



August 28, 2013



AMARILLO  
921 North Bivins  
Amarillo, Texas 79107  
Phone 806.467.0607  
Fax 806.467.0622

Mr. Mike Bratcher  
**NMOCD District 2**  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210

ARTESIA  
408 West Texas Ave.  
Artesia, New Mexico 88210  
Phone 575.746.8768  
Fax 575.746.8905

Subject: **Soil Assessment and Remediation Work Plan**  
Lime Rock Resources  
ASAU Injection Line

Dear Mr. Bratcher,

HOBBS  
318 East Taylor Street  
Hobbs, New Mexico 88240  
Phone 575.393.4261  
Fax 575.393.4658

Lime Rock Resources (Lime Rock) has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The results of our soil assessment and proposed remediation activities consist of the following.

#### **Incident Date**

MIDLAND  
2901 State Hwy 349  
Midland, Texas 79706  
Phone 432.522.2133  
Fax 432.522.2180

The release was discovered July 17, 2013 at 8:00 am

#### **Background Information**

OKLAHOMA CITY  
7700 North Hudson Avenue  
Suite 10  
Oklahoma City, Oklahoma 73116  
Phone 405.486.7030  
Fax 806.467.0622

The ASAU Injection Line release is located approximately eight (8) miles southeast of Artesia, New Mexico. The legal location for the site is Unit letter K of Section 11, Township 18 South, Range 26 East. More specifically the latitude and longitude for the release are 32.75924 North and -104.35247 West. A site plan is presented in Appendix I.

SAN ANTONIO  
11 Commercial Place  
Schertz, Texas 78154  
Phone 210.265.8025  
Fax 210.568.2191

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of the Reagan loam with 0 to 1 percent slopes. According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of Artesia group shell faces forming a broad South South-East trending outcrop from Glorieta to the Artesia area. Drainage courses in this area are normally dry. Ground water in the project vicinity is approximately 30-feet below ground surface (bgs), according to the New Mexico Office of the State Engineer database. See Appendix II for the referenced groundwater data.

The ranking for this site is **20** based on the following:

ENVIRONMENTAL CONSULTING  
ENGINEERING  
DRILLING  
CONSTRUCTION  
SPILL MANAGEMENT  
GENERAL CONTRACTING

Depth to ground water	<100'
Wellhead Protection Area	<1000'
Distance to surface water body	>1000'

Toll Free: 866.742.0742  
www.talonlpe.com

## Incident Description

An injection line running under an alfalfa field leaked causing a release of approximately 12bbls of produced water. Talon/LPE was contacted to assess and contain the fluid. Talon personnel collected soil samples and constructed berms to contain the remaining fluid. The impacted area measured approximately 74x94 feet at its widest point and had a 25-foot wide flow path that stretched approximately 85-feet south of the main pooling area. See the site plan is presented in Appendix I

## Laboratory Results

See Appendix III for complete report of laboratory results.

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO
S-1	0	1020	32000	6670	8730
S-1	0.5	18.9	21600	59.6	101
S-1	1	--	8800	341	607
S-1	2	--	3560	1720	2150
S-1	3	--	10300	69.9	116
S-1	6	--	921*	--	--
S-1	9	--	310	--	--
S-1	10	--	208	--	--
S-1	12	--	32	--	--
S-2	0	ND	12800	ND	ND
S-2	0.5	ND	8800	ND	ND
S-2	1	--	1920	--	--
S-2	2	--	288	--	--
S-2	3	--	224	--	--
S-3	0	ND	32	ND	ND
S-3	0.5	ND	80	ND	ND
S-4	0	ND	32	ND	ND
S-4	1	ND	16	ND	ND

(--) Analyte not tested

(ND) Analyte not detected

(\*) Field Titration Data

Based upon the site ranking of **20**, NMOCD Recommended Remedial Action Levels (RRAL's) for this project is 50 mg/kg for BTEX, 10 mg for Benzene, and 100 mg/kg for TPH.

## Proposed Remedial Actions

- The area in the vicinity to S-1 will be excavated to a depth of 5-feet bgs.
- The areas in the vicinity of S-2 will be excavated to a depth of 1.5-feet bgs.
- Soil samples will be taken and tested for chlorides to confirm that all of the impacted soil was removed.
- The excavated areas will be backfilled with topsoil.
- A final report documenting all activities, laboratory data, and a final C-141 will be submitted to the NMOCD Artesia office upon completion.

Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,



Sheldon Hitchcock  
Environmental Scientist



David J. Adkins  
District Manager

# **SITE PLAN**

Alfalfa Field

Alfalfa Field

House

S-3

S-2

S-1

Leak\*

S-4

Aaron Road



0 20 40

Scale in Feet

Legend

- ◆ - Sample Location
- - Pipeline



Date: 07/25/2013

Scale: 1" = 40'

Drawn By: TJS

ASAU Injection Line  
Lime Rock Resources  
Eddy County, New Mexico  
Figure 1 - Site Plan

**GROUNDWATER DATA**  
**INITIAL C-141**



# 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-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 03634		ED		3	1	4	11	18S	26E	560757	3624835*	317	1797		
RA 03639		ED		4	4	3	11	18S	26E	560555	3624429*	515	1710		
RA 00012	O	ED		3	4		11	18S	26E	560858	3624531*	569	600		
RA 03596		ED		3	4		11	18S	26E	560858	3624531*	569	1736		
RA 00011	O	ED		3	3		11	18S	26E	560054	3624529*	571	1100		
RA 00011 A		ED		3	3		11	18S	26E	560054	3624529*	571	1100		
RA 00012 A		ED		3	3	4	11	18S	26E	560757	3624430*	587	600		
RA 03731		ED		1	1	1	14	18S	26E	559953	3624223*	871	120	30	90
RA 02389		ED		1	2	2	15	18S	26E	559551	3624221*	1152	209		
RA 01288		ED		3	3	3	02	18S	26E	559950	3626045*	1219	186	50	136
RA 01288 CLW319630	O	ED		3	3	3	02	18S	26E	559950	3626045*	1219	200		
RA 03600		ED		2	3	2	14	18S	26E	560956	3623821*	1221	955		
RA 02122		ED		1	2	2	10	18S	26E	559548	3625839*	1281	115	15	100
RA 03756		ED		1	1	4	10	18S	26E	559147	3625027*	1312	148	55	93
RA 01171		ED		1	3	4	10	18S	26E	559149	3624622*	1343	864	8	856
RA 02432		ED		2	3	1	12	18S	26E	561764	3625443*	1403	100		
RA 02808		ED		4	4	03	18S	26E	559648	3626145*	1454	100	30	70	

Average Depth to Water: **31 feet**

Minimum Depth: **8 feet**

Maximum Depth: **55 feet**

Record Count: 17

Basin/County Search:

County: Eddy

UTMNAD83 Radius Search (in meters):

Easting (X): 560456

Northing (Y): 3624935

Radius: 1500

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

District I  
1625 N. French Dr., Hobbs, NM 88249  
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

RECEIVED

JUL 23 2013

NMOC D ARTESIA

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

Name of Company Lime Rock Resources 277558		Contact Michael Barrett	
Address 1111 Bagby Street Suite 4600, Houston, TX 77002		Telephone No. 575-623-8424	
Facility Name ASAU Injection Line		Facility Type Flow Line	
Surface Owner Private		Mineral Owner State	
API No.			

### LOCATION OF RELEASE

Unit Letter K	Section 11	Township 18S	Range 26E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
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Latitude 32.75924 Longitude -104.35247

### NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 12 bbls	Volume Recovered 0
Source of Release Flowline Leak	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 7/17/2013 @ 8:00 am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

An injection flowline running under an alfalfa field leaked causing a release of approximately 12bbls of produced water. Talon/LPE was contacted to do an initial site assessment and contain the fluid. Talon personnel collected soil samples and constructed berms to contain the remaining fluid.

Describe Area Affected and Cleanup Action Taken.\*

The impacted area measured approximately 74 x 94 feet at its widest point and had a 24 foot wide flow path that stretched approximately 85 feet south of the main pooling area. Talon will draft a remediation work plan and begin remedial activities upon its approval.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC D 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 NMOC D 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, NMOC D 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: <i>Michael Barrett</i>		OIL CONSERVATION DIVISION	
Printed Name: Michael Barrett		Approved by Environmental Specialist Signed By <i>Mike Bennett</i>	
Title: Production Supervisor		Approval Date JUL 25 2013	Expiration Date:
E-mail Address: mbarrett@limerockresources.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 7-23-13 Phone: 575-623-8424		Remediation per OCD Rule & Guidelines. SUBMIT REMEDIATION PROPOSAL NO LATER THAN:	

\* Attach Additional Sheets If Necessary

FJMW 1320654513

iJMW 1320655624

August 25, 2013

2RP-1747



# LABORATORY RESULTS



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

July 24, 2013

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: ASAU INJECTION LINE

Enclosed are the results of analyses for samples received by the laboratory on 07/17/13 15:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	07/17/2013	Sampling Date:	07/17/2013
Reported:	07/24/2013	Sampling Type:	Soil
Project Name:	ASAU INJECTION LINE	Sampling Condition:	Cool & Intact
Project Number:	701307.049.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S/1 - O" (H301674-01)**

BTEX 8021B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	155	5.00	07/19/2013	ND	1.92	96.0	2.00	5.68	
Toluene*	340	5.00	07/19/2013	ND	1.91	95.7	2.00	5.61	
Ethylbenzene*	177	5.00	07/19/2013	ND	2.03	102	2.00	5.15	
Total Xylenes*	343	15.0	07/19/2013	ND	6.17	103	6.00	5.53	
Total BTEX	1020	30.0	07/19/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32000	16.0	07/22/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	6670	100	07/19/2013	ND	175	87.6	200	5.96		
DRO >C10-C28	8730	100	07/19/2013	ND	180	90.1	200	8.88		

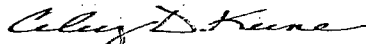
Surrogate: 1-Chlorooctane 160 % 65.2-140

Surrogate: 1-Chlorooctadecane 316 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	07/17/2013	Sampling Date:	07/17/2013
Reported:	07/24/2013	Sampling Type:	Soil
Project Name:	ASAU INJECTION LINE	Sampling Condition:	Cool & Intact
Project Number:	701307.049.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S/1 - 6" (H301674-02)**

BTEX 8021B		mg/kg		Analyzed By: DW				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	2.51	0.050	07/19/2013	ND	1.92	96.0	2.00	5.68	
Toluene*	5.22	0.050	07/19/2013	ND	1.91	95.7	2.00	5.61	
Ethylbenzene*	3.42	0.050	07/19/2013	ND	2.03	102	2.00	5.15	
Total Xylenes*	7.74	0.150	07/19/2013	ND	6.17	103	6.00	5.53	
Total BTEX	18.9	0.300	07/19/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 131 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	21600	16.0	07/22/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	59.6	10.0	07/19/2013	ND	175	87.6	200	5.96	
DRO >C10-C28	101	10.0	07/19/2013	ND	180	90.1	200	8.88	

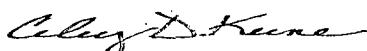
Surrogate: 1-Chlorooctane 82.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 94.2 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

 Received: 07/17/2013  
 Reported: 07/24/2013  
 Project Name: ASAU INJECTION LINE  
 Project Number: 701307.049.01  
 Project Location: NOT GIVEN

 Sampling Date: 07/17/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S/2 - O" (H301674-03)**

BTEX 8021B		mg/kg	Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2013	ND	1.92	96.0	2.00	5.68	
Toluene*	<0.050	0.050	07/19/2013	ND	1.91	95.7	2.00	5.61	
Ethylbenzene*	<0.050	0.050	07/19/2013	ND	2.03	102	2.00	5.15	
Total Xylenes*	<0.150	0.150	07/19/2013	ND	6.17	103	6.00	5.53	
Total BTEX	<0.300	0.300	07/19/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIB) 104 % 89.4-126

Chloride, SM4500Cl-B		mg/kg	Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12800	16.0	07/22/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/19/2013	ND	175	87.6	200	5.96	
DRO >C10-C28	<10.0	10.0	07/19/2013	ND	180	90.1	200	8.88	

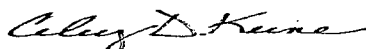
Surrogate: 1-Chlorooctane 82.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 99.3 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	07/17/2013	Sampling Date:	07/17/2013
Reported:	07/24/2013	Sampling Type:	Soil
Project Name:	ASAU INJECTION LINE	Sampling Condition:	Cool & Intact
Project Number:	701307.049.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S/2 - 6" (H301674-04)**

BTX 8021B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2013	ND	1.92	96.0	2.00	5.68	
Toluene*	<0.050	0.050	07/24/2013	ND	1.91	95.7	2.00	5.61	
Ethylbenzene*	<0.050	0.050	07/24/2013	ND	2.03	102	2.00	5.15	
Total Xylenes*	<0.150	0.150	07/24/2013	ND	6.17	103	6.00	5.53	
Total BTX	<0.300	0.300	07/24/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 105 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8800	16.0	07/22/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/19/2013	ND	175	87.6	200	5.96	
DRO >C10-C28	<10.0	10.0	07/19/2013	ND	180	90.1	200	8.88	

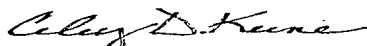
Surrogate: 1-Chlorooctane 79.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 91.7 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	07/17/2013	Sampling Date:	07/17/2013
Reported:	07/24/2013	Sampling Type:	Soil
Project Name:	ASAU INJECTION LINE	Sampling Condition:	Cool & Intact
Project Number:	701307.049.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S/3 - O" (H301674-05)**

BTEX 8021B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/22/2013	ND	2.02	101	2.00	10.3	
Toluene*	<0.050	0.050	07/22/2013	ND	2.03	102	2.00	10.8	
Ethylbenzene*	<0.050	0.050	07/22/2013	ND	2.16	108	2.00	10.9	
Total Xylenes*	<0.150	0.150	07/22/2013	ND	6.53	109	6.00	11.6	
Total BTEX	<0.300	0.300	07/22/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 105 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/22/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/19/2013	ND	175	87.6	200	5.96	
DRO >C10-C28	<10.0	10.0	07/19/2013	ND	180	90.1	200	8.88	

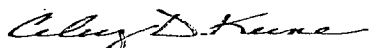
Surrogate: 1-Chlorooctane 74.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 89.5 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	07/17/2013	Sampling Date:	07/17/2013
Reported:	07/24/2013	Sampling Type:	Soil
Project Name:	ASAU INJECTION LINE	Sampling Condition:	Cool & Intact
Project Number:	701307.049.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S/3 - 6" (H301674-06)**

BTEX 8021B		mg/kg	Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/22/2013	ND	2.02	101	2.00	10.3	
Toluene*	<0.050	0.050	07/22/2013	ND	2.03	102	2.00	10.8	
Ethylbenzene*	<0.050	0.050	07/22/2013	ND	2.16	108	2.00	10.9	
Total Xylenes*	<0.150	0.150	07/22/2013	ND	6.53	109	6.00	11.6	
Total BTEX	<0.300	0.300	07/22/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 105 % 89.4-126

Chloride, SM4500Cl-B		mg/kg	Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/22/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/19/2013	ND	175	87.6	200	5.96	
DRO >C10-C28	<10.0	10.0	07/19/2013	ND	180	90.1	200	8.88	

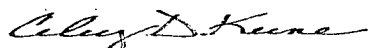
Surrogate: 1-Chlorooctane 79.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 96.0 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	07/17/2013	Sampling Date:	07/17/2013
Reported:	07/24/2013	Sampling Type:	Soil
Project Name:	ASAU INJECTION LINE	Sampling Condition:	Cool & Intact
Project Number:	701307.049.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S/4 - O" (H301674-07)**

BTEX 8021B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/22/2013	ND	2.02	101	2.00	10.3	
Toluene*	<0.050	0.050	07/22/2013	ND	2.03	102	2.00	10.8	
Ethylbenzene*	<0.050	0.050	07/22/2013	ND	2.16	108	2.00	10.9	
Total Xylenes*	<0.150	0.150	07/22/2013	ND	6.53	109	6.00	11.6	
Total BTEX	<0.300	0.300	07/22/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 105 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/22/2013	ND	432	108	400	3.77	

TPH 8015M			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15		

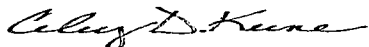
Surrogate: 1-Chlorooctane 91.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 110 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	07/17/2013	Sampling Date:	07/17/2013
Reported:	07/24/2013	Sampling Type:	Soil
Project Name:	ASAU INJECTION LINE	Sampling Condition:	Cool & Intact
Project Number:	701307.049.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S/4 - 6" (H301674-08)**

BTEX 8021B			mg/kg		Analyzed By: DW				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/22/2013	ND	2.02	101	2.00	10.3	
Toluene*	<0.050	0.050	07/22/2013	ND	2.03	102	2.00	10.8	
Ethylbenzene*	<0.050	0.050	07/22/2013	ND	2.16	108	2.00	10.9	
Total Xylenes*	<0.150	0.150	07/22/2013	ND	6.53	109	6.00	11.6	
Total BTEX	<0.300	0.300	07/22/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 104 % 89.4-126

Chloride, SM4500Cl-B			mg/kg		Analyzed By: DW				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/22/2013	ND	432	108	400	3.77	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99	
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15	

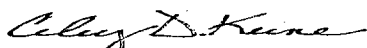
Surrogate: 1-Chlorooctane 79.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 94.2 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

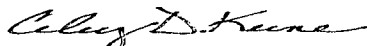
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: Talon/LPE		BILL TO		ANALYSIS REQUEST																					
Project Manager: O. Adk'as		P.O. #:																							
Address: 408 W. TEXAS AVE.		Company: Talon/LPE																							
City: Artesia State: NM Zip: 88210		Attn:																							
Phone #: 575-746-8768 Fax #: 575-746-8905		Address:																							
Project #: 701302.049.01 Project Owner: Lime Rock		City:																							
Project Name: ASAC Injection Line		State: Zip:																							
Project Location:		Phone #:																							
Sampler Name: Sheldon Hitchcock		Fax #:																							
FOR LAB USE ONLY				MATRIX				PRESERV.		SAMPLING															
Lab I.D.	Sample I.D.	(GRAB OR C/COMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	DATE	TIME											
H3011674																									
1	8/1-0"	G	1			/				/			7/17/13	9:49	/	/	/								
2	8/1-6"	G	1			/				/			"	9:53	/	/	/								
3	8/2-0"	G	1			/				/			"	10:66	/	/	/								
4	8/2-6"	G	1			/				/			"	10:10	/	/	/								
5	8/3-0"	G	1			/				/			"	10:27	/	/	/								
6	8/3-6"	G	1			/				/			"	10:30	/	/	/								
7	8/4-0"	G	1			/				/			"	10:40	/	/	/								
8	8/4-6"	G	1			/				/			"	10:42	/	/	/								

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Relinquished By: <i>Sheldon Hitchcock</i>	Date: 7/17/13	Received By: <i>Paul Ruto</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: 1:57		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By: <i>Paul Ruto</i>	Date: 7/17/13	Received By: <i>Jodi Benson</i>	REMARKS:	
	Time: 3:20			
Delivered By: (Circle One)		Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	CHECKED BY: <i>JH</i>	
Sampler - UPS - Bus - Other:	1.6°C	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

#54



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

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August 08, 2013

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: ASAU INJECTION LINE

Enclosed are the results of analyses for samples received by the laboratory on 08/02/13 8:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
DAVID ADKINS  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	08/02/2013	Sampling Date:	07/30/2013
Reported:	08/08/2013	Sampling Type:	Soil
Project Name:	ASAU INJECTION LINE	Sampling Condition:	Cool & Intact
Project Number:	701307.049.01	Sample Received By:	Daniel Wade
Project Location:	NOT GIVEN		

**Sample ID: S-1 1' (H301819-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8800	16.0	08/05/2013	ND	432	108	400	3.64	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	341	10.0	08/06/2013	ND	188	93.9	200	3.98	
DRO >C10-C28	607	10.0	08/06/2013	ND	209	104	200	5.31	
Surrogate: 1-Chlorooctane		108 %	65.2-140						
Surrogate: 1-Chlorooctadecane		121 %	63.6-154						

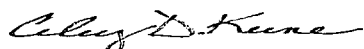
**Sample ID: S-1 2' (H301819-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3560	16.0	08/05/2013	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	1720	50.0	08/06/2013	ND	188	93.9	200	3.98		
DRO >C10-C28	2150	50.0	08/06/2013	ND	209	104	200	5.31		
Surrogate: 1-Chlorooctane		152 %	65.2-140							
Surrogate: 1-Chlorooctadecane		143 %	63.6-154							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
DAVID ADKINS  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received: 08/02/2013  
Reported: 08/08/2013  
Project Name: ASAU INJECTION LINE  
Project Number: 701307.049.01  
Project Location: NOT GIVEN

Sampling Date: 07/30/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Daniel Wade

**Sample ID: S-1 3' (H301819-03)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10300	16.0	08/05/2013	ND	432	108	400	3.64	
TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	69.9	10.0	08/06/2013	ND	188	93.9	200	3.98	
DRO >C10-C28	116	10.0	08/06/2013	ND	209	104	200	5.31	

Surrogate: 1-Chlorooctane 91.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 111 % 63.6-154

**Sample ID: S-2 1' (H301819-04)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1920	16.0	08/05/2013	ND	432	108	400	3.64	

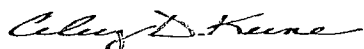
**Sample ID: S-2 2' (H301819-05)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	08/05/2013	ND	432	108	400	3.64	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
DAVID ADKINS  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received: 08/02/2013  
Reported: 08/08/2013  
Project Name: ASAU INJECTION LINE  
Project Number: 701307.049.01  
Project Location: NOT GIVEN

Sampling Date: 07/30/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Daniel Wade

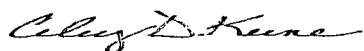
**Sample ID: S-2 3' (H301819-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	08/05/2013	ND	432	108	400	3.64	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



### Notes and Definitions


- S-04            The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND             Analyte NOT DETECTED at or above the reporting limit
- RPD            Relative Percent Difference
- \*\*              Samples not received at proper temperature of 6°C or below.
- \*\*\*             Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
- Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



August 20, 2013

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: ASAU INJECTION LINE

Enclosed are the results of analyses for samples received by the laboratory on 08/19/13 15:12.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

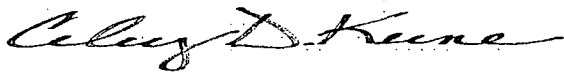
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Caley D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	08/19/2013	Sampling Date:	08/19/2013
Reported:	08/20/2013	Sampling Type:	Soil
Project Name:	ASAU INJECTION LINE	Sampling Condition:	** (See Notes)
Project Number:	701307.049.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S-1 9' (H301975-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	640	16.0	08/20/2013	ND	416	104	400	0.00	

**Sample ID: S-1 10' (H301975-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	08/20/2013	ND	416	104	400	0.00	

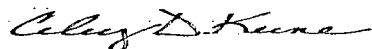
**Sample ID: S-1 12' (H301975-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	08/20/2013	ND	416	104	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

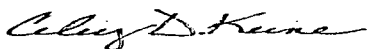
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: <u>Talon/LPE</u>		BILL TO		ANALYSIS REQUEST																							
Project Manager: <u>D. Perkins</u>		P.O. #:																									
Address: <u>408 W Texas</u>		Company: <u>Talon/LPE</u>																									
City: <u>Albuquerque</u> State: <u>NM</u> Zip: <u>88100</u>		Attn:																									
Phone #: <u>575-746-8786</u> Fax #: <u>575-746-8785</u>		Address:																									
Project #: <u>701307.049.01</u> Project Owner: <u>Limback</u>		City:																									
Project Name: <u>ASHA injection liner</u>		State: Zip:																									
Project Location:		Phone #:																									
Sampler Name: <u>S. Hiltack</u>		Fax #:																									
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.		SAMPLING																
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE/COOL													OTHER	DATE	TIME
	H30A75																										
	1	S-2 / 9'	/				/																			9/17/13	12:32
	2	S-1 / 10'	/				/																			S	12:54
	3	S-2 / 12'	/				/																			S	1:15

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Relinquished By: <u>[Signature]</u>	Date: <u>9-19-2013</u>	Received By: <u>Godi Benson</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: <u>3:12</u>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:		<u>RUSH!!</u>	
Delivered By: (Circle One)				
Sampler - UPS - Bus - Other:		Sample Condition: Cool <input type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	CHECKED BY: <u>[Signature]</u>	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

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