Shell Exploration & Production

State of New Mexico
Energy, Minerals and Natural Resources Dept.
Oil Conservation Division-District 4
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
Attn.: Ed Martin, District Supervisor

Shell Exploration & Production Co.
Regulatory Affairs-EP Americas
4582 S. Ulster Street Parkway
Suite 1400
Denver, Colorado 80237

March 13, 2012

Subject: Notice of Completion Pit Closure and Interim Reclamation
Shell Exploration & Production Co., Latigo Ranch 2-34 (API No. 30-019-20136)
Guadalupe County, New Mexico

Dear Mr. Martin:

Shell Exploration & Production Company (Shell), as service provider to SWEPI LP in New Mexico, is submitting a Pit Closure Report (including Form C-144) to detail completion pit closure activities and interim reclamation conducted for the subject well, to New Mexico Oil Conservation Division-District 4 (OCD) for your review and approval.

If you have any questions or require any additional information regarding these reports, please contact me at (303) 222-6347, or David Janney at AMEC in Albuquerque at (505) 821-1801.

Regards,

Michael L. Bergstrom
Senior Regulatory Advisor
Shell Exploration & Production Company

Attachments: Completion Pit Closure Report
Form C-144

November 2, 2011

Mr. Michael L. Bergstrom
Shell Exploration & Production Co.
4582 S. Ulster Pkwy., Suite 1400
Denver, CO 80237

Subject: Latigo Ranch 2-34 Gas Well Completion Pit Closure Report
Singleton Properties, LLC Lease
Cuervo, Guadalupe County, New Mexico

Dear Mr. Bergstrom:

AMEC Environment and Infrastructure (AMEC) is submitting this report for the closure of the completion pit at the Latigo Ranch 2-34 natural gas well (API # 3001920136) located in Section 34; Township 11 N; Range 23 East of Guadalupe County, New Mexico (Figure 1). This wildcat gas well was completed and ready for flow testing on September 17, 2009. This report was prepared in accordance with guidelines published in New Mexico Administrative Code 19.15.17.13 and includes a brief description of the pit closure process, pit contents and pit liner removal procedures, soil sampling procedures conducted by AMEC following removal of the liner, and backfilling procedures.

SCOPE OF WORK

The scope of work described below was conducted in accordance with the New Mexico Administrative Code 19.15.17.13 and the OCD guidance document *New Mexico Pit Closure Plan.* The scope of work for the pit closure included:

- Removal of fluid and drilling mud in the lined pit;
- Removal of the 30 mil HDPE pit liner;
- Transport and disposal of drilling completions and flow-back fluids, drilling mud , and pit liner;
- Removal, transport, and disposal of approximately five cubic yards of soil from the bottom of the excavation that was incidental to the liner removal process;
- Collection, chloride field test kit, and laboratory analysis of samples from the excavation bottom;
- Backfilling to grade and contouring with the surrounding topography; and

- Reporting the results of the closure in this report.

FIELD ACTIVITIES

Robinson Construction Group (Robinson) began removing the fluids from the pit on November 29, 2010 (Appendix A, Photos 1-3). Robinson removed approximately 400 barrels of fluid (16,800 gallons), 35 cubic yards of mud contained in the liner, and approximately five cubic yards of soil was removed beneath the liner as part of the liner removal process. Robinson completed these removals on November 30, 2010 (Appendix A, Photos 4-6). Fluid was removed and transported in vacuum trucks and the mud, liner and soil were transported in end dump trucks to the Gandy-Marley Inc. (GMI) oil-field waste disposal facility located in Tatum, New Mexico (facility ID # NM 711-1-0020) for proper disposal.

During and following liner removal, no visible indications of a breech were observed in the liner material. No wet areas were observed beneath the liner. Inspection of the excavation indicated that only soil, not bedrock, was exposed in the excavation bottom.

On December 1, 2010, after liner removal, AMEC collected a five-point composite soil sample from the bottom of the pit (Appendix A, Photos 7-11). The five-point composite sample was collected from each corner and the center of the excavation and is depicted on Figure 2. Approximately four ounces of soil from each of the five points was placed into a one-gallon zip-lock bag and the contents were thoroughly mixed. The samples for laboratory analysis were removed from the zip-lock bag and placed into two properly labeled 4-ounce glass sample jars. The sample jars were placed in a cooler with ice and transported under chain-of-custody to Hall Analytical Laboratory (Hall) in Albuquerque, New Mexico. The samples were analyzed for diesel (DRO), gasoline (GRO) and motor oil range organics (MRO), benzene, toluene, ethyl benzene, xylenes, and chloride. In addition to submitting the samples for laboratory analysis, AMEC also removed 20 grams of soil from the five-point composite sample and analyzed 10 grams using the Hach "Quantab" Chloride Field Test Kit # 2744940 (Low Range 30-600 parts per million (ppm) Cl) and 10 grams using the test kit # 2751340 (High Range 300-6000 ppm Cl).

According to the Hach guidelines, the soil for field test kit analysis was placed into 100 milliliters of hot water for 90 minutes before reading the colorimetric strips. The Low-Range Quantab indicated the chloride concentration in the sample was 81 ppm and the Hi-Range Quantab indicated the chloride concentration was less than 287 ppm.

The chloride laboratory analytical result for the five-point composite sample was 490 ppm. No organic compounds were detected in the sample. The laboratory analytical results are summarized in Table 1 and the laboratory analytical sheets are included in Appendix B.

Mr. Ed Martin, of the New Mexico Oil Conservation Division (OCD), was contacted via telephone and informed of the analytical results. Mr. Martin agreed that the excavation could be backfilled and compacted without any further action. Robinson completed the

backfill, compaction, and contouring on December 11, 2010 (Appendix A, Photos 12-14) and the contoured pit will be reseeded in 2012. The expected application of the prescribed seed mix will be 8-12 pounds pure live seed per acre and it will be applied with a mechanical seed drill and as necessary hand broadcast in areas with restricted machinery access. The OCD Form C-144 is included in Appendix C. Robinson returned the GMI disposal load tickets directly to Shell Exploration and Production Company.

DISCUSSION

The results of laboratory analytical results indicated that petroleum hydrocarbon and chloride concentrations were below the applicable regulatory limits; therefore, the pit closure described above is protective of human health and the environment.

The initial Hach chloride field test kit results were not consistent with the chloride concentrations in the laboratory samples and the difference between the field test kit results and the laboratory results were greater than one order of magnitude. Chloride field test kit results for this location are suspect; possibly due to the fine-grained clay being analyzed.

LIMITATIONS

The scope of work for this report is intended to provide documentation of the Latigo Ranch 2-34 completion pit closure process in relation to the removal of fluids and mud and is not intended to provide and assessment of the use of Hach chloride field test kits.

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of AMEC's profession practicing in the same locality, under similar conditions and at the date the services are provided. Any conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. AMEC makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

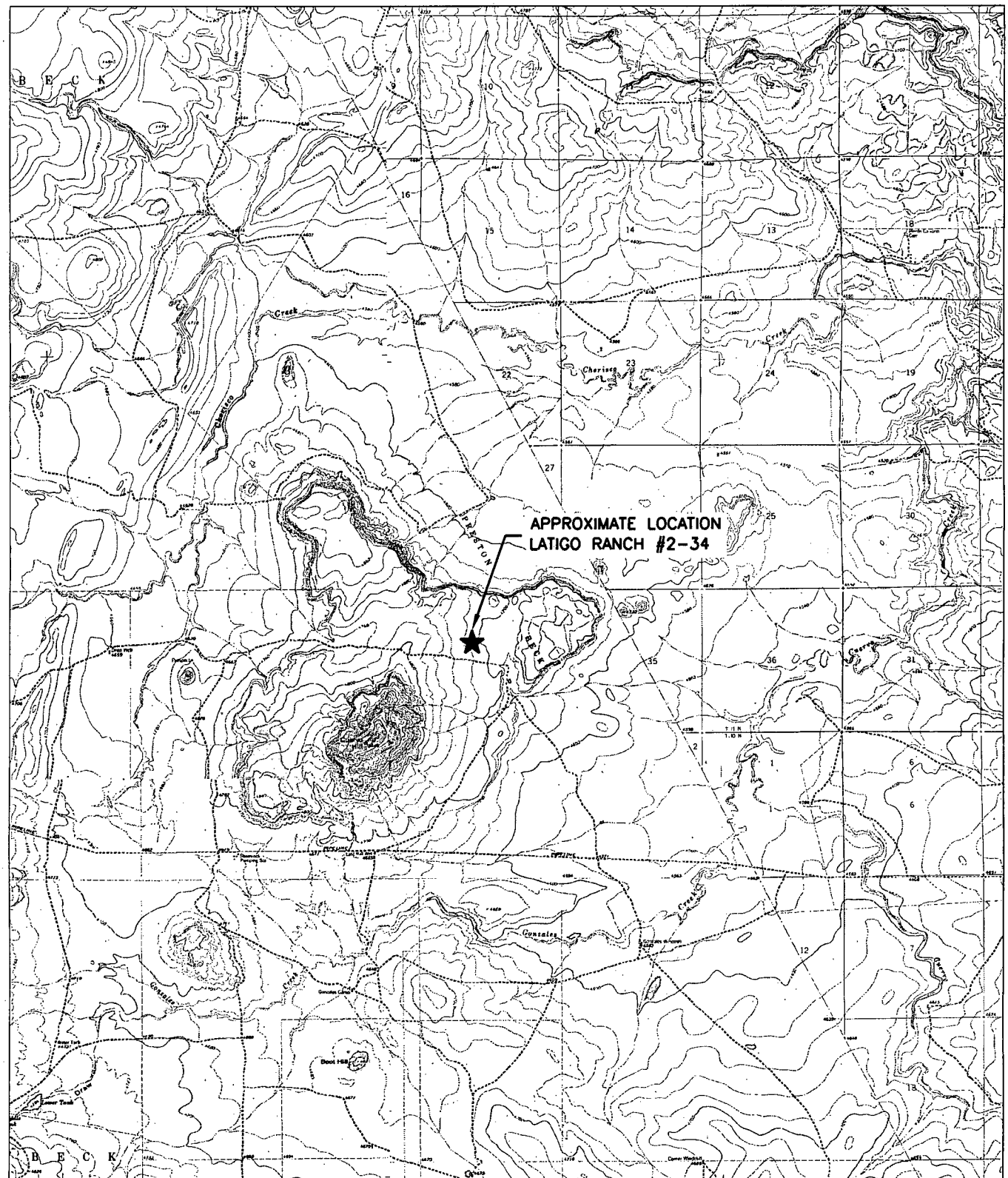
Respectfully submitted,
AMEC Environment and Infrastructure

David Janney, PG
Project Manager

Reviewed by:

David Kondziolka, PE
Vice President

FIGURES



SOURCE: USGS 7.5 MINUTE MESITA DEL GATO, NM QUADRANGLE (1963),
USGS 7.5 MINUTE CUERVO, NM QUADRANGLE (1963),
USGS 7.5 MINUTE SACATON DRAW, NM QUADRANGLE (1963),
AND USCS 7.5 MINUTE MESA CHERISCO, NM QUADRANGLE (1963).

EXPLANATION:

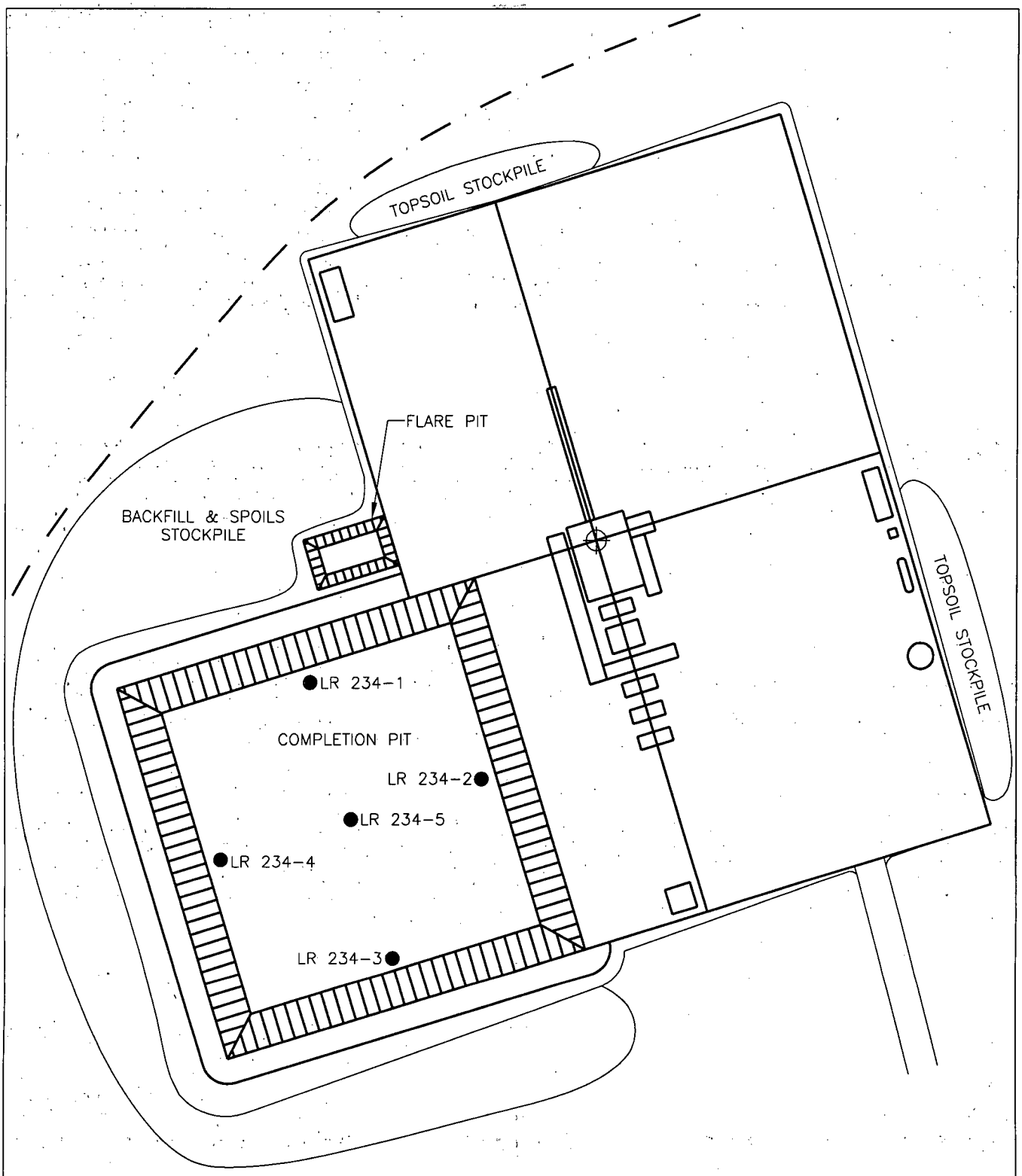
★ APPROXIMATE SITE LOCATION

N

0 2500 5000
FEET
APPROXIMATE SCALE

SITE LOCATION MAP
Latigo Ranch #2-34
Shell Exploration & Production
Section 34, Township 11N, Range 23E
Guadalupe County, NM

By: BAL	Date: 03/22/11	Project No. HO10160210
AMEC		**Figure 1**



SOURCE: AMEC GEOMATRIX FIELD SKETCH

EXPLANATION:

LR 234-1 ● SAMPLE POINT

⊕ GAS WELL

N

0 40 80

FEET

APPROXIMATE SCALE

SAMPLE LOCATION MAP
Latigo Ranch #2-34
Shell Exploration & Production
Section 34, Township 11N, Range 23E
Guadalupe County, NM

By: BAL	Date: 04/07/11	Project No. HO10160210
AMEC		**Figure 2**

TABLES

Table 1
Latigo Ranch 2-34 Completion Pit Analytical Summary
Guadalupe County, New Mexico

Sample Number	Date Collected	Matrix	Diesel Range Organics EPA Method 8015B	Motor Oil Range Organics EPA Method 8015B	Gasoline Range Organics EPA Method 8015B	B, T, E, X (volatiles) EPA Method 8021B	Total Petroleum Hydrocarbons EPA Method 418.1	Anions (Chloride) EPA Method 418.1	Chloride Hach Low-Range	Chloride Hach High-Range	Comments
LR2342 (1-5)	12/1/10	soil	<10	<50	<5	< 0.05, <0.05, <0.05, <0.10	<20	490	81	<287	Five point composite

NOTES:
All concentrations are in milligrams per kilogram (mg/Kg)
B = Benzene
E = Ethyl benzene
NA = Not analyzed
T = Toluene
X = Xylenes

API No. 3001920136

APPENDIX A

Photographic Log

Photo 1: Pit prior to fluid removal (looking northwest).

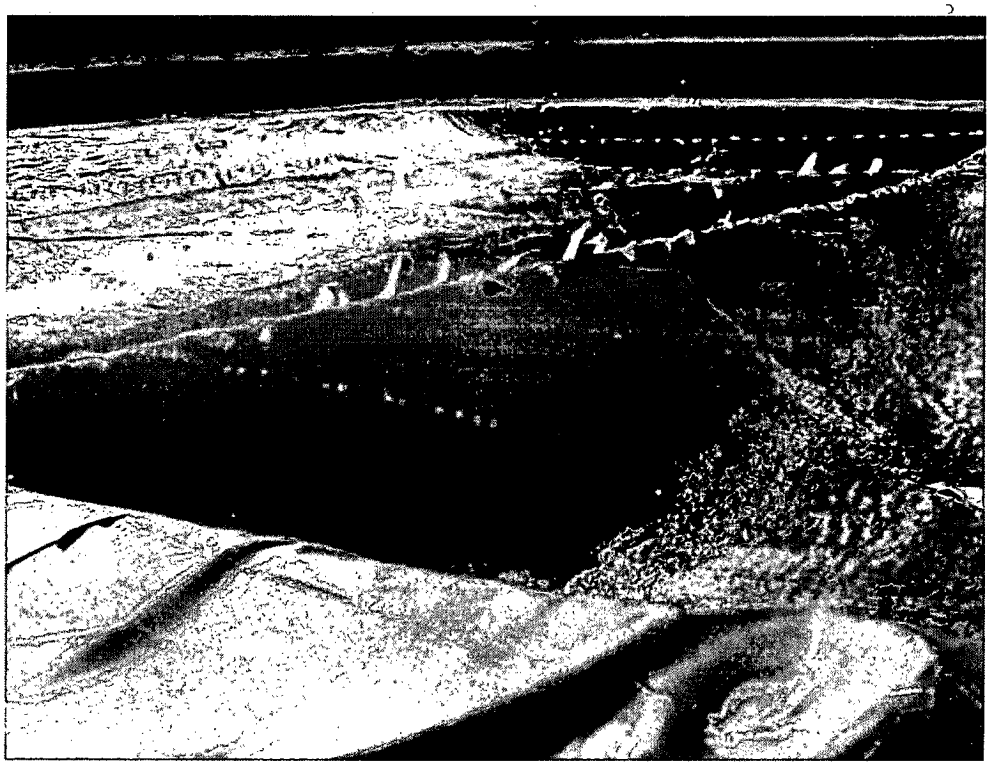


Photo 2: Mud exposed by pumping fluid (looking southwest).

Photo 3: Nearly all fluid has been removed from the pit (looking northwest).

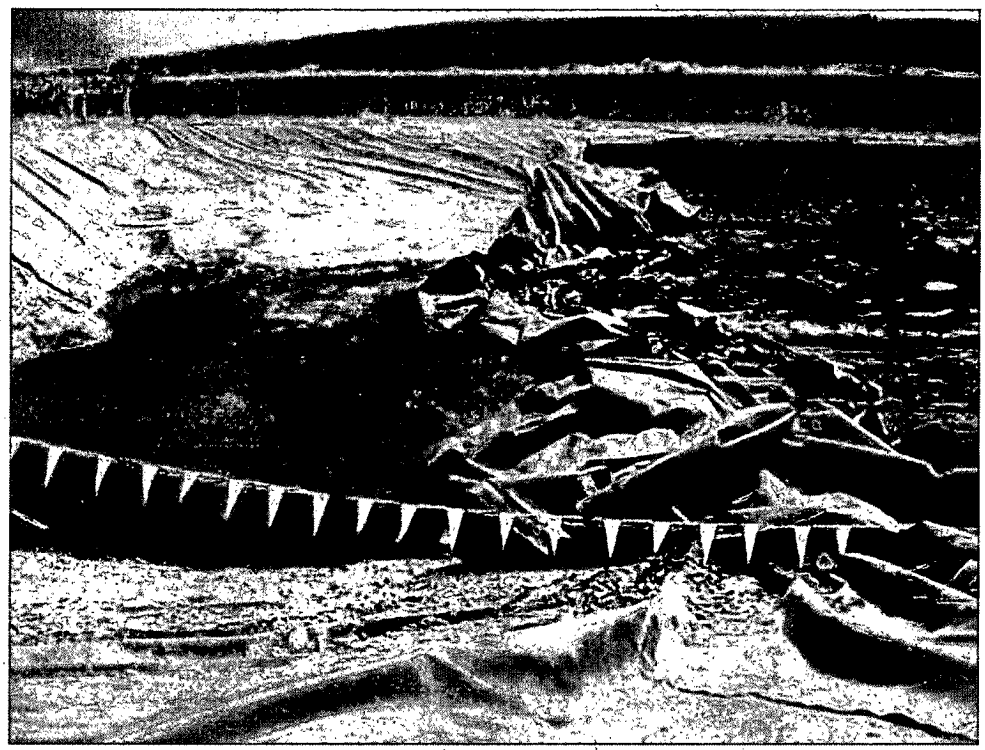


Photo 4: Removing the pit liner (looking west).

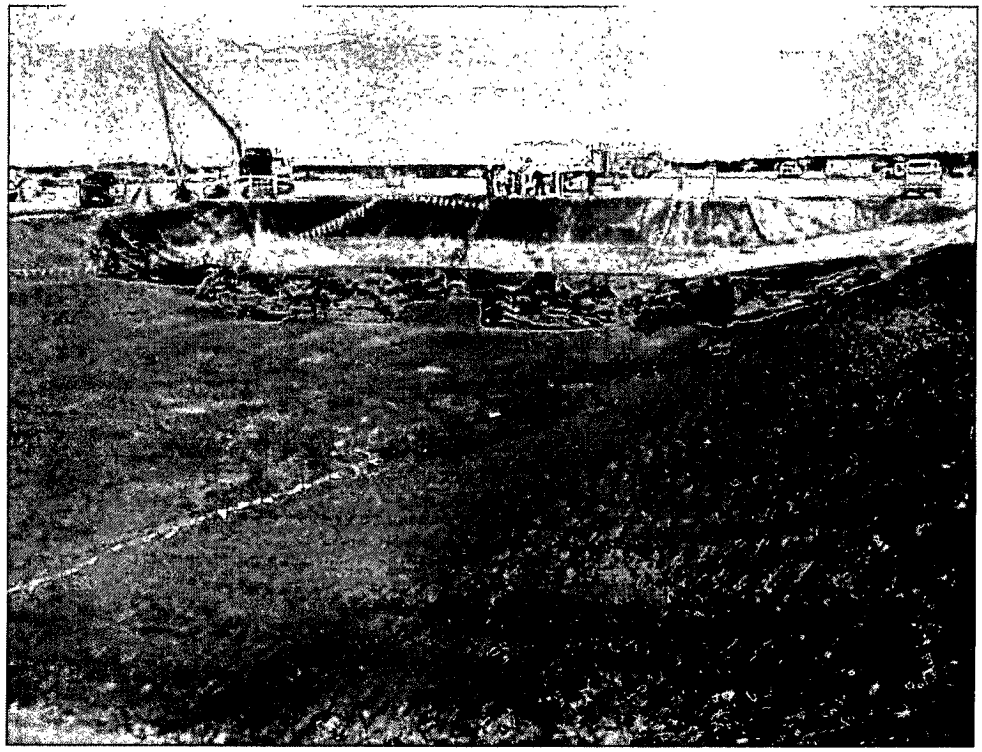


Photo 5: Removing the pit liner (looking east).

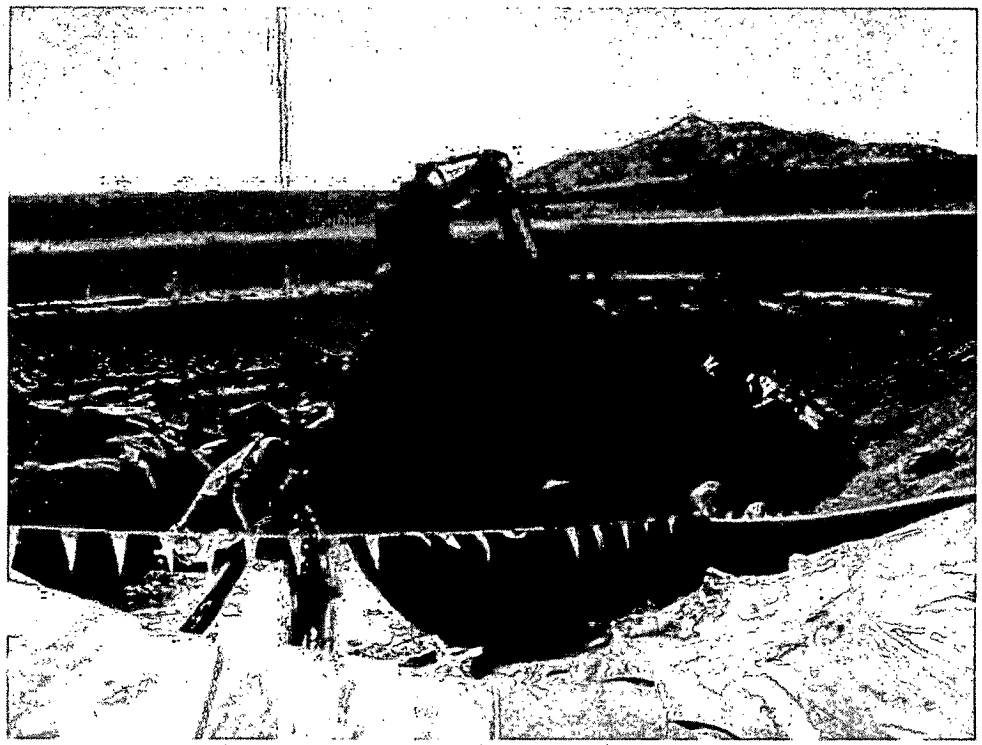


Photo 6: Removing the final corner of the pit liner (looking southwest).

Photo 7: Sample point LR2342-1 (just above shadow).

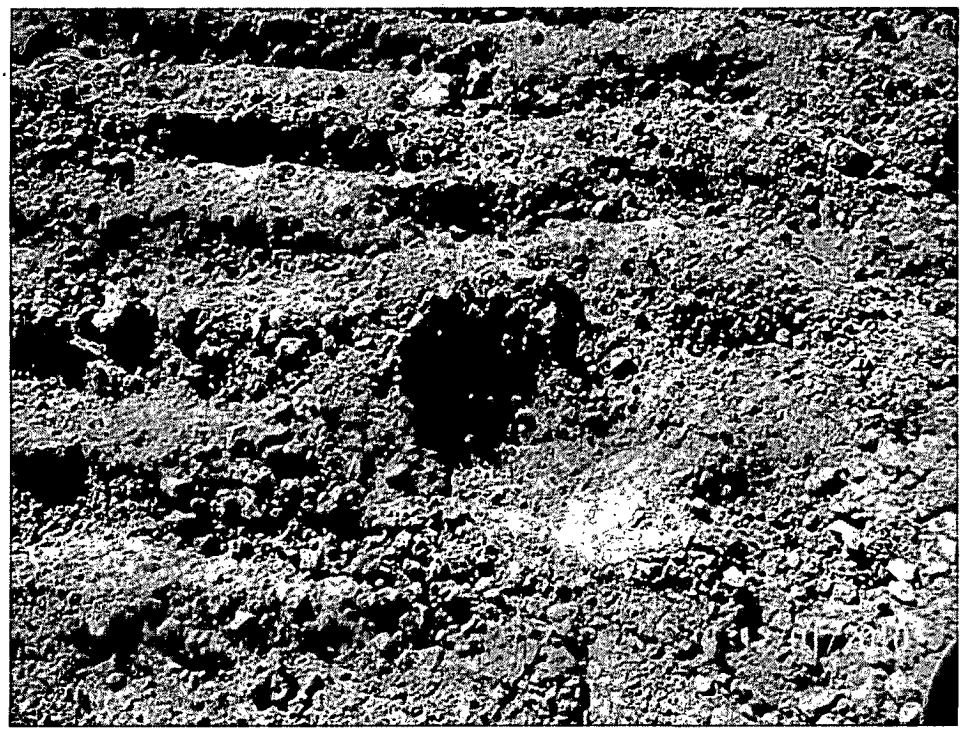


Photo 8: Sample point LR2342-2 (excavated area in center).

Photo 9: Sample point LR2342-3 (excavated area in center).

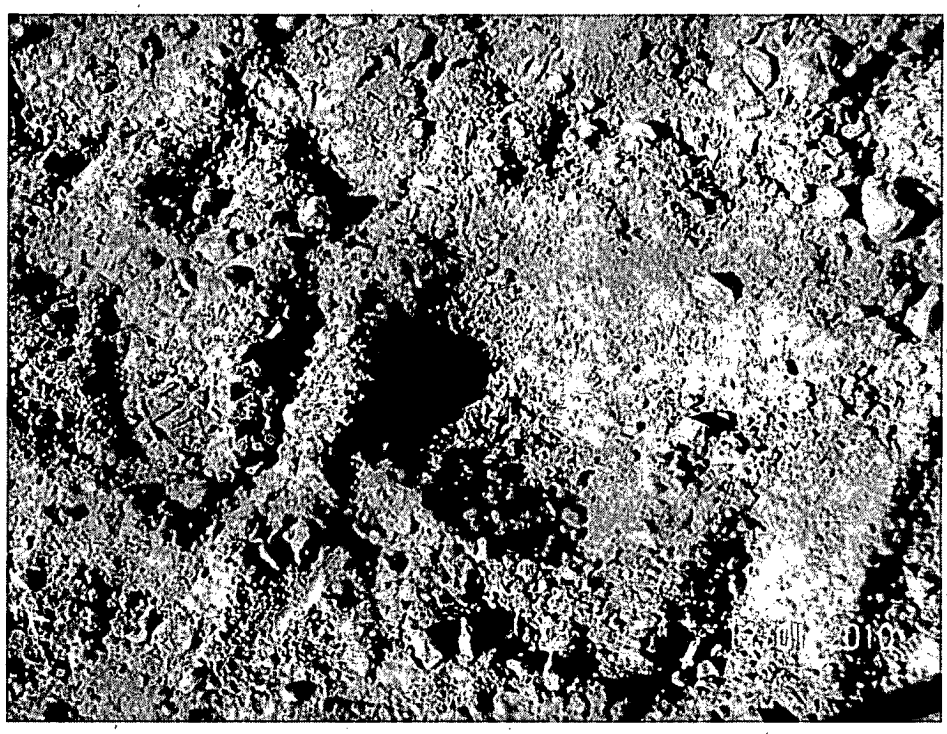


Photo 10: Sample point LR2342-4 (excavated area in center).

Photo 11: Sample point LR2342-5 (excavated area in center).

Photo 12: Backfill and compaction operations have begun (looking northwest).

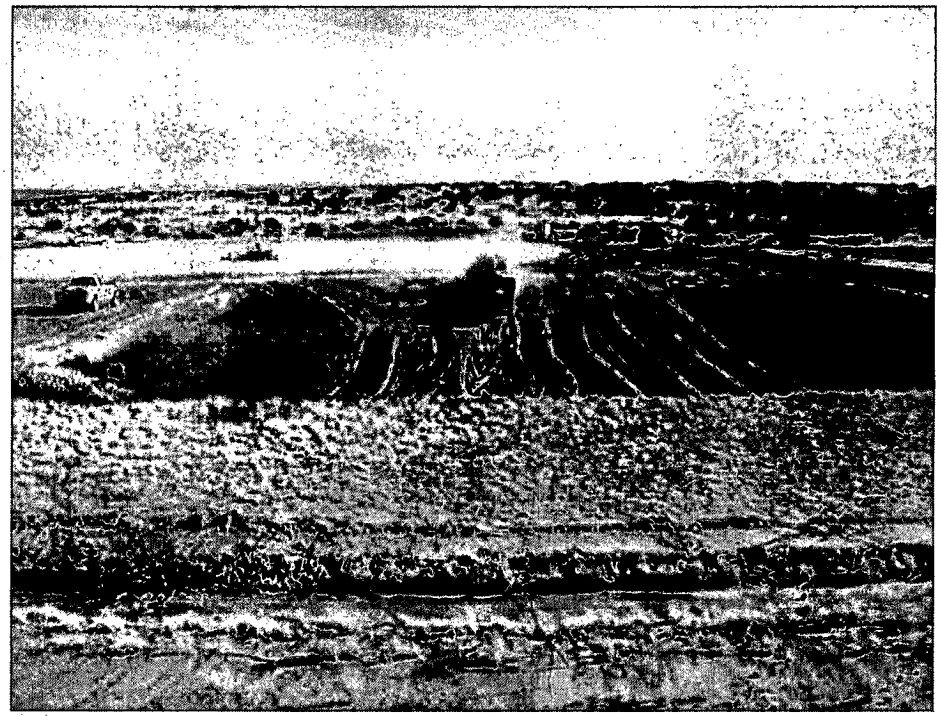


Photo 13: Backfill and compaction under way (looking east).

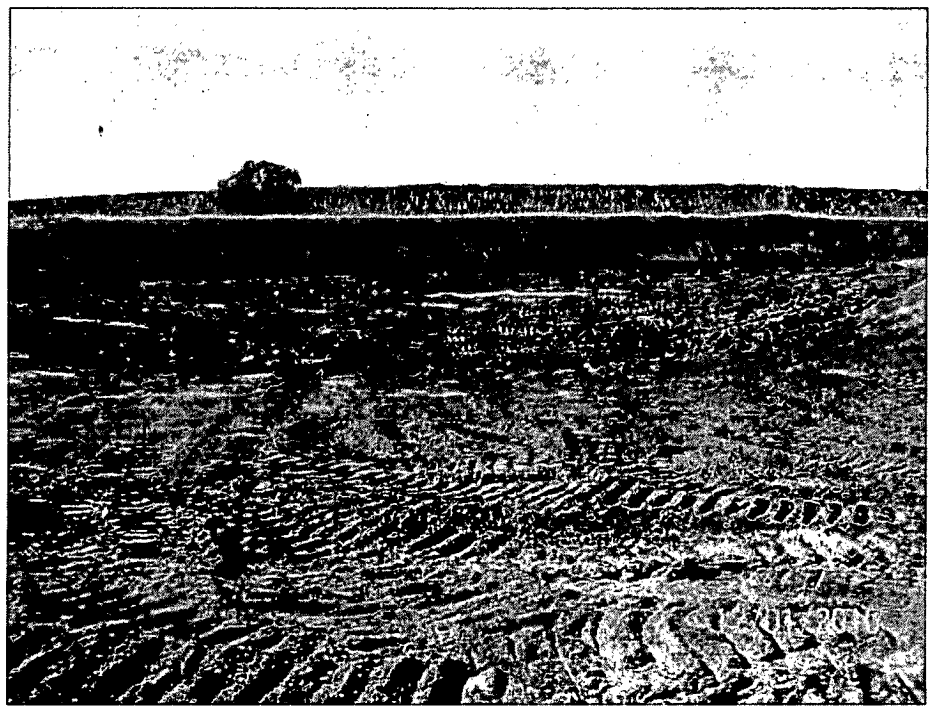


Photo 14: Backfill and compaction nearly completed (looking north).

APPENDIX B

Laboratory Analytical Results, QA/QC, and Chains-of-Custody

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, December 06, 2010

David Janney
AMEC
8519 Jefferson Street, NE
Albuquerque, NM 87113

TEL: (505) 821-1801
FAX (505) 821-7371

RE: Shell Cuervo

Order No.: 1012067

Dear David Janney:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 12/2/2010 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

Hall Environmental Analysis Laboratory, Inc.

Date: *06-Dec-10*

CLIENT:	AMEC	**Client Sample ID:**	LR332
Lab Order:	1012067	**Collection Date:**	12/1/2010 12:20:00 PM
Project:	Shell Cuervo	**Date Received:**	12/2/2010
Lab ID:	1012067-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/3/2010 8:42:43 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/3/2010 8:42:43 AM
Surr: DNOP	89.1	81.8-129		%REC	1	12/3/2010 8:42:43 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/3/2010 11:57:28 AM
Surr: BFB	99.7	89.7-125		%REC	1	12/3/2010 11:57:28 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.050		mg/Kg	1	12/3/2010 11:57:28 AM
Toluene	ND	0.050		mg/Kg	1	12/3/2010 11:57:28 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/3/2010 11:57:28 AM
Xylenes, Total	ND	0.10		mg/Kg	1	12/3/2010 11:57:28 AM
Surr: 4-Bromofluorobenzene	109	88.9-151		%REC	1	12/3/2010 11:57:28 AM
EPA METHOD 300.0: ANIONS						Analyst: **SRM**
Chloride	4600	150		mg/Kg	100	12/3/2010 12:48:12 PM
EPA METHOD 418.1: TPH						Analyst: **LRW**
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/3/2010

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *06-Dec-10*

CLIENT:	AMEC	**Client Sample ID:**	LR2342
Lab Order:	1012067	**Collection Date:**	12/1/2010 1:25:00 PM
Project:	Shell Cuervo	**Date Received:**	12/2/2010
Lab ID:	1012067-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/3/2010 9:16:35 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/3/2010 9:16:35 AM
Surr: DNOP	88.9	81.8-129		%REC	1	12/3/2010 9:16:35 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/3/2010 12:27:34 PM
Surr: BFB	98.3	89.7-125		%REC	1	12/3/2010 12:27:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.050		mg/Kg	1	12/3/2010 12:27:34 PM
Toluene	ND	0.050		mg/Kg	1	12/3/2010 12:27:34 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/3/2010 12:27:34 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/3/2010 12:27:34 PM
Surr: 4-Bromofluorobenzene	106	88.9-151		%REC	1	12/3/2010 12:27:34 PM
EPA METHOD 300.0: ANIONS						Analyst: **SRM**
Chloride	490	30		mg/Kg	20	12/3/2010 12:30:48 PM
EPA METHOD 418.1: TPH						Analyst: **LRW**
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/3/2010

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: AMEC
Project: Shell Cuervo **Work Order:** 1012067

Analyte	Result	Units	PQL	SPK Val	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: MB-24735		*MBLK*				Batch ID:	**24735**	Analysis Date:		12/3/2010 9:01:52 AM	
Chloride	ND	mg/Kg	1.5								
Sample ID: LCS-24735		*LCS*				Batch ID:	**24735**	Analysis Date:		12/3/2010 9:19:17 AM	
Chloride	14.43	mg/Kg	1.5	15	0	96.2	90	110			
Method: EPA Method 418.1: TPH											
Sample ID: MB-24728		*MBLK*				Batch ID:	**24728**	Analysis Date:		12/3/2010	
Petroleum Hydrocarbons, TR	ND	mg/Kg	20								
Sample ID: LCS-24728		*LCS*				Batch ID:	**24728**	Analysis Date:		12/3/2010	
Petroleum Hydrocarbons, TR	95.78	mg/Kg	20	100	0	95.8	86.8	116			
Sample ID: LCSD-24728		*LCSD*				Batch ID:	**24728**	Analysis Date:		12/3/2010	
Petroleum Hydrocarbons, TR	91.70	mg/Kg	20	100	0	91.7	86.8	116	4.35	16.2	
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-24736		*MBLK*				Batch ID:	**24736**	Analysis Date:		12/3/2010 7:01:08 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-24736		*LCS*				Batch ID:	**24736**	Analysis Date:		12/3/2010 7:35:01 AM	
Diesel Range Organics (DRO)	43.46	mg/Kg	10	50	0	86.9	66.2	120			
Sample ID: LCSD-24736		*LCSD*				Batch ID:	**24736**	Analysis Date:		12/3/2010 8:08:52 AM	
Diesel Range Organics (DRO)	41.91	mg/Kg	10	50	0	83.8	66.2	120	3.62	14.3	
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 1012067-01AMSD		*MSD*				Batch ID:	**24729**	Analysis Date:		12/4/2010 5:00:33 AM	
Gasoline Range Organics (GRO)	25.62	mg/Kg	5.0	25	0	102	69.2	144	2.62	20.5	
Sample ID: MB-24729		*MBLK*				Batch ID:	**24729**	Analysis Date:		12/4/2010 7:30:37 AM	
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: LCS-24729		*LCS*				Batch ID:	**24729**	Analysis Date:		12/4/2010 5:30:33 AM	
Gasoline Range Organics (GRO)	26.02	mg/Kg	5.0	25	0	104	95.7	120			
Sample ID: 1012067-01AMS		*MS*				Batch ID:	**24729**	Analysis Date:		12/4/2010 4:30:27 AM	
Gasoline Range Organics (GRO)	26.30	mg/Kg	5.0	25	0	105	69.2	144			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: AMEC
Project: Shell Cuervo **Work Order:** 1012067

Analyte	Result	Units	PQL	SPK Val	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 1012067-01AMSD		*MSD*				Batch ID:	**24729**	Analysis Date:		12/4/2010 6:30:35 AM	
Benzene	0.9989	mg/Kg	0.050	1	0	99.9	67.2	113	3.39	14.3	
Toluene	0.9417	mg/Kg	0.050	1	0	94.2	62.1	116	3.56	15.9	
Ethylbenzene	1.008	mg/Kg	0.050	1	0	101	67.9	127	2.50	14.4	
Xylenes, Total	3.135	mg/Kg	0.10	3	0	105	60.6	134	2.62	12.6	
Sample ID: MB-24729		*MBLK*				Batch ID:	**24729**	Analysis Date:		12/4/2010 7:30:37 AM	
Benzene	ND	mg/Kg	0.050								
Toluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								
Sample ID: LCS-24729		*LCS*				Batch ID:	**24729**	Analysis Date:		12/4/2010 7:00:38 AM	
Benzene	0.9901	mg/Kg	0.050	1	0	99.0	83.3	107			
Toluene	0.9106	mg/Kg	0.050	1	0	91.1	74.3	115			
Ethylbenzene	0.9706	mg/Kg	0.050	1	0	97.1	80.9	122			
Xylenes, Total	3.048	mg/Kg	0.10	3	0	102	85.2	123			
Sample ID: 1012067-01AMS		*MS*				Batch ID:	**24729**	Analysis Date:		12/4/2010 6:00:33 AM	
Benzene	0.9656	mg/Kg	0.050	1	0	96.6	67.2	113			
Toluene	0.9088	mg/Kg	0.050	1	0	90.9	62.1	116			
Ethylbenzene	0.9829	mg/Kg	0.050	1	0	98.3	67.9	127			
Xylenes, Total	3.054	mg/Kg	0.10	3	0	102	60.6	134			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name AMEC | Date Received: 12/2/2010

Work Order Number 1012067 | Received by: MMG

Checklist completed by: [signature] 12/2/10 (Signature / Date) | Sample ID labels checked by: AG (Initials)

Matrix: | Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	4.4°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: AMEC - Geomatrix

Mailing Address: 8519 Jefferson NE
Albuquerque, NM 87113

Phone #: 505.821.1801

email or Fax#: davidjanney@AMEC.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) Excel

Turn-Around Time:
☐ Standard ☒ Rush 24-hr

Project Name: Shell Cuervo

Project #: H0101 60210.4

Project Manager: D. Janney

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.4°

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1012066	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Cl (Method 300.0)				Air Bubbles (Y or N)
12-1-10	1220	S	LR 332	2-4oz glass jars	None	-1	X		X	X								X				
12-1-10	1325	S	LR 2342	"	"	-2	X		X	X								X				

Analysis Request

Date: 12-2-10 Time: 0850 Relinquished by:

Received by: Date 12/2/10 Time 8:50

Date: Time: Relinquished by:

Received by: Date Time

Remarks: Please composite the 2 jars for each sample #.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

APPENDIX C

OCD Form C-144

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
Revised August 1, 2011

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action: ☐ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
☒ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Modification to an existing permit
☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: SWEPI LP OGRID #: 250036
Address: P.O. Box 567, Houston, TX77001 (Local contact: Shell Explor. & Prod. Co. 4582 S Ulster Pkwy., Suite 1400, Denver, CO 80237)
Facility or well name: Latigo Ranch 2-34
API Number: 3001920136 OCD Permit Number:
U/L or Qtr/Qtr F Section 34 Township 11N Range 23E County: Guadalupe
Center of Proposed Design: Latitude 35.137103 Longitude 104.489352 NAD: ☐1927 ☒ 1983
Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
☐ Lined ☐ Unlined Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____ Volume: _____bbl Dimensions: L_____ x W_____ x D_____

3.
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other _____
☐ Lined ☐ Unlined Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____

4.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: _____bbl Type of fluid: _____
Tank Construction material: _____
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
Liner type: Thickness _____mil ☐ HDPE ☐ PVC ☐ Other _____

5.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*

☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☐ Alternate. Please specify_____

7.

Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other_____

☐ Monthly inspections (If netting or screening is not physically feasible)

8.

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.16.8 NMAC

9.

Administrative Approvals and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☐ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. **Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.**

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☐ NA
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

11.
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____

☐ Previously Approved Operating and Maintenance Plan API Number: _____ *(Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

13.
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14.
Proposed Closure: 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System ☐ Alternative

Proposed Closure Method:
- ☐ Waste Excavation and Removal
- ☐ Waste Removal (Closed-loop systems only)
- ☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
  - ☐ In-place Burial ☐ On-site Trench Burial
- ☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)

Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please provide the information below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

18.

On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC

☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC

☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC

☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)

☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

20.
OCD Approval: ☐ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: _____ **Approval Date:** _____

Title: _____ **OCD Permit Number:** _____

21.
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☒ **Closure Completion Date: 12/10/2010**

22.
Closure Method:

☒ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

23.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: Gandy-Marley, Inc. Tatum, NM Disposal Facility Permit Number: NM-711-1-0020

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☒ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Site Reclamation (Photo Documentation)

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

24.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Proof of Closure Notice (surface owner and division) – **Not applicable**

☐ Proof of Deed Notice (required for on-site closure) – **Not applicable**

☒ Plot Plan (for on-site closures and temporary pits) - **See Figure 2 of Closure Report**

☒ Confirmation Sampling Analytical Results (if applicable) - **See Appendix B of Closure Report**

☐ Waste Material Sampling Analytical Results (required for on-site closure)) – **Not applicable**

☒ Disposal Facility Name and Permit Number - **Included in Box 23 above and in Closure Report**

☒ Soil Backfilling and Cover Installation - **Description and Photo Documentation included in Closure Report**

☒ Re-vegetation Application Rates and Seeding Technique - **Described in Closure Report**

☒ Site Reclamation (Photo Documentation) - **See Appendix A of Closure Report**

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐1927 ☐ 1983

25.
Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Michael L. Bergstrom Title: Regulatory Advisor

Signature: Michael L. Bergstrom Date: 3/13/2012

e-mail address: Michael.Bergstrom@shell.com Telephone: 303.222.6347