Souder, Miller & Associates♦201 S. Halagueno St.♦Carlsbad, NM 88220
(575) 689-8801

APPROVED
By Olivia Yu at 8:34 am, Jan 29, 2018

December 18, 2017

#5E26084-BG6

NMOCD District I
Ms. Olivia Yu
1625 N. French Drive
Hobbs, New Mexico 88240

NMOCD approves 1RP-4874 for backfilling and closure.

SUBJECT: SOIL REMEDIATION CLOSURE REPORT FOR THE PRESIDENTE PIPELINE RELEASE (1RP-4874), LEA COUNTY, NEW MEXICO

Dear Ms. Yu:

On behalf of Lucid Energy Group (Lucid), Souder, Miller & Associates (SMA) has prepared this CLOSURE REPORT that describes the assessment, initial delineation, and remediation for a release associated with the Presidente Pipeline. The site is in UNIT C, SECTION 32, TOWNSHIP 25S, RANGE 32E, NMPM, Lea County, New Mexico, on State land. Figure 1 illustrates the vicinity and location of the site.

Table 1, below, summarizes information regarding the release.

Table 1: Release information and Site Ranking	
Name	Presidente Pipeline Release
Company	Lucid Energy Group
Incident Number	1RP-4874
API Number	fOY1732147575
Location	32.09401, -103.69991
Estimated Date of Release	October 31, 2017
Date Reported to NMOCD	11/14/2017
Land Owner	State
Reported To	NM Oil Conservation Division (NMOCD)
Source of Release	Pipeline release
Released Material	Natural gas and Pipeline liquids
Released Volume	unknown
Recovered Volume	0
Net Release	unknown
Nearest Waterway	An unnamed drainage feature is 2000 feet East
Depth to Groundwater	Estimated to be greater than 100 feet
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	0
SMA Response Dates	November 1, 2017 and November 21, 2017

1.0 Background

A pipeline leak occurred along the right-of-way (ROW) of the buried Presidente pipeline. The pipeline segment was isolated, blown down, and repaired. During excavation and repair of the pipeline, it was discovered that pipeline liquids were also released. The excavation area surrounding the pipeline is approximately 45 feet long by 15 feet wide. Figure 1 illustrates the vicinity and well head protection while Figure 2 illustrates the site and sample locations. The final C-141 form is included in Appendix A.

2.0 Site Ranking and Land Jurisdiction

Malaga is approximately 23 miles southeast of the release location. The elevation of the release site is approximately 3,330 feet above sea level. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be greater than 200 feet below ground surface (bgs). NMOSE data in the area are indicates four water wells within the 3 mile radius of the release location, all of which have groundwater 300 feet bgs or deeper.

Recommended Remediation Action Levels (RRALs) are determined by the site ranking according to the NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (1993). Below in Table 2 are the remediation standards and the site ranking for this location. Justification for this site ranking is found in Figure 1 and Appendix B.

Table 2.

Soil Remediation Standards	0 to 9	10 to 19	>19
Benzene	10 PPM	10 PPM	10 PPM
BTEX	50 PPM	50 PPM	50 PPM
TPH	5000 PPM	1000 PPM	100 PPM

Depth to Groundwater	NMOCD Numeric Rank
< 50 BGS = 20	
50' to 99' = 10	
>100' = 0	0
Distance to Nearest Surface Water	**NMOCD Numeric Rank**
< 200' = 20	
200' - 1000' = 10	
>1000' = 0	0
Well Head Protection	**NMOCD Numeric Rank**
<1000' (or <200' domestic) = 20	
> 1000' = 0	0
Total Site Ranking	**0**

3.0 Release Characterization

On November 1, 2017, after receiving 811 clearance, SMA field personnel assessed the release area. Soil samples were field-screened using an EC meter. Five samples were collected to a maximum depth of 8 feet bgs within the open pipeline excavation. Samples were collected to characterize and delineate the release. One discreet sample was collected from beneath the release point of the pipeline, at 8 feet bgs; four composite samples were collected from each of the sidewalls of the excavation. All samples were collected and processed according to NMOCD soil sampling procedures. The samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analysis for BTEX by EPA Method 8021, TPH EPA Method 8015, and chlorides EPA Method 300.0. Sample locations are depicted on Figure 2. All laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

The sample from the floor of the open pipeline excavation (L1) resulted in laboratory results above RRALs for TPH, BTEX, and chlorides. All four sidewall samples (SW1 to SW4) returned laboratory results below RRAL's.

4.0 Soil Remediation Summary

On November 21, 2017, after receiving 811 clearance, SMA returned to the location to guide the excavation of the floor of the open pipeline excavation to remove remaining contaminated soil. The excavation was extended to 11 feet bgs. A composite sample was taken from the bottom of the excavation and was sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analysis for BTEX by EPA Method 8021, TPH EPA Method 8015, and chlorides EPA Method 300.0. The sample resulted in BTEX, TPH, and chlorides below the RRAL's. All impacted soils were disposed of at an NMOCD approved facility.

5.0 Re-vegetation Plan

Seeding of the location is recommended for June or July 2018, to coincide with the "rainy" season to achieve optimum results. Seed will be planted a quarter to half- inch deep using a disc type or similar rangeland drill sufficient to accommodate variations in seed sizes. If the broadcast method is exacted, seeding rates should be doubled. Seeding can be accomplished as early as May 2018 given all dirt work for the location is stabilized. Soil in this area will be tilled to reduce compaction.

Seed-bed preparation will be performed to provide a hospitable environment for germinating seed by breaking up impermeable soil layers that have formed and increasing void spaces for air and water. Ground shall be roughed-up prior to planting, by raking, harrowing or other methods.

The seed mixture approved by the New Mexico State Land office is the BLM mixture for LPC Sand Shinnery Sites as outlined in Appendix D, which includes the following:

- Plains Bristlegrass
- Little Bluestem
- Plains Coreopsis
- Sand Bluestem
- Big Bluestem
- Sand Dropseed
- Annual Ryegrass

Mulch will be placed to prevent loss of moisture and seed to wind. Mulching shall be accomplished using one of these following methods:

a. weed free straw (2 tons/ac;kg/ha)
b. wood residues (sawdust, wood chips, bark (2 tons/ac;kg/ha)
c. hydro-mulching (1,500 lb/ac;kg/ha)
d. composted manure (5 tons/ac;kg/ha)
e. excelsior blanket
f. straw jute
g. peanut hulls (2 tons/ac;kg/ha)

Stabilization should occur after a minimum of two full summer growing seasons after planting.

SMA will monitor the site in late August 2018 for Noxious Weeds, any species of concern will be treated chemically by a NMDA licensed applicator.

6.0 Scope and Limitations

The scope of our services consisted of the performance of assessment sampling, verification of release stabilization, regulatory liaison, and preparation of this closure report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

J. Austin Weyant

Austin Weyant
Project Scientist

Reviewed by:

Shawna Chubbuck

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Site and Sample Location Map

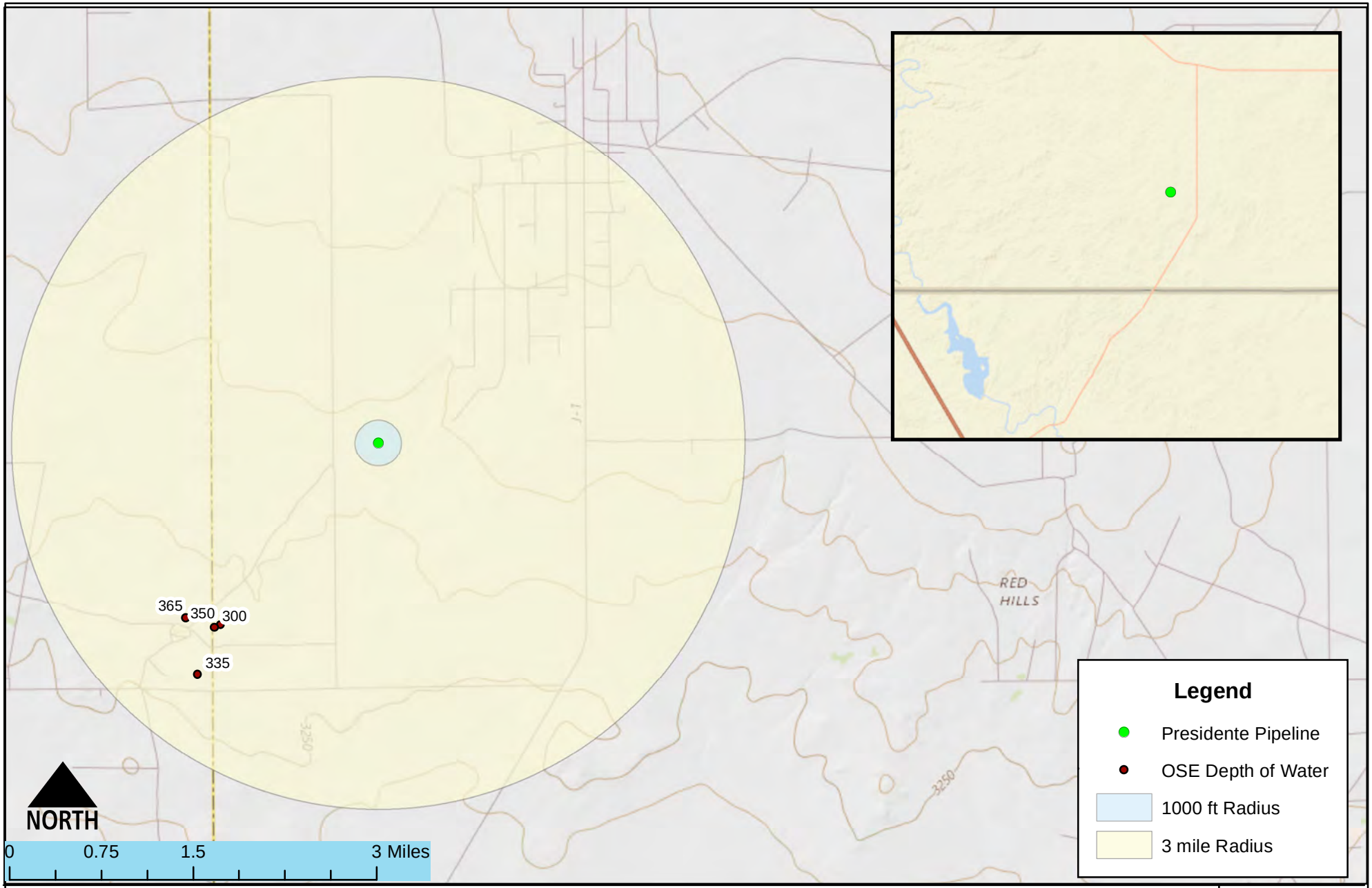
Tables:

Table 3: Summary of Sample Results

Appendices:

Appendix A: Form C141 Initial and Final
Appendix B: NMOSE Wells Report
Appendix C: Laboratory Analytical Reports
Appendix D: BLM 2016 Seed Mixes

FIGURE 1
VICINITY AND NMOSE DATA MAP



Vicinity and NMOSE Wells Map
Presidente Pipeline - Lucid
S 32-T25S-R32E, New Mexico

Figure 1

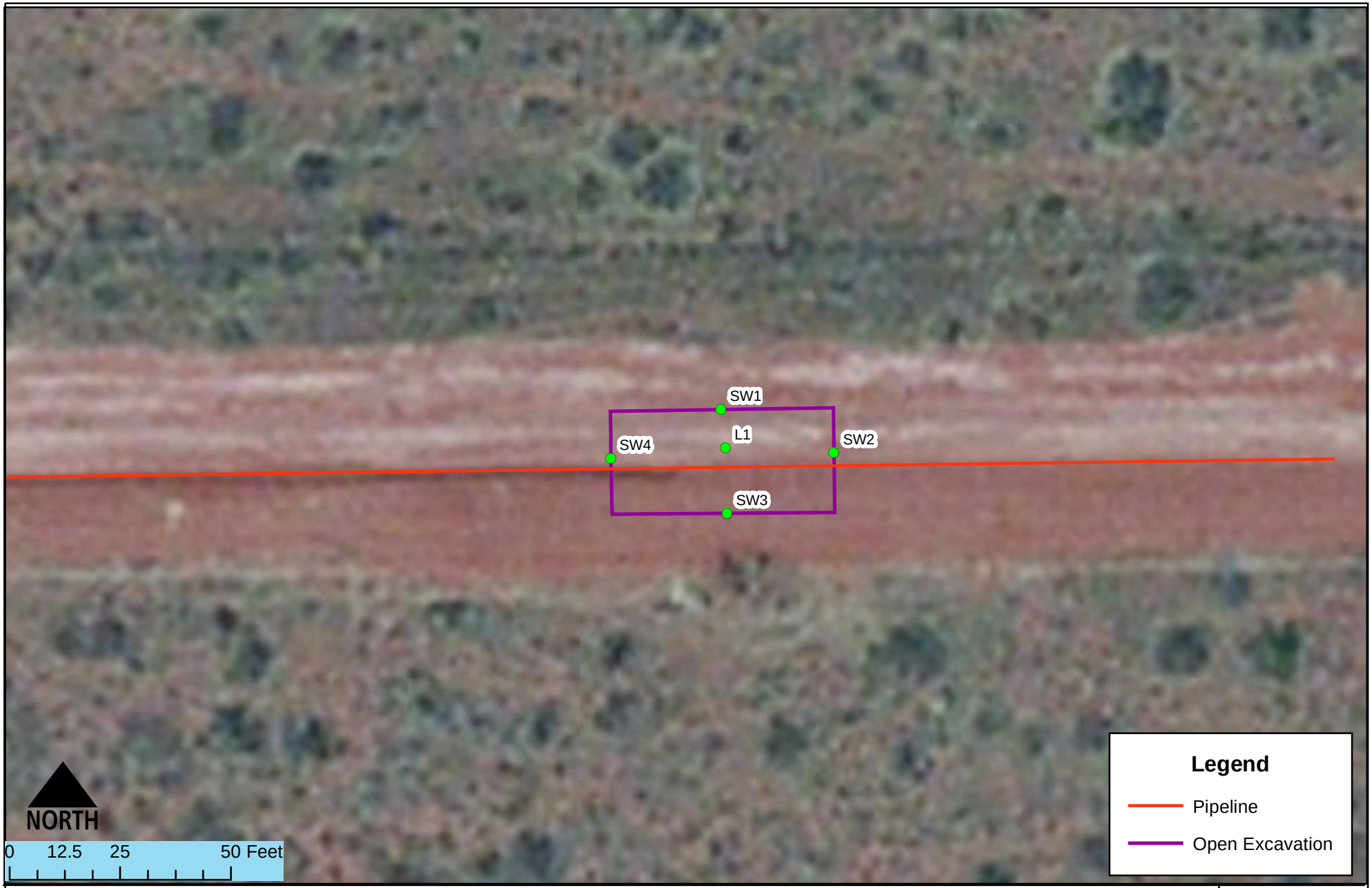
Date Saved: 11/2/2017

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn Heather Patterson
Checked
Approved

SMA
201 South Halagueña Street
Carlsbad, New Mexico 88221
(575) 689-7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains

FIGURE 2
SITE AND SAMPLE LOCATION MAP



Site and Sample Location Map
Presidente Pipeline - Lucid
S 32-T25S-R32E, New Mexico

Figure 2

Date Saved: 11/2/2017

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn Heather Patterson
Checked
Approved

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TABLE 3
SUMMARY SAMPLE RESULTS

Presidente Pipeline ROW

Table 3.

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action Taken	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- Field Screens (ppm)	Cl- Laboratory mg/Kg
NMOCD RRAL's for Site Ranking 0				50 mg/Kg	10 mg/Kg				5000 mg/Kg		
L1	11/1/2017	8	excavated	**67.5**	2	620	26000	13000	**39620**	6135	9300
	11/21/2017	11	in-situ	<0.25	<0.025	<5.0	<9.4	<47	<62	--	30
SW1	11/1/2017	comp	in-situ	<0.22	<0.024	<4.8	120	56	176	<132	--
SW2	11/1/2017	comp	in-situ	<0.22	<0.024	<4.9	43	<50	43	<132	--
SW3	11/1/2017	comp	in-situ	<0.22	<0.024	<4.8	<9.2	<46	<61	<132	--
SW4	11/1/2017	comp	in-situ	1.76	<0.048	27	1,900	680	2,607	<132	--
SP1	11/1/2017	comp	in-situ	1.73	<0.046	28	770	560	1358	541	560
SP2	11/1/2017	comp	disposal	1.34	<0.025	27	1100	390	1517	1214	1300

"--" = Not Analyzed

APPENDIX A
FORM C141 INITIAL AND FINAL

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

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

X Initial Report Final Report

Name of Company: Lucid Energy Delaware	Contact Kerry Egan
Address 326 West Quay Artesia, NM 88210	Telephone No. 575 513-8988
Facility Name: Presidente 10" Line	Facility Type: Pipeline ROW

Surface Owner: State of NM	Mineral Owner State	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	32	25S	32E					Lea

Latitude 32.094010 **Longitude** -103.69991

NATURE OF RELEASE

Type of Release: Natural Gas	Volume of Release: < 500MCF of gas, minimal (<5 bbl) liquids	Volume Recovered: None
Source of Release: External corrosion leak in 10" steel line	Date and Hour of Occurrence: 10/31/2017	Date and Hour of Discovery: 10/31/2017
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

RECEIVED
By Olivia Yu at 1:09 pm, Nov 17, 2017

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* The leak was apparently cause by external corrosion of the pipeline, due to a defect in the pipe wrap. Upon discovery of the leak the line was shut-in and depressurized. The corroded section was then cut out and replaced with a new section of pipe. The release was primarily of natural gas, and potentially a minor amount of liquids. When operations arrived at the location and began exposing the line, there were no free-standing liquids and the soil was not saturated. Soil staining, and odor is very minimal, if present at all.

Describe Area Affected and Cleanup Action Taken.*
During the response and repair of the line, an area approximately 45' L x 15' W was excavated along the ROW. The sidewalls, floor, and spoil pile were all sampled to determine the extent of contamination. Pending the results of the sampling a work plan will be developed for the site.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Kerry Egan	OIL CONSERVATION DIVISION
Printed Name: Kerry Egan	Approved by Environmental Specialist:
Title: Environmental Compliance Coordinator	Approval Date: 11/17/2017 Expiration Date:
E-mail Address: KEgan@lucid-energy.com	Conditions of Approval: see attached directive Attached ☑
Date: 11/14/2017 Phone: 575 810-6021	

* Attach Additional Sheets If Necessary

1RP-4874 nOY1732147683 fOY1732147575 pOY1732148245

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _11/14/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4874__ has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _12/17/2017_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

● Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

● Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

● Nominal detection limits for field and laboratory analyses must be provided.

● Composite sampling is not generally allowed.

● Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

●Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

● If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

● Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

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

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: **Lucid Energy Delaware**	Contact **Kerry Egan**
Address **326 West Quay Artesia NM 88210**	Telephone No. **575-513-8988**
Facility Name **Presidente 10" Line**	Facility Type **Pipeline ROW**

Surface Owner State of NM	Mineral Owner State	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	32	25S	32E					

Latitude 32.094010 **Longitude -103.69991** NAD83

NATURE OF RELEASE

Type of Release: Natural Gas	Volume of Release: <500MCF of gas, minimal (<5 bbl) liquids	Volume Recovered: None
Source of Release: External Corrosion leak in 10" steel line	Date and Hour of Occurrence: 10/31/2017	Date and Hour of Discovery: 10/31/2017
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* The leak was apparently caused by external corrosion of the pipeline, due to a defect in the pipe wrap. Upon discovery of the leak, the line was shut-in and depressurized. The corroded section was cut out and replaced with a new section. The release was primarily of natural gas and minor amounts of liquids. When operations arrived at the location and began exposing the line, there were no free-standing liquids and the soil was not saturated.

Describe Area Affected and Cleanup Action Taken.* During the response and repair of the line, an area approximately 45'x15' was excavated along the ROW. Clean-up was performed as per NMOCD guidelines. Soil sampling has been conducted to ensure removal of contaminated soil above the RRAL for this site. Contaminated material over the RRAL will be sent to an NMOCD approved landfill.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Kerry Egan	OIL CONSERVATION DIVISION	
Printed Name: **Kerry Egan**	Approved by Environmental Specialist:	
Title: **Environmental Compliance Coordinator**	Approval Date:	Expiration Date:
E-mail Address: **Kegan@lucid-energy.com**	Conditions of Approval:	Attached ☐
Date: 12/8/2017 Phone: 575-810-6021		

* Attach Additional Sheets If Necessary

1RP-4874

APPENDIX B
NMOSE WELLS REPORT

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03829 POD1	CUB	LE	3	3	1	06	26S	32E	620628	3549186	3077	646	350	296
C 03554 POD1	CUB	ED	2	1	4	01	26S	31E	620547	3549148	3158	630	300	330
C 03639 POD1	CUB	ED	3	4	2	01	26S	31E	620168	3549279	3318	700	365	335
C 02090		ED		4	4	01	26S	31E	620329	3548533*	3779	350	335	15

Average Depth to Water: **337 feet**

Minimum Depth: **300 feet**

Maximum Depth: **365 feet**

Record Count: 4

UTMNAD83 Radius Search (in meters):

Easting (X): 622546.43 **Northing (Y):** 3551593.66 **Radius:** 5000

***UTM location was derived from PLSS - see Help**

APPENDIX C

LABORATORY ANALYTICAL REPORTS

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 14, 2017

Austin Weyant
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX

RE: Presidente OrderNo.: 1711231

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 7 sample(s) on 11/4/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: Spill Pile 1
Project: Presidente
Collection Date: 11/1/2017 9:45:00 AM
Lab ID: 1711231-001 **Matrix:** SOIL **Received Date:** 11/4/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	560	30		mg/Kg	20	11/10/2017 1:33:22 PM	34942
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	770	9.8		mg/Kg	1	11/7/2017 4:55:31 PM	34843
Motor Oil Range Organics (MRO)	280	49		mg/Kg	1	11/7/2017 4:55:31 PM	34843
Surr: DNOP	105	70-130		%Rec	1	11/7/2017 4:55:31 PM	34843
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	28	9.2		mg/Kg	2	11/7/2017 2:45:41 PM	34834
Surr: BFB	180	15-316		%Rec	2	11/7/2017 2:45:41 PM	34834
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.18		mg/Kg	2	11/7/2017 2:45:41 PM	34834
Benzene	ND	0.046		mg/Kg	2	11/7/2017 2:45:41 PM	34834
Toluene	ND	0.092		mg/Kg	2	11/7/2017 2:45:41 PM	34834
Ethylbenzene	ND	0.092		mg/Kg	2	11/7/2017 2:45:41 PM	34834
Xylenes, Total	1.5	0.18		mg/Kg	2	11/7/2017 2:45:41 PM	34834
Surr: 4-Bromofluorobenzene	93.9	80-120		%Rec	2	11/7/2017 2:45:41 PM	34834

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: Spill Pile 2
Project: Presidente
Collection Date: 11/1/2017 9:50:00 AM
Lab ID: 1711231-002
Matrix: SOIL
Received Date: 11/4/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1300	75		mg/Kg	50	11/13/2017 1:55:16 PM	34942
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1100	36		mg/Kg	4	11/9/2017 4:13:38 PM	34843
Motor Oil Range Organics (MRO)	390	180		mg/Kg	4	11/9/2017 4:13:38 PM	34843
Surr: DNOP	117	70-130		%Rec	4	11/9/2017 4:13:38 PM	34843
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	27	5.0		mg/Kg	1	11/7/2017 5:05:40 PM	34834
Surr: BFB	268	15-316		%Rec	1	11/7/2017 5:05:40 PM	34834
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/7/2017 5:05:40 PM	34834
Benzene	ND	0.025		mg/Kg	1	11/7/2017 5:05:40 PM	34834
Toluene	0.086	0.050		mg/Kg	1	11/7/2017 5:05:40 PM	34834
Ethylbenzene	0.13	0.050		mg/Kg	1	11/7/2017 5:05:40 PM	34834
Xylenes, Total	1.1	0.10		mg/Kg	1	11/7/2017 5:05:40 PM	34834
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	11/7/2017 5:05:40 PM	34834

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1
Project: Presidente
Collection Date: 11/1/2017 10:05:00 AM
Lab ID: 1711231-003
Matrix: SOIL
Received Date: 11/4/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	9300	300		mg/Kg	200	11/13/2017 2:07:40 PM	34942
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	26000	970		mg/Kg	100	11/7/2017 5:39:56 PM	34843
Motor Oil Range Organics (MRO)	13000	4800		mg/Kg	100	11/7/2017 5:39:56 PM	34843
Surr: DNOP	0	70-130	S	%Rec	100	11/7/2017 5:39:56 PM	34843
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	620	24		mg/Kg	5	11/7/2017 11:14:27 AM	34834
Surr: BFB	476	15-316	S	%Rec	5	11/7/2017 11:14:27 AM	34834
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.49		mg/Kg	5	11/7/2017 11:14:27 AM	34834
Benzene	2.0	0.12		mg/Kg	5	11/7/2017 11:14:27 AM	34834
Toluene	20	0.24		mg/Kg	5	11/7/2017 11:14:27 AM	34834
Ethylbenzene	6.5	0.24		mg/Kg	5	11/7/2017 11:14:27 AM	34834
Xylenes, Total	39	0.49		mg/Kg	5	11/7/2017 11:14:27 AM	34834
Surr: 4-Bromofluorobenzene	131	80-120	S	%Rec	5	11/7/2017 11:14:27 AM	34834

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW1
Project: Presidente
Collection Date: 11/1/2017 10:08:00 AM
Lab ID: 1711231-004
Matrix: SOIL
Received Date: 11/4/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	120	9.8		mg/Kg	1	11/7/2017 6:46:03 PM	34843
Motor Oil Range Organics (MRO)	56	49		mg/Kg	1	11/7/2017 6:46:03 PM	34843
Surr: DNOP	92.3	70-130		%Rec	1	11/7/2017 6:46:03 PM	34843
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/8/2017 12:25:14 PM	34834
Surr: BFB	114	15-316		%Rec	1	11/8/2017 12:25:14 PM	34834
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	11/8/2017 12:25:14 PM	34834
Benzene	ND	0.024		mg/Kg	1	11/8/2017 12:25:14 PM	34834
Toluene	ND	0.048		mg/Kg	1	11/8/2017 12:25:14 PM	34834
Ethylbenzene	ND	0.048		mg/Kg	1	11/8/2017 12:25:14 PM	34834
Xylenes, Total	ND	0.097		mg/Kg	1	11/8/2017 12:25:14 PM	34834
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	11/8/2017 12:25:14 PM	34834

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: Presidente
Collection Date: 11/1/2017 10:10:00 AM
Lab ID: 1711231-005
Matrix: SOIL
Received Date: 11/4/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	43	9.9		mg/Kg	1	11/7/2017 7:08:12 PM	34843
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/7/2017 7:08:12 PM	34843
Surr: DNOP	94.5	70-130		%Rec	1	11/7/2017 7:08:12 PM	34843
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/7/2017 5:52:29 PM	34834
Surr: BFB	81.4	15-316		%Rec	1	11/7/2017 5:52:29 PM	34834
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	11/7/2017 5:52:29 PM	34834
Benzene	ND	0.024		mg/Kg	1	11/7/2017 5:52:29 PM	34834
Toluene	ND	0.049		mg/Kg	1	11/7/2017 5:52:29 PM	34834
Ethylbenzene	ND	0.049		mg/Kg	1	11/7/2017 5:52:29 PM	34834
Xylenes, Total	ND	0.097		mg/Kg	1	11/7/2017 5:52:29 PM	34834
Surr: 4-Bromofluorobenzene	84.8	80-120		%Rec	1	11/7/2017 5:52:29 PM	34834

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW3
Project: Presidente
Collection Date: 11/1/2017 10:15:00 AM
Lab ID: 1711231-006
Matrix: SOIL
Received Date: 11/4/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	11/7/2017 7:30:15 PM	34843
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/7/2017 7:30:15 PM	34843
Surr: DNOP	87.3	70-130		%Rec	1	11/7/2017 7:30:15 PM	34843
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/7/2017 6:16:02 PM	34834
Surr: BFB	84.3	15-316		%Rec	1	11/7/2017 6:16:02 PM	34834
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	11/7/2017 6:16:02 PM	34834
Benzene	ND	0.024		mg/Kg	1	11/7/2017 6:16:02 PM	34834
Toluene	ND	0.048		mg/Kg	1	11/7/2017 6:16:02 PM	34834
Ethylbenzene	ND	0.048		mg/Kg	1	11/7/2017 6:16:02 PM	34834
Xylenes, Total	ND	0.097		mg/Kg	1	11/7/2017 6:16:02 PM	34834
Surr: 4-Bromofluorobenzene	88.4	80-120		%Rec	1	11/7/2017 6:16:02 PM	34834

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4
Project: Presidente
Collection Date: 11/1/2017 10:13:00 AM
Lab ID: 1711231-007
Matrix: SOIL
Received Date: 11/4/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1900	97		mg/Kg	10	11/8/2017 2:07:26 PM	34843
Motor Oil Range Organics (MRO)	680	480		mg/Kg	10	11/8/2017 2:07:26 PM	34843
Surr: DNOP	0	70-130	S	%Rec	10	11/8/2017 2:07:26 PM	34843
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	27	9.6		mg/Kg	2	11/7/2017 6:39:30 PM	34834
Surr: BFB	198	15-316		%Rec	2	11/7/2017 6:39:30 PM	34834
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.19		mg/Kg	2	11/7/2017 6:39:30 PM	34834
Benzene	ND	0.048		mg/Kg	2	11/7/2017 6:39:30 PM	34834
Toluene	0.10	0.096		mg/Kg	2	11/7/2017 6:39:30 PM	34834
Ethylbenzene	0.11	0.096		mg/Kg	2	11/7/2017 6:39:30 PM	34834
Xylenes, Total	1.5	0.19		mg/Kg	2	11/7/2017 6:39:30 PM	34834
Surr: 4-Bromofluorobenzene	97.5	80-120		%Rec	2	11/7/2017 6:39:30 PM	34834

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711231**

14-Nov-17

Client: Souder, Miller & Associates

Project: Presidente

Sample ID	**MB-34942**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**34942**	RunNo:	**47043**					
Prep Date:	**11/10/2017**	Analysis Date:	**11/10/2017**	SeqNo:	**1501826**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-34942**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**34942**	RunNo:	**47043**					
Prep Date:	**11/10/2017**	Analysis Date:	**11/10/2017**	SeqNo:	**1501827**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711231**

14-Nov-17

Client: Souder, Miller & Associates

Project: Presidente

Sample ID	**LCS-34843**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**34843**		RunNo:	**46928**				
Prep Date:	**11/6/2017**	Analysis Date:	**11/7/2017**		SeqNo:	**1497169**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.4	73.2	114			
Surr: DNOP	4.1		5.000		82.5	70	130			

Sample ID	**MB-34843**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**34843**		RunNo:	**46928**				
Prep Date:	**11/6/2017**	Analysis Date:	**11/7/2017**		SeqNo:	**1497170**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		80.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711231**

14-Nov-17

Client: Souder, Miller & Associates

Project: Presidente

Sample ID	**MB-34834**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**34834**	RunNo:	**46934**					
Prep Date:	**11/6/2017**	Analysis Date:	**11/7/2017**	SeqNo:	**1497692**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		83.9	15	316			

Sample ID	**LCS-34834**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**34834**	RunNo:	**46934**					
Prep Date:	**11/6/2017**	Analysis Date:	**11/7/2017**	SeqNo:	**1497693**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	75.9	131			
Surr: BFB	930		1000		93.4	15	316			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711231**

14-Nov-17

Client: Souder, Miller & Associates

Project: Presidente

Sample ID **MB-34834**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **34834**	RunNo: **46934**
Prep Date: **11/6/2017**	Analysis Date: **11/7/2017**	SeqNo: **1497712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.89		1.000		88.7	80	120			

Sample ID **LCS-34834**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **34834**	RunNo: **46934**
Prep Date: **11/6/2017**	Analysis Date: **11/7/2017**	SeqNo: **1497713** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.85	0.10	1.000	0	85.0	70.1	121			
Benzene	0.91	0.025	1.000	0	90.7	77.3	128			
Toluene	0.91	0.050	1.000	0	91.2	79.2	125			
Ethylbenzene	0.90	0.050	1.000	0	90.3	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	92.1	81.6	129			
Surr: 4-Bromofluorobenzene	0.89		1.000		89.2	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: SMA-CARLSBAD | Work Order Number: 1711231 | RcptNo: 1

Received By: **Andy Freeman** 11/4/2017 12:20:00 PM

Completed By: **Anne Thorne** 11/6/2017 8:48:20 AM

Reviewed By: SRC 11/06/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	# of preserved bottles checked for pH: ____ (<2 or >12 unless noted)
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? ____
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: ____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.8 5.9	Good	Yes			

AT 11/06/17

Chain-of-Custody Record

Client: SMA

Mailing Address: 201 S. Halagueno

Phone #:

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 5 day turn

Project Name: Presidente

Project #:

Project Manager: Austin Weyant

Sampler: HMP

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.7°C + 0.2°C = 5.9°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1711251	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)
11/1/17	9:45	Soil	Spill Pile 1	4oz.		001	✓		✓					✓			
	9:50		Spill Pile 2			002	✓		✓					✓			
	10:05		L1			003	✓		✓					✓			
	10:08		SW1			004	✓		✓								
	10:10		SW2			005	✓		✓								
	10:15		SW3			006	✓		✓								
↓	10:13	↓	SW4	↓		007	✓		✓								

Date	Time	Relinquished by:	Received by:	Date	Time
				11/4/17	1220
Date	Time	Relinquished by:	Received by:	Date	Time

Remarks:

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.

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 05, 2017

Austin Weyant
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX

RE: Presidente OrderNo.: 1711B97

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 1 sample(s) on 11/25/2017 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued December 04, 2017.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-11
Project: Presidente
Collection Date: 11/21/2017 1:00:00 PM
Lab ID: 1711B97-001
Matrix: SOIL
Received Date: 11/25/2017 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	30	30		mg/Kg	20	12/1/2017 1:21:52 AM	35246
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/28/2017 11:04:45 PM	35150
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/28/2017 11:04:45 PM	35150
Surr: DNOP	79.0	70-130		%Rec	1	11/28/2017 11:04:45 PM	35150
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/29/2017 12:12:36 AM	35154
Surr: BFB	87.9	15-316		%Rec	1	11/29/2017 12:12:36 AM	35154
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/29/2017 12:12:36 AM	35154
Toluene	ND	0.050		mg/Kg	1	11/29/2017 12:12:36 AM	35154
Ethylbenzene	ND	0.050		mg/Kg	1	11/29/2017 12:12:36 AM	35154
Xylenes, Total	ND	0.10		mg/Kg	1	11/29/2017 12:12:36 AM	35154
Surr: 4-Bromofluorobenzene	88.8	80-120		%Rec	1	11/29/2017 12:12:36 AM	35154

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711B97**

05-Dec-17

Client: Souder, Miller & Associates

Project: Presidente

Sample ID	**MB-35246**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**35246**	RunNo:	**47438**					
Prep Date:	**11/30/2017**	Analysis Date:	**11/30/2017**	SeqNo:	**1515504**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-35246**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**35246**	RunNo:	**47438**					
Prep Date:	**11/30/2017**	Analysis Date:	**11/30/2017**	SeqNo:	**1515505**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711B97**

05-Dec-17

Client: Souder, Miller & Associates

Project: Presidente

Sample ID	**LCS-35150**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**35150**		RunNo:	**47354**				
Prep Date:	**11/27/2017**	Analysis Date:	**11/28/2017**		SeqNo:	**1512100**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.0	73.2	114			
Surr: DNOP	4.7		5.000		94.1	70	130			

Sample ID	**MB-35150**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**35150**		RunNo:	**47354**				
Prep Date:	**11/27/2017**	Analysis Date:	**11/28/2017**		SeqNo:	**1512101**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711B97**

05-Dec-17

Client: Souder, Miller & Associates

Project: Presidente

Sample ID	**MB-35154**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**35154**	RunNo:	**47368**					
Prep Date:	**11/27/2017**	Analysis Date:	**11/28/2017**	SeqNo:	**1511588**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		88.1	15	316			

Sample ID	**LCS-35154**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**35154**	RunNo:	**47368**					
Prep Date:	**11/27/2017**	Analysis Date:	**11/28/2017**	SeqNo:	**1511589**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.3	75.9	131			
Surr: BFB	1000		1000		102	15	316			

Sample ID	**MB-35190**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**35190**	RunNo:	**47399**					
Prep Date:	**11/28/2017**	Analysis Date:	**11/29/2017**	SeqNo:	**1512977**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		100	15	316			

Sample ID	**LCS-35190**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**35190**	RunNo:	**47399**					
Prep Date:	**11/28/2017**	Analysis Date:	**11/29/2017**	SeqNo:	**1512978**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		106	15	316			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711B97**

05-Dec-17

Client: Souder, Miller & Associates

Project: Presidente

Sample ID	**MB-35154**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**35154**	RunNo:	**47368**					
Prep Date:	**11/27/2017**	Analysis Date:	**11/28/2017**	SeqNo:	**1511613**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.89		1.000		88.7	80	120			

Sample ID	**LCS-35154**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**35154**	RunNo:	**47368**					
Prep Date:	**11/27/2017**	Analysis Date:	**11/28/2017**	SeqNo:	**1511614**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.2	77.3	128			
Toluene	0.93	0.050	1.000	0	92.9	79.2	125			
Ethylbenzene	0.92	0.050	1.000	0	91.7	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	93.1	81.6	129			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.1	80	120			

Sample ID	**MB-35190**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**35190**	RunNo:	**47399**					
Prep Date:	**11/28/2017**	Analysis Date:	**11/29/2017**	SeqNo:	**1512999**	Units:	**%Rec**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		97.7	80	120			

Sample ID	**LCS-35190**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**35190**	RunNo:	**47399**					
Prep Date:	**11/28/2017**	Analysis Date:	**11/29/2017**	SeqNo:	**1513000**	Units:	**%Rec**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.95		1.000		94.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1711B97 RcptNo: 1

Received By: Dennis Suazo 11/25/2017 10:30:00 AM

Completed By: Erin Melendrez 11/27/2017 8:54:46 AM

Reviewed By: DDS 11/27/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	17.0	Good	Yes			

Chain-of-Custody Record

Client: SMA

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day turn

☐ Standard ☐ Rush

Project Name: Presidente

Project #:

Project Manager: Austin Weyant

Sampler: Heather Patterson

On Ice: ☒ Yes ☐ No

Sample Temperature: 17.1 - 0.1(CF) = 17.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F^-,Cl^-,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
		ENM	11/27/17			1711B97																
11/21/17	1:00	Soil	L1-11			-001			X					X								

Date: Time: Relinquished by:

Received by: Date Time 11/25/17 1030

Date: Time: Relinquished by:

Received by: Date Time

Remarks: Lucid

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 D
BLM 2016 SEED MIXES

4/14

Seed Mixture 1 for Loamy Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

4/14

"EXHIBIT A-1"
R/W BLM SERIAL #: NM-xxxxxx
Project name:

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

4/14

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

4/16

BLM SERIAL NO.
COMPANY REFERENCE:

Seed Mixture 3, for Shallow Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass (*Setaria macrostachya*)	1.0
Green Sprangletop (*Leptochloa dubia*)	2.0
Sideoats Grama (*Bouteloua curtipendula)*	5.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

4/16

EXHIBIT
Date
BLM Serial No.:
Company Reference:

Mixture 4, for Gypsum Sites

The holder shall seed all the disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Alkli Sacaton (*Sporobolus airoides*)	1.5
DWS~ Four-wing saltbush (*Atriplex canescens*)	8.0

~DWS: DeWinged Seed

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

4/14

Seed Mixture for LPC/HEA Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

The disturbed area associated with pipeline construction will be disked in order to loosen the soil. Seed application will be performed by dispersing seed through a hydroseeder with the appropriate amount of hydromulch to assist in an even rate of application. After application, a chain harrow will be implemented to cover the seed with soil to ensure the seed is had the proper depth (approximate ½ inch). Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	5lbs/A
Big Bluestem	5lbs/A
Plains Coreopsis	5lbs/A
Sand Dropseed	1lbs/A
Ragweed	4lbs/A
Dove weed	3lbs/A
Pig weed	2lbs/A
Black oil sunflower	3lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

4/14

BLM SERIAL #:
COMPANY REFERENCE:
WELL # & NAME:

Aplomado Falcon Habitat Seed Mixture

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Buffalograss (Buchloe dactyloides))	4 lbs/acre
Blue grama (Bouteloua gracilis)	1 lb/acre
Cane bluestem (Bothriochloa barbinodis)	5 lbs/acre
Sideoats grama (Bouteloua curtipendula)	5 lbs/acre
Plains bristlegrass (Setaria macrostachya)	6 lbs/acre

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

Goodwin

- Rock Surface Mix

2-19-08

Recommended Seeding Mixes for Project Reseeding

Species	% of Mix	PLS/Acre *
~~Lehmann Lovegrass~~	~~20%~~	~~0.5~~
Boer Lovegrass	20% 30%	0.5
Sideoats Grama	~~20%~~ 30%	3.0
Blue Grama	10%	2.0
Arizona Fescue	10%	1.0
Prairie June Grass	10%	1.0
Annual Rye	10%	7.0
Totals	**100%**	15

* pounds per acre/pure live seed - coverage to be verified by seed supplier