analyzed: 02/03/07

Chloride	11.1	0.500	mg/kg	10.0	111	80-120
----------	------	-------	-------	------	-----	--------

Calibration Check (EB70303-CCV1)

Prepared & Analyzed: 02/03/07

Chloride	11.0		mg/L	10.0	110	80-120
----------	------	--	------	------	-----	--------

Duplicate (EB70303-DUP1)

Source: 7B01012-01

Prepared & Analyzed: 02/03/07

Chloride	99.8	5.00	mg/kg	99.1	0.704	20
----------	------	------	-------	------	-------	----

Matrix Spike (EB70303-MS1)

Source: 7B01012-01

Prepared & Analyzed: 02/03/07

Chloride	217	5.00	mg/kg	100	99.1	118	80-120
----------	-----	------	-------	-----	------	-----	--------

Environmental Lab of Texas
A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 3 of 4

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: None Given
Project Manager: Cindy Crain

Fax: (432) 367-6747

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By: Coley D. Keene

Date: 02/06/07

Brent Barron, Laboratory Director/Corp. Technical Director
Coley D. Keene, Org. Tech Director
Raland K. Tuttle, Laboratory Consultant

James Mathis, QA/QC Officer
Jeanne Mc Murrey, Inorg. Tech Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas
A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 4 of 4

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: Apple - truck 45#3

Project #:

Project Loc: Eunice, NM

●

Fax No: (432) 367-6747

NPDES

e-mail: cindy.crain@gmail.com

—

ORDER #:	1B01012	LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012									
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB # (lab use only)										ORDER #:										1B01012											
LAB # (lab use only)										FIELD CODE										AB																															

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Ocotillo ENV.
 Date/ Time: 2-1-07 2:25
 Lab ID #: 7B01012
 Initials: CK

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	Yes	No	12.5 ° C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	<u>Not Present</u>	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	<u>Not Present</u>	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	<u>Not Applicable</u>	
#20	VOC samples have zero headspace?	Yes	No	<u>Not Applicable</u>	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

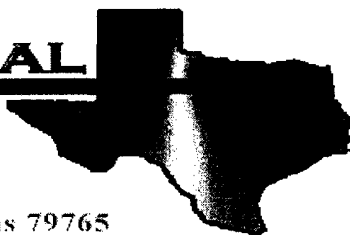
Check all that Apply:

☐ See attached e-mail/ fax

☐ Client understands and would like to proceed with analysis

☐ Cooling process had begun shortly after sampling event

ENVIRONMENTAL LAB OF



12600 West I-20 East - Odessa, Texas 79765

A Xenco Laboratories Company

Analytical Report

Prepared for:

Cindy Crain

Ocotillo Environmental

2125 French Dr.

Hobbs, NM 88201

Project: Apache- Hawk A-5 #3

Project Number: 6-0824

Location: UL-o, Sec. 5, 21S, 37E

Lab Order Number: 7B13003

Report Date: 02/14/07

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: 6-0824
Project Manager: Cindy Crain

Fax: (432) 367-6747

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH-1 15-17	7B13003-01	Soil	02/12/07 10:44	02-13-2007 10:42
BH-1 20-22	7B13003-02	Soil	02/12/07 10:50	02-13-2007 10:42
BH-1 25-27	7B13003-03	Soil	02/12/07 10:56	02-13-2007 10:42
BH-1 30-32	7B13003-04	Soil	02/12/07 11:02	02-13-2007 10:42
BH-1 35-37	7B13003-05	Soil	02/12/07 11:04	02-13-2007 10:42
BH-1 40-42	7B13003-06	Soil	02/12/07 11:07	02-13-2007 10:42
BH-1 45-47	7B13003-07	Soil	02/12/07 11:14	02-13-2007 10:42
BH-1 50-52	7B13003-08	Soil	02/12/07 11:19	02-13-2007 10:42
BH-1 55-57	7B13003-09	Soil	02/12/07 11:24	02-13-2007 10:42
BH-1 60-62	7B13003-10	Soil	02/12/07 12:25	02-13-2007 10:42
BH-1 65-67	7B13003-11	Soil	02/12/07 12:46	02-13-2007 10:42
BH-1 70-72	7B13003-12	Soil	02/12/07 12:52	02-13-2007 10:42
BH-1 75-77	7B13003-13	Soil	02/12/07 12:56	02-13-2007 10:42
BH-1 80-82	7B13003-14	Soil	02/12/07 13:00	02-13-2007 10:42
SS-15 26-26	7B13003-15	Soil	01/31/07 08:50	02-13-2007 10:42
SS-17 30-30	7B13003-16	Soil	01/31/07 13:00	02-13-2007 10:42
SS-20 40-40	7B13003-17	Soil	01/31/07 16:00	02-13-2007 10:42
BH-2 45-47	7B13003-18	Soil	02/12/07 13:44	02-13-2007 10:42
BH-2 50-52	7B13003-19	Soil	02/12/07 13:52	02-13-2007 10:42
BH-2 55-57	7B13003-20	Soil	02/12/07 14:02	02-13-2007 10:42
BH-2 60-62	7B13003-21	Soil	02/12/07 14:10	02-13-2007 10:42
BH-2 65-67	7B13003-22	Soil	02/12/07 14:20	02-13-2007 10:42

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: 6-0824
Project Manager: Cindy Crain

Fax: (432) 367-6747

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BH-1 15-17 (7B13003-01) Soil									
Chloride	6890	100	mg/kg	200	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 20-22 (7B13003-02) Soil									
Chloride	14200	200	mg/kg	400	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 25-27 (7B13003-03) Soil									
Chloride	10600	200	mg/kg	400	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 30-32 (7B13003-04) Soil									
Chloride	8880	100	mg/kg	200	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 35-37 (7B13003-05) Soil									
Chloride	9140	100	mg/kg	200	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 40-42 (7B13003-06) Soil									
Chloride	8160	100	mg/kg	200	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 45-47 (7B13003-07) Soil									
Chloride	4880	50.0	mg/kg	100	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 50-52 (7B13003-08) Soil									
Chloride	2270	25.0	mg/kg	50	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 55-57 (7B13003-09) Soil									
Chloride	1700	20.0	mg/kg	40	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 60-62 (7B13003-10) Soil									
Chloride	1410	20.0	mg/kg	40	EB71401	02/14/07	02/14/07	EPA 300.0	

Environmental Lab of Texas
A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 2 of 7

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: 6-0824
Project Manager: Cindy Crain

Fax: (432) 367-6747

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BH-1 65-67 (7B13003-11) Soil									
Chloride	545	10.0	mg/kg	20	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 70-72 (7B13003-12) Soil									
Chloride	402	110	mg/kg	220	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-1 75-77 (7B13003-13) Soil									
Chloride	357	10.0	mg/kg	20	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-2 80-82 (7B13003-14) Soil									
Chloride	196	5.00	mg/kg	10	EB71401	02/14/07	02/14/07	EPA 300.0	
SS-15 26-26 (7B13003-15) Soil									
Chloride	8170	100	mg/kg	200	EB71401	02/14/07	02/14/07	EPA 300.0	
SS-17 30-30 (7B13003-16) Soil									
Chloride	13000	200	mg/kg	400	EB71401	02/14/07	02/14/07	EPA 300.0	
SS-20 40-40 (7B13003-17) Soil									
Chloride	12100	200	mg/kg	400	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-2 45-47 (7B13003-18) Soil									
Chloride	721	10.0	mg/kg	20	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-2 50-52 (7B13003-19) Soil									
Chloride	19.0	5.00	mg/kg	10	EB71401	02/14/07	02/14/07	EPA 300.0	
BH-2 55-57 (7B13003-20) Soil									
Chloride	28.3	5.00	mg/kg	10	EB71401	02/14/07	02/14/07	EPA 300.0	

Environmental Lab of Texas
A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 3 of 7

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: 6-0824
Project Manager: Cindy Crain

Fax: (432) 367-6747

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BH-2 60-62 (7B13003-21) Soil									
Chloride	22.8	5.00	mg/kg	10	EB71402	02/14/07	02/14/07	EPA 300.0	
BH-2 65-67 (7B13003-22) Soil									
Chloride	15.2	5.00	mg/kg	10	EB71402	02/14/07	02/14/07	EPA 300.0	

Environmental Lab of Texas
A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 4 of 7

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: 6-0824
Project Manager: Cindy Crain

Fax: (432) 367-6747

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EB71401 - General Preparation (WetChem)

Blank (EB71401-BLK1)

Prepared & Analyzed: 02/14/07

Chloride	ND	0.500	mg/kg							
----------	----	-------	-------	--	--	--	--	--	--	--

LCS (EB71401-BS1)

Prepared & Analyzed: 02/14/07

Chloride	10.5	0.500	mg/kg	10.0		105	80-120			
----------	------	-------	-------	------	--	-----	--------	--	--	--

Calibration Check (EB71401-CCV1)

Prepared & Analyzed: 02/14/07

Chloride	9.07		mg/kg	10.0		90.7	80-120			
----------	------	--	-------	------	--	------	--------	--	--	--

Duplicate (EB71401-DUP1)

Source: 7B13003-01

Prepared & Analyzed: 02/14/07

Chloride	6930	100	mg/kg		6890			0.579	20	
----------	------	-----	-------	--	------	--	--	-------	----	--

Duplicate (EB71401-DUP2)

Source: 7B13003-11

Prepared & Analyzed: 02/14/07

Chloride	546	10.0	mg/kg		545			0.183	20	
----------	-----	------	-------	--	-----	--	--	-------	----	--

Matrix Spike (EB71401-MS1)

Source: 7B13003-01

Prepared & Analyzed: 02/14/07

Chloride	9080	100	mg/kg	2000	6890	110	80-120			
----------	------	-----	-------	------	------	-----	--------	--	--	--

Matrix Spike (EB71401-MS2)

Source: 7B13003-11

Prepared & Analyzed: 02/14/07

Chloride	746	10.0	mg/kg	200	545	100	80-120			
----------	-----	------	-------	-----	-----	-----	--------	--	--	--

Batch EB71402 - General Preparation (WetChem)

Blank (EB71402-BLK1)

Prepared & Analyzed: 02/14/07

Chloride	ND	0.500	mg/kg							
----------	----	-------	-------	--	--	--	--	--	--	--

LCS (EB71402-BS1)

Prepared & Analyzed: 02/14/07

Chloride	10.5	0.500	mg/kg	10.0		105	80-120			
----------	------	-------	-------	------	--	-----	--------	--	--	--

Environmental Lab of Texas
A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 5 of 7

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: 6-0824
Project Manager: Cindy Crain

Fax: (432) 367-6747

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB71402 - General Preparation (WetChem)										
Calibration Check (EB71402-CCV1)				Prepared & Analyzed: 02/14/07						
Chloride	9.40		mg/kg	10.0		94.0	80-120			
Duplicate (EB71402-DUP1)				Source: 7B12001-01 Prepared & Analyzed: 02/14/07						
Chloride	87.5	5.00	mg/kg		88.8			1.47	20	
Duplicate (EB71402-DUP2)				Source: 7B13001-04 Prepared & Analyzed: 02/14/07						
Chloride	632	10.0	mg/kg		621			1.76	20	
Matrix Spike (EB71402-MS1)				Source: 7B12001-01 Prepared & Analyzed: 02/14/07						
Chloride	268	5.00	mg/kg	100	88.8	179	80-120			QM-07
Matrix Spike (EB71402-MS2)				Source: 7B13001-04 Prepared & Analyzed: 02/14/07						
Chloride	830	10.0	mg/kg	200	621	104	80-120			

Environmental Lab of Texas
A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 6 of 7

Ocotillo Environmental
2125 French Dr.
Hobbs NM, 88201

Project: Apache- Hawk A-5 #3
Project Number: 6-0824
Project Manager: Cindy Crain

Fax: (432) 367-6747

Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

2/14/07

Brent Barron, Laboratory Director/Corp. Technical Director
Celey D. Keene, Org. Tech Director
Raland K. Tuttle, Laboratory Consultant

James Mathis, QA/QC Officer
Jeanne Mc Murrey, Inorg. Tech Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas
A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 7 of 7

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Cindy Crain

Company Name: Ocotillo Environmental, LLC

Company Address: PO Box 1816

City/State/Zip: Hobbs, NM 88241

Telephone No: (505) 441-7244

Sampler Signature: Cindy Crain

Fax No: (432) 272-0304

e-mail: cindy_crain@gmail.com

Project Name: Apache Hawk A-5 #3

Project #: 6-0824

Project Loc: UL-0, Sec. 5, 21S, 37E

PO #:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)

ORDER #: 113008

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg S	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCl	N.O.R.M.			Standard TAT	RUSH TAT (Pre-Schedule 24, 48, 72 hrs)	
01	BH-1	15	17	2/12/07	1044		1									S																
02	BH-1	20	22	"	1050		1									S																
03	BH-1	25	27	"	1056		1									S																
04	BH-1	30	32	"	1102		1									S																
05	BH-1	35	37	"	1104		1									S																
06	BH-1	40	42	"	1107		1									S																
07	BH-1	45	47	"	1114		1									S																
08	BH-1	50	52	"	1119		1									S																
09	BH-1	55	57	"	1124		1									S																
10	BH-1	60	62	"	1225		1									S																

Special Instructions:

Rush - 24 hr TAT

Relinquished by:

Cindy Crain

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Relinquished by:

Cindy Crain

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Relinquished by:

Cindy Crain

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Relinquished by:

Cindy Crain

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Relinquished by:

Cindy Crain

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Relinquished by:

Cindy Crain

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Relinquished by:

Cindy Crain

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

**12600 West I-20 East
Odessa, Texas 79765**

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Cindy Crain

Project Name: Apache Hawk A-5 #3

Company Name Ocotillo Environmental, LLC

Project #: 6-0824

Company Address: PO Box 1816

Project Loc: UL-0, Sec. 5, 215 37E

City/State/Zip: Hobbs, NM 88241

PO #:

Telephone No: (505) 441-7244

Fax No: (432) 272-0304

Report Format:

☒ Standard ☐ TRRP

NPDES

Sampler Signature:

e-mail: cindy.crain@gmail.com

ORDER #:		FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Total #. of Containers	Preservation & # of Containers							Matrix	TCLP:						Analyze For:											
									Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Portable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT				
LAB # (lab use only)	BH-1			65	67	2/12/07	1246	1										S																
	BH-1			70	72	"	1252	1										S																
	BH-1			75	77	"	1256	1										S																
	BH-2 / "			80	82	"	1300	1										S																
	SS-15			24	26	1/31/07	0850	1										S																
	SS-17			30	30	1/31/07	1300	1										S																
	SS-20			40	40	1/31/07	1600	1										S																
	BH-2			45	47	2/12/07	1344	1										S																
	BH-2			50	52	"	1352	1										S																
	BH-2			55	57	"	1402	1										S																

Special Instructions:		Relinquished by:		Received by:	
Date	Signature	Date	Signature	Date	Signature
2/13/07	[Signature]	2/13/07	[Signature]		

Laboratory Comments:

Sample Containers Intact? ☒ Y ☐ N

VOCs Free of Headspace? ☒ Y ☐ N

Labels on container(s) ☒ Y ☐ N

Custody seals on container(s) ☒ Y ☐ N

Custody seals on cooler(s) ☒ Y ☐ N

Sample Hand Delivered ☒ Y ☐ N

by Carrier? ☒ UPS ☐ DHL ☐ FedEx ☐ Lone Star

Temperature Upon Receipt: 16.0 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Ocojillo Env.
 Date/ Time: 2/13/07 10:42
 Lab ID #: 183603
 Initials: CK

Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	Yes	No	16.0 ° C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont. Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

☐

See attached e-mail/ fax

☐

Client understands and would like to proceed with analysis

☐

Cooling process had begun shortly after sampling event

APPENDIX B

Soil Boring Logs

Client: Apache

Project: Hawk A-5 # 3

Project No.: 6-0824

Location: U.L.O, Sec. 5, T21S, R37E, Lea County, New Mexico

Log: BH-1

Page: 1 of 2

Geologist: Cindy Crain

SUBSURFACE PROFILE			SAMPLE			Field Chloride Data mg/kg	Laboratory Results
Depth	Symbol	Description	Number	Type	Recovery	0 1,500 3,000	
0		Ground Surface					
10		Inside excavated pit area at depth of 12' bgs.					
	Clayey Sand	Dark reddish brown, very fine grained, moderately well sorted, dry.					
			1	II		> 3,000	15-17' bgs Chloride: 6,890 mg/kg
20			2	II		> 3,000	20-22' bgs Chloride: 14,200 mg/kg
	Caliche	Pinkish white, fine to very fine grained, indurated, dry.	3	II		> 3,000	25-27' bgs Chloride: 10,600 mg/kg
30			4	II		> 3,000	30- 32' bgs Chloride: 8,880 mg/kg
			5	II		> 3,000	35 - 37' bgs Chloride: 9,140 mg/kg
40			6	II		> 3,000	40- 42' bgs Chloride: 8,160 mg/kg
			7	II		2,500	45- 47' bgs Chloride: 4,880 mg/kg
50							

Drill Method: Air Rotary

Drill Date: 02/12/07

Hole Size:

Ocotillo

2125 French Drive
Hobbs, New Mexico 88240
(505) 393-6371

Elevation: N/A

Checked by: CKC

Drilled by:
Scarborough Drilling

Client: Apache

Project: Hawk A-5 # 3

Project No.: 6-0824

Location: U.L.O, Sec. 5, T21S, R37E, Lea County, New Mexico

Log: BH-1

Page: 2 of 2

Geologist: Cindy Crain

SUBSURFACE PROFILE			SAMPLE			Field Chloride Data mg/kg	Laboratory Results
Depth	Symbol	Description	Number	Type	Recovery	0 1,500 3,000	
50		Caliche Pinkish white, fine to very fine grained, indurated, dry.	8	II		2,500	50 -52' bgs Chloride: 2,270 mg/kg
		Silty Sand Light tan quartz sand, fine grained, moderately well sorted, loose, dry.	9	II		1,620	55-57' bgs Chloride: 1,700 mg/kg
			10	II		1,500	60-62' bgs Chloride: 1,410 mg/kg
			11	II		750	65- 67' bgs Chloride: 545 mg/kg
			12	II		600	70 - 72' bgs Chloride: 402 mg/kg
			13	II		400	75- 77' bgs Chloride: 357 mg/kg
			14	II		250	80- 82' bgs Chloride: 196 mg/kg
		TD: 82'					
100							

Drill Method: Air Rotary

Drill Date: 02/12/07

Hole Size:

Ocotillo

2125 French Drive
Hobbs, New Mexico 88240
(505) 393-6371

Elevation: N/A

Checked by: CKC

Drilled by:
Scarborough Drilling

Client: Apache

Project: Hawk A-5 # 3

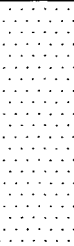
Project No.: 6-0824

Location: U.L.O, Sec. 5, T21S, R37E, Lea County, New Mexico

Log: BH-2

Page: 1 of 2

Geologist: Cindy Crain

SUBSURFACE PROFILE			SAMPLE			Field Chloride Data mg/kg 0 1,500 3,000	Laboratory Results
Depth	Symbol	Description	Number	Type	Recovery		
0		Ground Surface					
10		Inside excavated pit area at depth of 12' bgs.					
20		Clayey Sand Dark reddish brown, very fine grained, moderately well sorted, dry.					
30		Caliche Pinkish white, fine to very fine grained, indurated, dry.					
40							
50		Silty Sand Light tan quartz sand, fine grained, moderately well sorted, loose, dry.	1	II		• 550	45- 47' bgs Chloride: 721 mg/kg

Drill Method: Air Rotary

Drill Date: 02/12/07

Hole Size:

Ocotillo

2125 French Drive
Hobbs, New Mexico 88240
(505) 393-6371

Elevation: N/A

Checked by: CKC

Drilled by:
Scarborough Drilling

Client: Apache

Project: Hawk A-5 # 3

Project No.: 6-0824

Location: U.L.O, Sec. 5, T21S, R37E, Lea County, New Mexico

Log: BH-2

Page: 2 of 2

Geologist: Cindy Crain

SUBSURFACE PROFILE			SAMPLE			Field Chloride Data mg/kg	Laboratory Results
Depth	Symbol	Description	Number	Type	Recovery		
50		Silty Sand Light tan quartz sand, fine grained, moderately well sorted, loose, dry.	2	II			50 -52' bgs Chloride: 19.0 mg/kg 55-57' bgs Chloride: 28.3 mg/kg 60-62' bgs Chloride: 22.8 mg/kg 65- 67' bgs Chloride: 15.2 mg/kg
			3	II			
			4	II			
60		TD: 67'					
			5	II			
70							
80							
90							
100							

Drill Method: Air Rotary

Drill Date: 02/12/07

Hole Size:

Ocotillo

 2125 French Drive
 Hobbs, New Mexico 88240
 (505) 393-6371

Elevation: N/A

Checked by: CKC

 Drilled by:
 Scarborough Drilling