1R - 427-179

WORKPLANS

Date:
9-10-10

Rice Environmental Consulting & Safety
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CERTIFIED MAIL
RETURN RECIEPT NO. 7008 1140 0001 3072 4574

September 10th, 2010

Mr. Edward Hansen
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: **INVESTIGATION & CHARACTERIZATION PLAN**
Rice Operating Company – EME SWD System
EME B-21 boot (1R0427-179): UL/B, Sec. 21, T20S, R37E

Mr. Hansen:

RICE Operating Company (ROC) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site in the EME Salt Water Disposal (SWD) system. ROC is the service provider (agent) for the EME SWD System and has no ownership of any portion of the pipeline, well, or facility. The system is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage/usage basis. Environmental projects of this nature require System Party AFE approval prior to work commencing at the site. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission is greatly appreciated.

For all such environmental projects, ROC will choose the path forward that:

- Protects public health,
- Provides the greatest net environmental benefit,
- Complies with NMOCD Rules, and
- Is supported by good science.

Each site shall generally have three submissions:

1. This Investigation and Characterization Plan (ICP) is proposed for gathering data and site characterization and assessment.

2. Upon evaluating the data and results from the ICP, a recommended remedy will be submitted in a Corrective Action Plan (CAP) if warranted.

3. Finally, after implementing the remedy, a Termination Request with final documentation will be submitted.

Background and Previous Work

The site is located approximately 3 miles south of Monument, New Mexico at UL/B, Sec. 21, T20S, R37E as shown on the Site Location Map (Figure 1). NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 43 +/- feet.

In 2004, ROC initiated work on the former EME B-21 boot junction box prior to it being replaced by a new, watertight junction box at the site. The site was delineated using a backhoe and soil samples were screened at regular intervals for both hydrocarbons and chlorides. The excavation reached dimensions of 10 x 10 x 12 feet bgs where composite samples were collected for laboratory verification. Laboratory tests of the site showed evidence of gasoline range organics (GRO) measuring 408 mg/kg in the backfill, <10.0 mg/kg in the 4-wall composite, and 292 mg/kg for the bottom composite. Diesel range organics (DRO) measured 5380 mg/kg in the backfill, 351 mg/kg in the 4-wall composite, and 2940 mg/kg on the bottom composite. Chlorides at the site were negligible. The soils were blended on site and then backfilled into the excavation. The area was contoured to the surrounding landscape and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on June 6, 2005 and a junction box disclosure report (Appendix A) was submitted to NMOCD with all the 2005 junction box closures and disclosures.

ROC proposes additional investigative work at the site to determine if there is potential for groundwater degradation from residual chlorides and/or hydrocarbons at the site.

Proposed Work Elements

1. Conduct vertical and lateral delineation of residual soil hydrocarbons and chlorides (see Appendix B for Quality Procedures).
    a. Vertical sampling will be conducted until either one of the following criteria is met in the field.
        i. Three samples in which the chloride concentration decreases and the third sample has a chloride concentration of $\leq$ 250 ppm.
        ii. Three samples in which PID readings decrease and the third sample has a PID reading of $\leq$ 100 ppm.
        iii. The sampling reaches the capillary fringe.
2. If warranted, install a monitor well to provide direct measurement of the potential groundwater impact at the site. (All monitor wells will be installed by EPA, NMOCD, and industry standards.)
3. Evaluate the risk of groundwater impact based on the information obtained.

If the evaluation of the site shows no threat to groundwater from residual chlorides and/or hydrocarbons, then only a vadose zone remedy will be undertaken. However, if groundwater shows impact from residual chlorides and/or hydrocarbons, a CAP will be developed to address these concerns.

ROC appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-9174 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:

Figures – Site location map
Appendix A – Junction Box Disclosure Report
Appendix B – Quality Procedures

Figures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Site Location

RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

EME B-21 boot

Legals: UL/B sec. 21
T20S R37E
NMOCD Case #: 1R0427-179

FIGURE 1

N
W E
S

0 0.5 1 Miles

Drawing date: 7-1-10
Drafted by: L. Weinheimer

Appendix A

Junction Box Disclosure Report

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

RICE OPERATING COMPANY
JUNCTION BOX DISCLOSURE* REPORT

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length	Width	Depth
EME	Gilluly 'B' boot	A	21	20S	37E	Lea	moved 5 ft South		

LAND TYPE: BLM _____ STATE _____ FEE LANDOWNER S & W Cattle Co. OTHER _____

Depth to Groundwater 43 feet NMOCD SITE ASSESSMENT RANKING SCORE: 20

Date Started 9/9/2004 Date Completed 10/11/2004 NMOCD Witness no

Soil Excavated 55 cubic yards Excavation Length 10 Width 10 Depth 12-18 feet

Soil Disposed 0 cubic yards Offsite Facility n/a Location n/a

FINAL ANALYTICAL RESULTS: **Sample Date** 9/16/2004 **Sample Depth** 12-18 ft

5-point composite sample of bottom and 4-point composite sample of excavation sidewalls. TPH, BTEX, and chloride laboratory test results completed by using an approved laboratory and testing procedures pursuant to NMOCD guidelines.

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chloride mg/kg
4-WALL COMP.	XXX	XXX	XXX	XXX	<10.0	351	<20.0
BOTTOM COMP.	<0.025	<0.025	0.0554	0.2029	292	2940	138
REMED. BACKFILL	<0.025	<0.025	0.0284	0.0665	408	5380	95.7

General Description of Remedial Action:

This junction box contained a boot. The junction was moved 5 ft south of its former location with the pipeline replacement program. The former box site was delineated using a backhoe while chloride field tests and PID screenings were performed on soil samples at regular intervals, producing a 10 x 10 x 12-18 ft deep excavation. Although chloride concentrations were very low, PID readings were elevated and soils exhibited physical indications of hydrocarbon impact. Composite samples from the excavation confirmed that NMOCD TPH guidelines were not met. The excavated soil was blended on site and then backfilled back into the excavation. An identification plate has been placed on the surface at the site of the former box to mark the location for future environmental considerations. NMOCD has been notified of potential groundwater impact at this site. A new watertight junction box was built 5 ft south.

ADDITIONAL EVALUATION IS *HIGH* PRIORITY

enclosures: chloride graph, photos, lab results, PID field screenings, BTEX table

CHLORIDE FIELD TESTS

LOCATION	DEPTH (ft)	ppm
vertical trench at junction	5	262
	6	252
	7	198
	8	255
	9	224
	10	294
	11	265
	12	318
	13	392
4-wall comp.	n/a	141
bottom comp.	12-18	216
remed. backfill	n/a	252

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SITE SUPERVISOR Joe Gatts SIGNATURE not available COMPANY RICE Operating Company

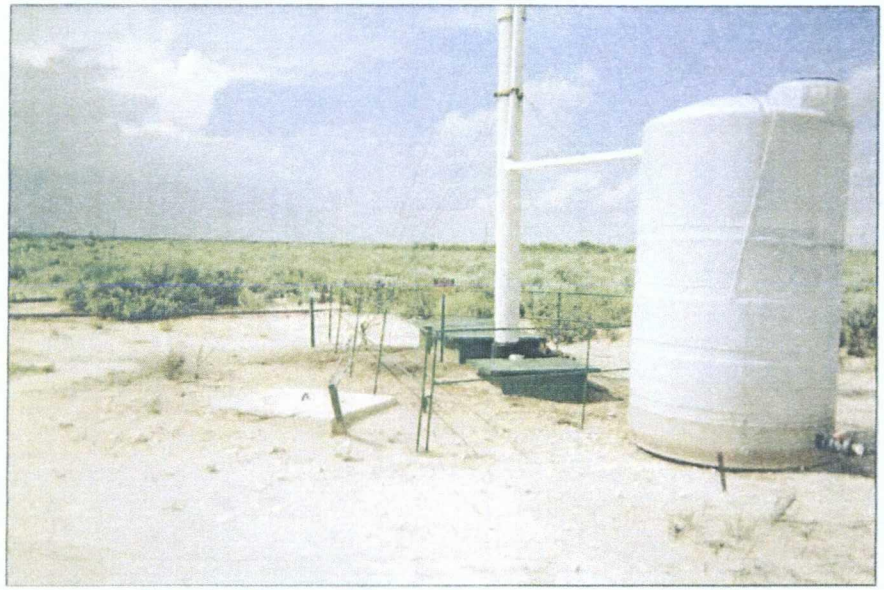
REPORT ASSEMBLED BY Kristin Farris Pope SIGNATURE Kristin Farris Pope

DATE 6/7/2005 TITLE Project Scientist

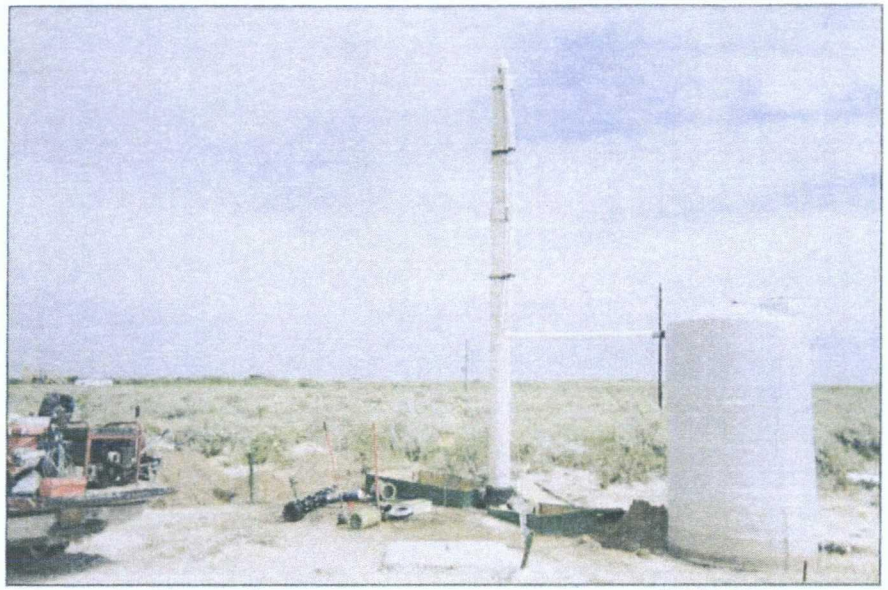
**** This site is a "DISCLOSURE." It will be placed on a prioritized list of similar sites for further consideration.***

EME Gilluly 'B' boot

unit 'A', sec. 16, T20S, R37E



undisturbed box and boot 8/17/2004



pipeline replacement 8/30/2004

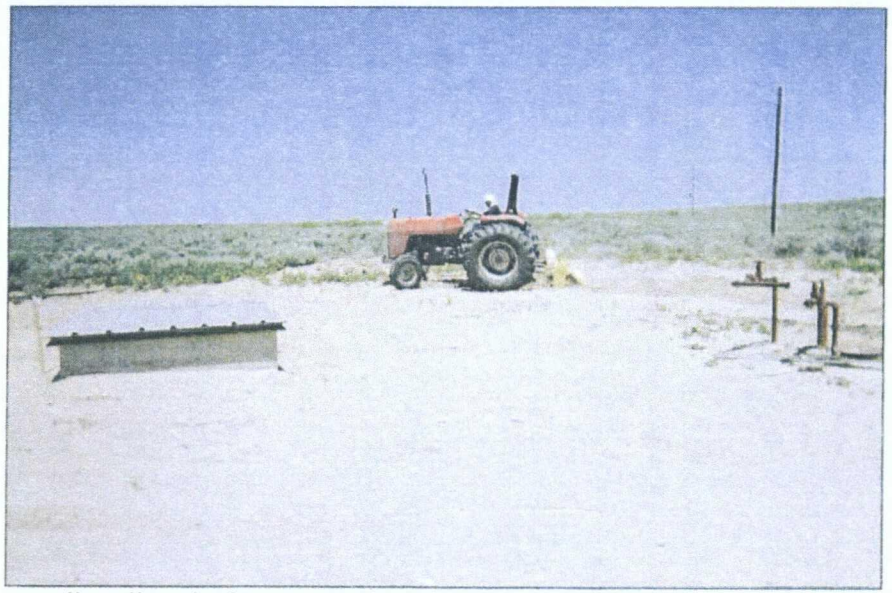
poly plumbing at new box site 5 ft south 8/30/2004

delineation & excavation at former box site 9/9/2004

backfilling 10 x 10 x 12-18 ft excavation 10/8/2004

backfilled site ready for box-building 10/11/2004

floor of new junction box 5 ft south 2/8/2005



seeding disturbed area; new junction box at left 5/9/2005

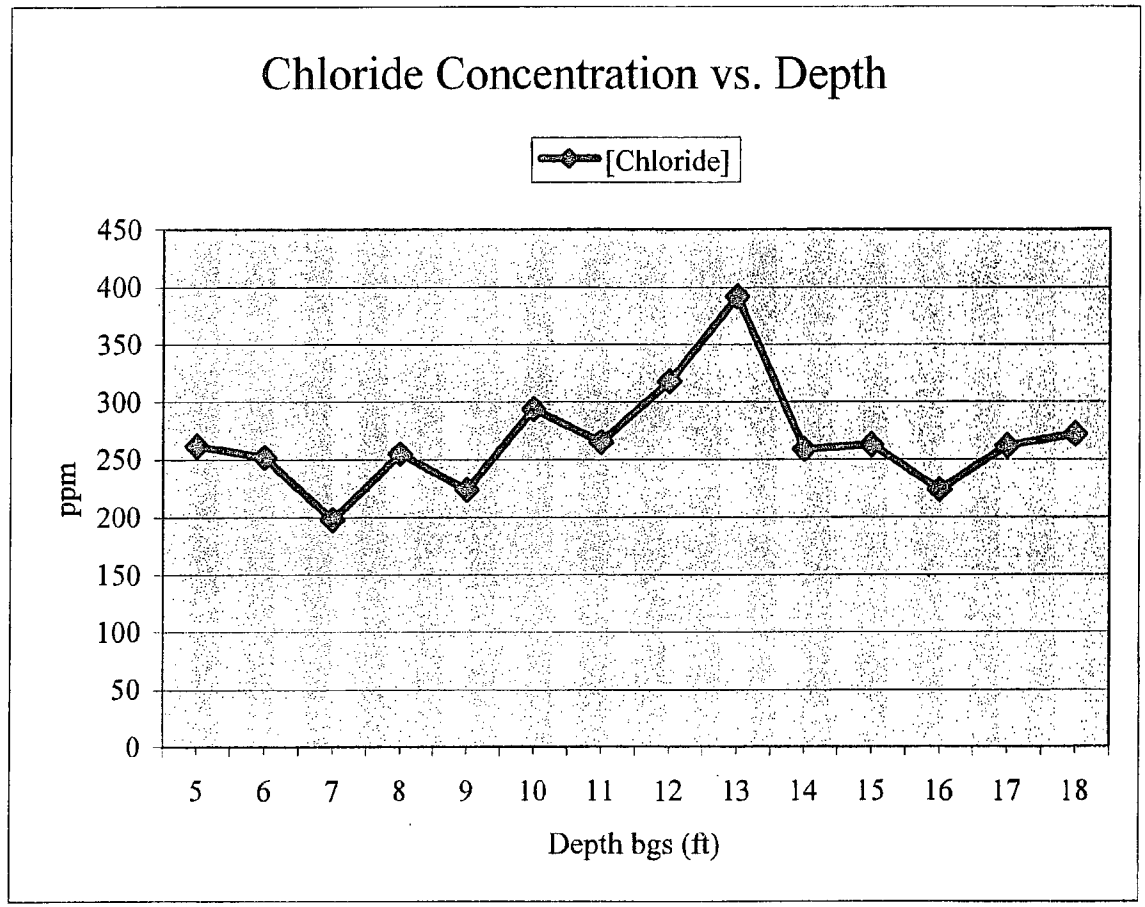
EME Gilluly 'B' boot

Unit 'A', Sec. 21, T20S, R37E

Vertical Delineation at Source

Depth bgs (ft)	[Cl⁻] ppm
5	262
6	252
7	198
8	255
9	224
10	294
11	265
12	318
13	392
14	259
15	263
16	224
17	262
18	272

Groundwater = 43 ft



2005 BTEX Study

Revised Junction Box Upgrade Plan (2003)

System: EME
Site: Gilluly 'B' boot
Date: 9/16/2004
Sampler: Joe Gatts
Laboratory: Environmental Lab of Texas

Location	Component Sample	PID reading (ppm)	FIELD COMPOSITE (mg/kg)			
			Benzene	Toluene	Ethyl Benzene	Total Xylenes
bottom composite at 12-18 ft BGS	1	16.9	<0.025	<0.025	0.554	0.2029
	2	150.0				
	3	331.0				
	4	363.0				
	5	34.3				
			LAB COMPOSITE (mg/kg)			
			<0.025	<0.025	0.0626	0.2368

Field PID tests <100 ppm are considered final for BTEX. If PID is >100 ppm, the components of the BTEX composite sample will be collected individually and will be composited under laboratory conditions to prevent excessive volatilization. A 15-box, 30-sample study will be made to compare field-compositing with lab-compositing BTEX samples. Composite components are collected in a skewed 'W' pattern.

Revised Junction Box Upgrade Work Plan (July 16, 2003)

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

COPY

Analytical Report

Prepared for:

Roy Rascon
Rice Operating Co.
122 W. Taylor
Hobbs, NM 88240

Project: EME Occidental Gillulley B
Project Number: None Given
Location: None Given

Lab Order Number: 4I26008

Report Date: 09/30/04

Rice Operating Co.	Project: EME Occidental Gillulley B	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	09/30/04 15:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Composite Bott. #1 thru #5 @ 12'	4I26008-01	Soil	09/16/04 13:00	09/26/04 07:10
Bott. Field Comp. @ 12'	4I26008-02	Soil	09/16/04 13:05	09/26/04 07:10
4 Wall Comp.	4I26008-03	Soil	09/16/04 13:15	09/26/04 07:10
Remediated Backfill	4I26008-04	Soil	09/16/04 13:30	09/26/04 07:10

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Rice Operating Co.	Project: EME Occidental Gillulley B	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	09/30/04 15:48

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Composite Bott. #1 thru #5 @ 12' (4I26008-01) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EI42810	09/27/04	09/27/04	EPA 8021B	
Toluene	**ND**	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.0626**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.171**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.0658**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*97.6 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*82.9 %*	*80-120*		"	"	"	"	
Bott. Field Comp. @ 12' (4I26008-02) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EI42810	09/27/04	09/28/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.0554**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.140**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.0629**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*95.3 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*80.6 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**292**	10.0	mg/kg dry	1	EI42702	09/27/04	09/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	**2940**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**3230**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*121 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*117 %*	*70-130*		"	"	"	"	
4 Wall Comp. (4I26008-03) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EI42702	09/27/04	09/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	**351**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**351**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*110 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*80.2 %*	*70-130*		"	"	"	"	

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Rice Operating Co.	Project: EME Occidental Gillulley B	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	09/30/04 15:48

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Remediated Backfill (4I26008-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EI42810	09/27/04	09/28/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.0284**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.0430**	0.0250	"	"	"	"	"	"	
Xylene (o)	**J [0.0235]**	0.0250	"	"	"	"	"	"	J
Surrogate: a,a,a-Trifluorotoluene		*97.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.8 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**408**	50.0	mg/kg dry	5	EI42702	09/27/04	09/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	**5380**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**5790**	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*18.6 %*	*70-130*		"	"	"	"	*S-06*
Surrogate: 1-Chlorooctadecane		*17.1 %*	*70-130*		"	"	"	"	*S-06*

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Rice Operating Co.	Project: EME Occidental Gillulley B	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	09/30/04 15:48

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Composite Bott. #1 thru #5 @ 12' (4I26008-01) Soil									
% Solids	**92.0**		%	1	EI42812	09/28/04	09/28/04	% calculation	
Bott. Field Comp. @ 12' (4I26008-02) Soil									
Chloride	**138**	20.0	mg/kg Wet	2	EI42703	09/27/04	09/28/04	SW 846 9253	
% Solids	**89.0**		%	1	EI42812	09/28/04	09/28/04	% calculation	
4 Wall Comp. (4I26008-03) Soil									
Chloride	ND	20.0	mg/kg Wet	2	EI42703	09/27/04	09/28/04	SW 846 9253	
% Solids	**98.0**		%	1	EI42812	09/28/04	09/28/04	% calculation	
Remediated Backfill (4I26008-04) Soil									
Chloride	**95.7**	20.0	mg/kg Wet	2	EI42703	09/27/04	09/28/04	SW 846 9253	
% Solids	**94.0**		%	1	EI42812	09/28/04	09/28/04	% calculation	

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Rice Operating Co.	Project: EME Occidental Gillulley B	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	Reported:
Hobbs NM, 88240	Project Manager: Roy Rascon	09/30/04 15:48

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI42702 - Solvent Extraction (GC)										
Blank (EI42702-BLK1)				Prepared & Analyzed: 09/27/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*51.5*		*mg/kg*	*50.0*		*103*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.1*		*"*	*50.0*		*72.2*	*70-130*			
Blank (EI42702-BLK2)				Prepared: 09/27/04 Analyzed: 09/28/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*58.8*		*mg/kg*	*50.0*		*118*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.2*		*"*	*50.0*		*72.4*	*70-130*			
LCS (EI42702-BS1)				Prepared & Analyzed: 09/27/04						
Gasoline Range Organics C6-C12	467	10.0	mg/kg wet	500		93.4	75-125			
Diesel Range Organics >C12-C35	469	10.0	"	500		93.8	75-125			
Total Hydrocarbon C6-C35	936	10.0	"	1000		93.6	75-125			
Surrogate: 1-Chlorooctane	*58.6*		*mg/kg*	*50.0*		*117*	*70-130*			
Surrogate: 1-Chlorooctadecane	*39.6*		*"*	*50.0*		*79.2*	*70-130*			
LCS (EI42702-BS2)				Prepared: 09/27/04 Analyzed: 09/28/04						
Gasoline Range Organics C6-C12	453	10.0	mg/kg wet	500		90.6	75-125			
Diesel Range Organics >C12-C35	543	10.0	"	500		109	75-125			
Total Hydrocarbon C6-C35	996	10.0	"	1000		99.6	75-125			
Surrogate: 1-Chlorooctane	*58.9*		*mg/kg*	*50.0*		*118*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.9*		*"*	*50.0*		*73.8*	*70-130*			
Calibration Check (EI42702-CCV1)				Prepared & Analyzed: 09/27/04						
Gasoline Range Organics C6-C12	499		mg/kg	500		99.8	80-120			
Diesel Range Organics >C12-C35	581		"	500		116	80-120			
Total Hydrocarbon C6-C35	1080		"	1000		108	80-120			
Surrogate: 1-Chlorooctane	*57.1*		*"*	*50.0*		*114*	*70-130*			
Surrogate: 1-Chlorooctadecane	*57.5*		*"*	*50.0*		*115*	*70-130*			

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Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI42702 - Solvent Extraction (GC)										
Calibration Check (EI42702-CCV2)				Prepared: 09/27/04 Analyzed: 09/28/04						
Gasoline Range Organics C6-C12	461		mg/kg	500		92.2	80-120			
Diesel Range Organics >C12-C35	527		"	500		105	80-120			
Total Hydrocarbon C6-C35	988		"	1000		98.8	80-120			
Surrogate: 1-Chlorooctane	*57.4*		*"*	*50.0*		*115*	*70-130*			
Surrogate: 1-Chlorooctadecane	*39.1*		*"*	*50.0*		*78.2*	*70-130*			
Matrix Spike (EI42702-MS1)		**Source: 4I26004-01**		Prepared: 09/27/04 Analyzed: 09/28/04						
Gasoline Range Organics C6-C12	521	10.0	mg/kg dry	532	ND	97.9	75-125			
Diesel Range Organics >C12-C35	602	10.0	"	532	ND	113	75-125			
Total Hydrocarbon C6-C35	1120	10.0	"	1060	ND	106	75-125			
Surrogate: 1-Chlorooctane	*58.7*		*mg/kg*	*50.0*		*117*	*70-130*			
Surrogate: 1-Chlorooctadecane	*57.0*		*"*	*50.0*		*114*	*70-130*			
Matrix Spike (EI42702-MS2)		**Source: 4I26005-04**		Prepared: 09/27/04 Analyzed: 09/28/04						
Gasoline Range Organics C6-C12	555	10.0	mg/kg dry	575	ND	96.5	75-125			
Diesel Range Organics >C12-C35	607	10.0	"	575	ND	106	75-125			
Total Hydrocarbon C6-C35	1160	10.0	"	1150	ND	101	75-125			
Surrogate: 1-Chlorooctane	*60.2*		*mg/kg*	*50.0*		*120*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.1*		*"*	*50.0*		*72.2*	*70-130*			
Matrix Spike Dup (EI42702-MSD1)		**Source: 4I26004-01**		Prepared: 09/27/04 Analyzed: 09/28/04						
Gasoline Range Organics C6-C12	521	10.0	mg/kg dry	532	ND	97.9	75-125	0.00	20	
Diesel Range Organics >C12-C35	570	10.0	"	532	ND	107	75-125	5.46	20	
Total Hydrocarbon C6-C35	1090	10.0	"	1060	ND	103	75-125	2.71	20	
Surrogate: 1-Chlorooctane	*57.2*		*mg/kg*	*50.0*		*114*	*70-130*			
Surrogate: 1-Chlorooctadecane	*53.5*		*"*	*50.0*		*107*	*70-130*			
Matrix Spike Dup (EI42702-MSD2)		**Source: 4I26005-04**		Prepared: 09/27/04 Analyzed: 09/28/04						
Gasoline Range Organics C6-C12	552	10.0	mg/kg dry	575	ND	96.0	75-125	0.542	20	
Diesel Range Organics >C12-C35	621	10.0	"	575	ND	108	75-125	2.28	20	
Total Hydrocarbon C6-C35	1170	10.0	"	1150	ND	102	75-125	0.858	20	
Surrogate: 1-Chlorooctane	*62.0*		*mg/kg*	*50.0*		*124*	*70-130*			
Surrogate: 1-Chlorooctadecane	*35.8*		*"*	*50.0*		*71.6*	*70-130*			

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI42810 - EPA 5030C (GC)										
Blank (EI42810-BLK1)			Prepared & Analyzed: 09/27/04							
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*99.3*		*ug/kg*	*100*		*99.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*88.9*		"	*100*		*88.9*	*80-120*			
LCS (EI42810-BS1)			Prepared & Analyzed: 09/27/04							
Benzene	99.3		ug/kg	100		99.3	80-120			
Toluene	101		"	100		101	80-120			
Ethylbenzene	94.0		"	100		94.0	80-120			
Xylene (p/m)	210		"	200		105	80-120			
Xylene (o)	97.0		"	100		97.0	80-120			
Surrogate: a,a,a-Trifluorotoluene	*112*		"	*100*		*112*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*96.7*		"	*100*		*96.7*	*80-120*			
Calibration Check (EI42810-CCV1)			Prepared: 09/27/04 Analyzed: 09/28/04							
Benzene	102		ug/kg	100		102	80-120			
Toluene	100		"	100		100	80-120			
Ethylbenzene	89.2		"	100		89.2	80-120			
Xylene (p/m)	199		"	200		99.5	80-120			
Xylene (o)	94.3		"	100		94.3	80-120			
Surrogate: a,a,a-Trifluorotoluene	*118*		"	*100*		*118*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*91.1*		"	*100*		*91.1*	*80-120*			
Matrix Spike (EI42810-MS1)	**Source: 4I24005-01**		Prepared: 09/27/04 Analyzed: 09/28/04							
Benzene	95.6		ug/kg	100	ND	95.6	80-120			
Toluene	96.7		"	100	ND	96.7	80-120			
Ethylbenzene	89.6		"	100	ND	89.6	80-120			
Xylene (p/m)	199		"	200	ND	99.5	80-120			
Xylene (o)	92.0		"	100	ND	92.0	80-120			
Surrogate: a,a,a-Trifluorotoluene	*110*		"	*100*		*110*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*94.7*		"	*100*		*94.7*	*80-120*			

Rice Operating Co.	Project: EME Occidental Gillulley B	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	09/30/04 15:48

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI42810 - EPA 5030C (GC)										
Matrix Spike Dup (EI42810-MSD1)	**Source: 4I24005-01**			Prepared: 09/27/04 Analyzed: 09/28/04						
Benzene	98.1		ug/kg	100	ND	98.1	80-120	2.58	20	
Toluene	99.6		"	100	ND	99.6	80-120	2.95	20	
Ethylbenzene	93.1		"	100	ND	93.1	80-120	3.83	20	
Xylene (p/m)	208		"	200	ND	104	80-120	4.42	20	
Xylene (o)	97.2		"	100	ND	97.2	80-120	5.50	20	
Surrogate: a,a,a-Trifluorotoluene	*118*		"	*100*		*118*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*93.9*		"	*100*		*93.9*	*80-120*			

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME Occidental Gillulley B	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	09/30/04 15:48

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 EI42703 - Water Extraction										
Blank (EI42703-BLK1)				Prepared: 09/27/04 Analyzed: 09/28/04						
Chloride	ND	20.0	mg/kg Wet							
Matrix Spike (EI42703-MS1)		Source: 4I26001-01		Prepared: 09/27/04 Analyzed: 09/28/04						
Chloride	744	20.0	mg/kg Wet	500	266	95.6	80-120			
Matrix Spike Dup (EI42703-MSD1)		Source: 4I26001-01		Prepared: 09/27/04 Analyzed: 09/28/04						
Chloride	755	20.0	mg/kg Wet	500	266	97.8	80-120	1.47	20	
Reference (EI42703-SRM1)				Prepared & Analyzed: 09/28/04						
Chloride	5000		mg/kg	5000		100	80-120			
Batch EI42812 - % Solids										
Blank (EI42812-BLK1)				Prepared & Analyzed: 09/28/04						
% Solids	100		%							
Duplicate (EI42812-DUP1)		Source: 4I24018-01		Prepared & Analyzed: 09/28/04						
% Solids	98.0		%		98.0			0.00	20	

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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
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: Celey D. Keene Date: 10/01/04

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Biezugbe, Lab Tech.

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Roy Rascon
Company Name: Rice Operating
Company Address: 122 W. Taylor
City/State/Zip: Hobbs NM 88240
Telephone No: 505 393-9174
Sampler Signature: for Gott

Project Name: EME Occidental Gillulley
Project #:
Project Loc:
PO #: 510

Fax No:

LAB # (lab use only): 426008

FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl	NaOH	H2SO4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TCLP: TOTAL: TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	STEX 8021B/5030	RUSH TAT (Pre-Scheduled)	Standard TAT
Gott #1 at 12'	9/16/04	1:00	1	X									X								
-01 Gott #2 at 12'	9/16/04	1:00	1	X									X						X		
Gott #3 at 12'	9/16/04	1:00	1	X									X								
Gott #4 at 12'	9/16/04	1:00	1	X									X								
Gott #5 at 12'	9/16/04	1:00	1	X									X								
-02 Gott Field Comp at 12'	9/16/04	1:05	1	X									X		X				X		
-03 4 WALL COMP	9/16/04	1:15	1	X									X		X						
-04 REMEDIATED BACKFILL	9/16/04	1:30	1	X									X		X				X		

Special Instructions:
Composite Gott #1 #2, #3, #4, #5 + nm BTEX only

Relinquished by:	Date	Time	Received by:	Date	Time
	9/24/04	4:30			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
Drop Box	09-26-04	0710		09-26-04	0710

Sample Containers Intact? (Y) N
Temperature Upon Receipt: -2.5 C
Laboratory Comments:

RICE OPERATING COMPANY

122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471

VOC FIELD TEST REPORT FORM

MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
SERIAL NO: 104412
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE 100 PPM
AIR BALANCE
LOT NO: 02-22-30 FILL DATE: 5/20/03
EXP. DATE: 11/20/04 ACCURACY: + or - 2%
METER READING
ACCURACY: 100-1

bottom
12-18 ft
KP

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
EME	Oxy Gillulley B'	A ~~A~~ RRR	16	22	36

SAMPLE	PID RESULT	SAMPLE	PID RESULT
Bottom #1 12'	16.9		
Bottom #2 12'	150		
Bottom #3 12'	331		
Bottom #4 12'	363		
Bottom #5 12'	34.3		
Bott Comp 12'	197		
5' N. WALL	75.3		
5' S WALL	24.6		
5' E. WALL	8.7		
5' W. WALL	16.1		

ind. components of bottom comp. for BTEX study

5-pt. Composite

5-pt composites on each wall

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Joe Batt — Signature
Environmental Tech. — Title
9/16/04 — Date

Appendix B
Quality Procedures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Rice Environmental Consulting and Safety

Quality Procedures

Table of Contents

Rice Environmental Consulting and Safety

Quality Procedure
Soil Samples for Transportation to a Laboratory

1.0 Purpose

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

2.0 Scope

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

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the soil.

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

4.0 Chain of Custody

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

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

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

5.0 Sampling Procedure

5.1 Do not touch the soil with your bare hands. Use new nitrile gloves to help minimize any contamination.

5.2 Go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to obtain the soil.

5.3 Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label.

5.4 Place the sample directly on ice for transport to the laboratory if required.

5.5 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

6.0 Documentation

6.1 The testing laboratory shall provide the following minimum information:

a. Project and sample name.
b. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
c. Results of the requested analyses
d. Test Methods employed
e. Quality Control methods and results

Rice Environmental Consulting and Safety

QUALITY PROCEDURE
Chloride Titration Using
0.282 Normal Silver Nitrate Solution

1.0 Purpose

This procedure is to be used to determine the concentration of chloride in soil.

2.0 Scope

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

3.0 Sample Collection and Preparation

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

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

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

4.0 Sample Preparation

4.1 Tare a clean glass vial having a minimum 40 ml capacity. Add at least 10 grams of the soil sample and record the weight.

4.2 Add at least 20 grams of reverse osmosis water to the soil sample and shake well.

4.3 Allow the sample to set for a period of 5 minutes or until the separation of soil and water.

5.0 Titration Procedure

5.1 Using a graduated pipette, remove 10 ml extract and dispense into a clean plastic cup.

5.2 Add 2-3 drops potassium chromate (K_2CrO_4) to mixture if necessary.

5.3 Using a 1 ml pipette, carefully add .282 normal silver nitrate (one drop at a time) to the sample while constantly agitating it. Stop adding silver nitrate when the solution begins to change from yellow to red. Be consistent with endpoint recognition.

5.4 Record the ml of silver nitrate used.

6.0 Calculation

To obtain the chloride concentration, insert measured data into the following formula:

$$\frac{.282 \times 35.450 \times \text{ml } AgNO_3}{\text{ml water extract}} \times \frac{\text{grams of water in mixture}}{\text{grams of soil in mixture}}$$

Using Step 5.0, determine the chloride concentration of the RO water used to mix with the soil sample. Record this concentration and subtract it from the formula results to find the net chloride in the soil sample.

Record all results on the delineation form.

Rice Environmental Consulting and Safety

Quality Procedure
Development of Cased Water-Monitoring Wells

1.0 Purpose

This procedure outlines the methods to be employed to develop cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

3.0 Sample Collection and Preparation

3.1 Prior to development, the static water level and height of the water column within the well casing will be measured with the use of an electric D.C. probe.

3.2 All measurements will be recorded within a field log notebook.

3.3 All equipment used to measure the static water level will be decontaminated after each use by means of Liquinox, a phosphate free laboratory detergent, and water to reduce the possibility of cross-contamination. The volume of water in each well casing will be calculated.

4.0 Purging

4.1 Wells will be purged by using a 2" decontaminated submersible pump or dedicated one liter Teflon bailer. Wells should be purged until the pH and conductivity are stabilized and the turbidity has been reduced to the greatest extent possible.

4.2 If a submersible is used the pump will be decontaminated prior to use by scrubbing the outside surface of tubing and wiring with a Liquinox water mixture, pumping a Liquinox-water mixture through the pump, and a final flush with fresh water.

5.0 Water Disposal

5.1 All purge and decontamination water will be temporarily stored within a portable tank to be later disposed of in an appropriate manner.

6.0 Records

6.1 Rice Environmental Consulting and Safety will record the amount of water removed from the well during development procedures. The purge volume will be reported to the appropriate regulatory authority when filing the closure report.

Rice Environmental Consulting and Safety

Quality Procedure
Sampling of Cased Water-Monitoring Well

1.0 Purpose

This procedure outlines the methods to be employed in obtaining water samples from cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the water.

3.2 The following table shall be used to select the appropriate sampling container, preservative method and holding times for the various elements and compounds to be analyzed.

Compound to be Analyzed	Sample Container Size	Sample Container Description	Cap Requirements	Preservative	Maximum Hold Time
BTEX	40 ml	VOA Container	Teflon Lined	HCL	14 days
TPH (8015 Extended)	40 ounces	(2) 40ml VOA vials	Teflon Lined	HCL and Ice	14 days
PAH	1 liter	amber glass	Teflon Lined	Ice	7 days
Cation/Anion	1 liter	HD polyethylene	Any Plastic	None	48 Hrs
Metals	1 liter	HD polyethylene	Any Plastic	Ice/HNO_3	28 Days
TDS	300 ml	clear glass or 250 ml HD polyethylene	Any Plastic	Ice	7 Days
Cl-	500 ml	HD polyethylene	Any Plastic	None	28 Days

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the well identification and the individual tests to be performed at that location. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

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

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

5.0 Bailing Procedure

5.1 Identify the well from the sites schematics. Place pre-labeled jar(s) next to the well. Remove the plastic cap from the well bore by first lifting the metal lever and then unscrewing the entire assembly.

5.2 Using a dedicated one liter Teflon bailer or submersible pump, purge a minimum of three well volumes. Place the water in storage container for transport to a ROC disposal facility.

5.3 If using a bailer, take care to insure that the bailing device and string does not become cross-contaminated. A clean pair of nitrile gloves should be used when handling either the retrieval string or bailer. The retrieval string should not be allowed to come into contact with the ground.

6.0 Sampling Procedure

6.1 Once the well has been bailed in accordance with 5.2 of this procedure, a sample may be decanted into the appropriate sample collection jar directly from the bailer or submersible pump.

6.2 Note the time of collection on the sample jar with a fine Sharpie.

6.3 Place the sample directly on ice for transport to the laboratory. The preceding table shows the maximum hold times between collection and testing for the various analyses.

6.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

7.0 Documentation

7.1 The testing laboratory shall provide the following minimum information:

A. Project and sample name.
B. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
C. Results of the requested analyses
D. Test Methods employed
E. Quality Control methods and results

Calculation for Determining the Minimum Bailing Volume for Monitor Wells
Formula $V = (\pi r^2 h)$
2" well [V/231=gal] X 3 = Purge Volume

V=Volume
π=pi
r=inside radius of the well bore
h=maximum height of well bore in water table

Example:

π	r^2	h(in)	V(cu.in)	V(gal)	X 3 Volumes	Actual
3.1416	1	180	565.488	2.448	7.34 gal	>10 gal

Rice Environmental Consulting and Safety

Quality Procedure
Composite Sampling of Excavation Sidewalls and Bottoms For TPH and Chloride Analysis

1.0 Purpose

This procedure outlines the methods to be employed when obtaining final composite soil samples for TPH and Chloride analysis.

2.0 Scope

This procedure is to be used in conjunction with ***Quality Procedure – 02: Soil Samples for Transportation to a Laboratory*** and will be inserted at subparagraph 5.2 of Section 5.0: Sampling Procedure.

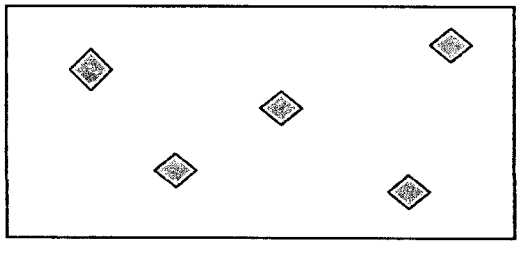
3.0 Sampling Procedure

Follow ***Quality Procedure – 02: Soil Samples for Transportation to a Laboratory*** for all Sections and subparagraphs until subparagraph 5.2 of Section 5.0: Sampling Procedure. Instead of 5.2 instructions, perform the composite sample collection procedure as follows:

3.1 Go to the excavation with a new plastic baggie. If not analyzing for ions or metals, use a trowel to obtain the soil. If the excavation is deeper than 6' BGS, do not enter the pit, but use a backhoe to assist in procurement of the sample. (If a backhoe is used, the backhoe will obtain an amount of soil from each composite point; bring the purchase to the surface staging area where a sample-portion of soil will be extracted from the backhoe purchase. The remainder of the backhoe purchase will be staged on the surface with other staged soils.)

3.2 Sidewall samples

3.2.1 On each sidewall, procure a 5oz sample from each of five distinct points on the sidewall with distinct points resembling the "W" pattern:



3.2.2 Thoroughly blend these five samples in a labeled baggie.
3.2.3 Repeat steps 3.2.1 through 3.2.4 for each remaining sidewall.
3.2.4 From each labeled baggie, procure a 5 oz portion and pour into a baggie labeled "Sidewall Composite". Blend this soil mixture completely.
3.2.5 Obtain proper laboratory sample container for "Sidewall Composite" and continue with subparagraph 5.3 of QP – 01.

3.3 Bottom Sample
3.3.1 From bottom of excavation, procure a 5oz sample from each of five distinct points with distinct points resembling the "W" pattern as illustrated above.
3.3.2 Thoroughly blend these five samples in a clean baggie.
3.2.3 Obtain proper laboratory sample container for "Bottom Composite" and continue with subparagraph 5.3 of QP – 01.

Rice Environmental Consulting and Safety

QUALITY PROCEDURE
Sampling and Testing Protocol for VOC in Soil

1.0 Purpose

This procedure is to be used to determine the concentrations of Volatile Organic Compounds in soils.

2.0 Scope

This procedure is to be used as the standard field measurement for soil VOC concentrations. It is not to be used as a substitute for full spectrographic speciation of organic compounds.

3.0 Procedure

3.1 Sample Collection and Preparation

3.1.1 Collect at least 500 g. of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample of soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).

3.1.2 The soil sample(s) shall be immediately inserted into a one-quart or larger polyethylene freezer bag and sealed. When sealed, the bag should contain a nearly equal space between the soil sample and trapped air. Record the sample name and the time that the sample was collected on the Field Analytical Report Form.

3.1.3 The sealed samples shall be allowed to set for a minimum of five minutes at a temperature of between 10-15 Celsius, (59-77^{0}F). The sample temperatures may be adjusted by cooling the sample in ice, or by heating the sample within a generally controlled environment such as the inside of a vehicle. The samples should not be placed directly on heated surfaces or placed in direct heat sources such as lamps or heater vents.

3.1.4 The sealed sample bag should be massaged to break up any clods, and to provide the soil sample with as much exposed surface area as practically possible.

3.2 Sampling Procedure

3.2.1 The instrument to be used in conducting VOC concentration testing shall be a RAE Systems Photoionization device. (Device will be identified on VOC Field Test Report Form.) Prior to use, the instrument shall be zeroed-out in accordance with the appropriate maintenance and calibration procedure outlined in the instrument operation manual. The PID device will be calibrated each day it's used.

3.2.2 Carefully open one end of the collection bag and insert the probe tip into the bag taking care that the probe tip not touch the soil sample or the sidewalls of the bag.

3.2.3 Set the instrument to retain the highest result reading value. Record the reading onto the Field Test Report Form.

3.2.4 **If the instrument provides a reading exceeding 100 ppm, proceed to QP-7. If the reading is 100 ppm or less, NMOCD BTEX guideline has been met and no further testing for BTEX is necessary. File the Field Test Report Form in the project file.**

4.0 Clean-up

After testing, the soil samples shall be returned to the sampling location, and the bags collected for off-site disposal. **IN NO CASE SHALL THE SAME BAG BE USED TWICE. EACH SAMPLE CONTAINER MUST BE DISCARDED AFTER EACH USE.**

Rice Environmental Consulting and Safety

Quality Procedure
Composite Sampling of Excavation Sidewalls and Bottoms For BTEX

1.0 Purpose

This procedure outlines the methods to be employed when obtaining final composite soil samples for BTEX analysis.

2.0 Scope

This procedure is to be used when collecting soil samples intended for ultimate transfer to a testing laboratory for BTEX analysis. This procedure is to be used only when the PID field-test results for OVM exceeds 100 ppm.

3.0 Preliminary

3.1 Obtain sterile, clear, 2 oz. glass containers with Teflon lid from a laboratory supply company or the testing laboratory designated to conduct analyses of the soil.

4.0 Chain of Custody

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

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

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

5.0 Sampling Procedure

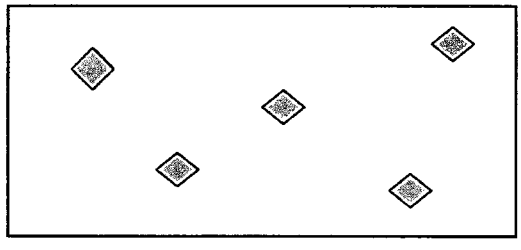
5.1.Do not touch the soil with your bare hands. Use new nitrile gloves to help minimize any cross-contamination.

5.2.If safe and within OSHA regulations, go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to

obtain the soil. If the excavation is deeper than 6' BGS, do not enter the pit, but use a backhoe to assist in procurement of the sample. (If a backhoe is used, the backhoe will obtain an amount of soil from each composite point; bring the purchase to the surface staging area where a sample-portion of soil will be extracted from the backhoe purchase. The remainder of the backhoe purchase will be staged on the surface with other staged soils.)

5.3. Sidewall Samples

5.3.1. On each sidewall, procure a 2oz sample from each of five distinct points on the sidewall with distinct points resembling the "W" pattern:



5.4. Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label. Repeat for each sampling point.

5.5. Place the samples directly on ice for transport to the laboratory if required.

5.6. Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

6.0 Documentation

6.1 The testing laboratory shall provide the following minimum information:

a. Project and sample name.
b. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
c. Results of the requested analyses
d. Test Methods employed
e. Quality Control methods and results

Rice Environmental Consulting and Safety

Procedure for Plugging & Abandonment of Cased Water Monitoring Wells

1.0 Purpose

This procedure outlines the methods to be employed to plug and abandon cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells located in the State of New Mexico

3.0 Preliminary

3.1 No well may be drilled, modified or plugged without NMOCD approval. Additional approvals may be required if the well is situated in a sensitive area, within municipal jurisdictions or on federal or tribal lands.

4.0 Plugging

4.1 Each bore will be filled with a 1% - 3% bentonite/concrete slurry to three feet bgs. The remaining three feet will be capped with concrete only.

4.2 All wellheads will be removed to below ground surface.

6.0 Records

6.1 The company plugging the well shall prepare a report on their company letter head listing the site name and describing general well construction including total depth of the well, the diameter of casing, material used to plug the well (e.g. bentonite/cement slurry), and date of the plugging operation.

6.2 It is recommended but not required that photographs of the final surface restoration be taken and included within the records.

6.3 Copies of the plugging report shall be submitted to all appropriate agencies and retained by the well operator for a minimum period of ten years.