



Electronic Correspondence

November 7, 2012

Mr. Mike Bratcher  
State of New Mexico  
Oil Conservation Division  
811 S. 1st Street  
Artesia, NM 88210  
[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)

Re: Corrective Action Plan  
LINN Energy, JL Keel B 22  
API No.: 30-015-05082  
Legal: Unit L, Section 5, T17S, R31E, 1980 FSL, 660 FWL, Eddy Co., NM  
GPS: N32.8620, W103.8983

Dear Mike:

Etech Environmental & Safety Solutions, Inc. (Etech) is pleased to submit the following corrective action plan on the aforementioned site for your review and approval.

### **Scope of Work**

The scope of this project is for the remediation of a produced water/hydrocarbon impact. Completion of remediation will involve the following actions:

1. Placement of a one-call for utility location.
2. Excavation of impacted soils as far as practicable or until the chloride levels are less than 1,000 mg/kg and/or hydrocarbon levels of less than 5,000 mg/kg are reached. A copy of the assessment map and the screening data are attached. Please note: The delineation data was collected from the lowest point in the impacted area where it was evident liquids had pooled. The assessment map includes the delineation data and the sampling points / hand auger points (SP's) that will be used to determine that the excavation has reached remediation objectives.
3. During the course of excavation soil samples will be screened on site to determine the progress of the remediation. Screening is achieved using a YSI chloride meter with a tolerance of +/- 6% which is the same tolerance as laboratory titration methods.
4. Once the screening determines the remediation objectives have been reached, confirmation samples will be collected from the bottom of the excavation to confirm that remediation goals have been reached. If the excavation depth is greater than 2 feet vertical, side wall samples will be collected as well.
5. If the results of analysis determine that the chloride levels are above regulatory threshold levels, additional excavation will be performed until the remediation objectives are met. It should be noted that due to the depth of the impact from the delineation, there may be circumstance that arise where additional excavation is not practical. This includes

reaching the limits of excavation with chlorides that are close to objective levels, safety issues such as the close proximity of equipment, or other site specific issues. In this event, it will be likely to install a liner or a layer of gypsum at the bottom of the excavation before backfilling.

6. Backfilling of the excavated area(s) will be achieved by placing clean fill similar to the existing material from the site to within 2 foot of the surface. The last two feet will be backfilled with top soil of similar configuration to the surrounding area and contoured to match the existing grade.
7. Where pad areas or interior areas of tank batteries are excavated, they will be backfilled to within 6 inches of surface then backfilled to grade with compacted caliche. Any firewalls or containment berms removed during remediation will be reinstalled.
8. The site will be seeded with a 50/50 mixture of BLM #2 and #4 seed. Seeding will take place when the seasonal conditions are conducive to maximizing the potential for seed germination. Actual seeding will be accomplished by broadcast or drilling; whichever is the most practical for the site.

### **Notifications and Special Conditions**

1. The OCD and BLM will be notified prior to the commencement of on-site operations.
2. The OCD and BLM will be notified prior to each sampling event to allow the opportunity to witness the sampling events. Splits will be made available if requested.
3. The OCD and BLM (if applicable) will be notified when the site is closed for final inspection prior to seeding.
4. A final report documenting the closure of the site will be submitted along with a final C-141.

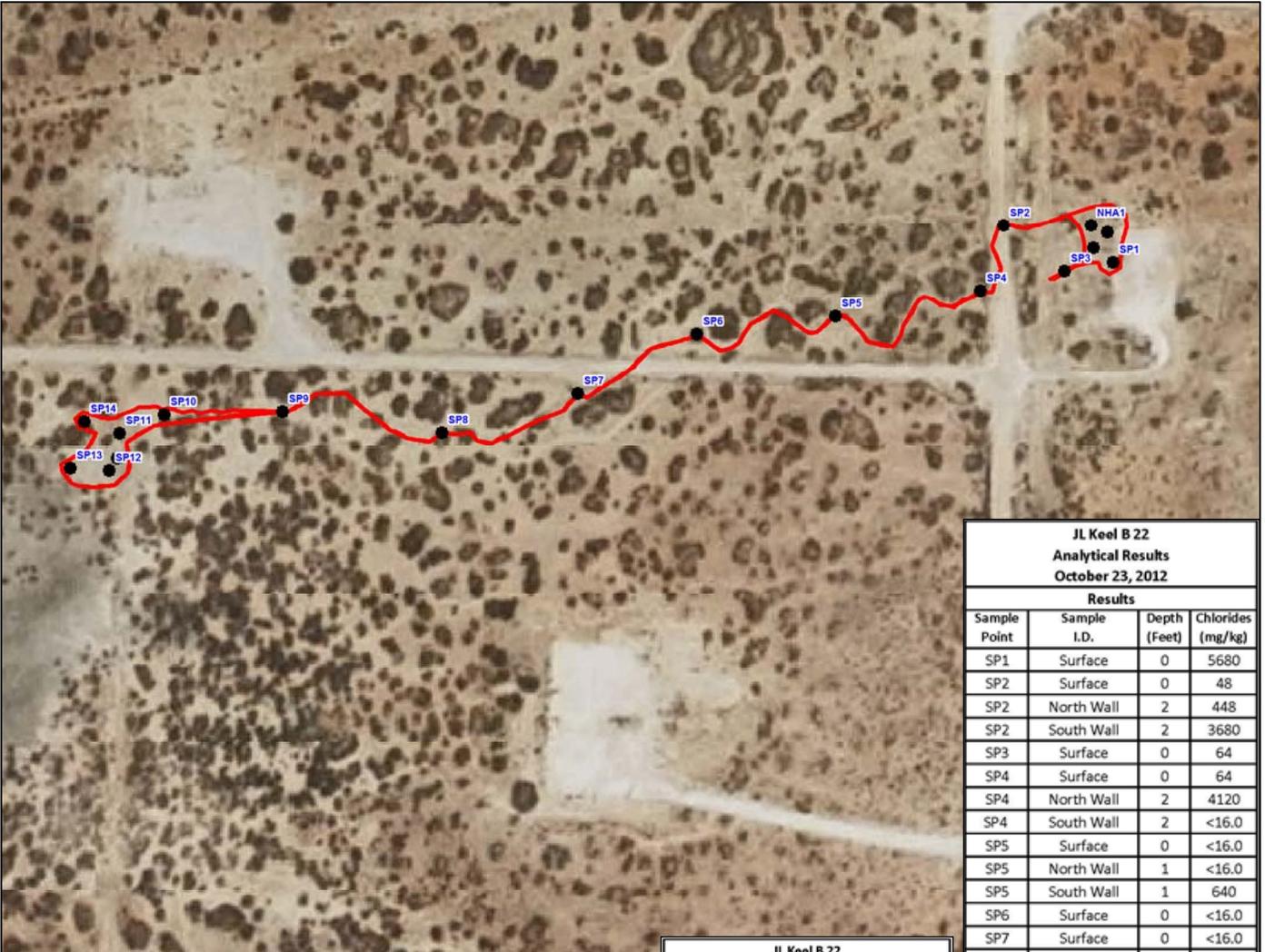
Thank you for your assistance on this matter. Should you have any questions, require additional information, or have any additional stipulations for this site, please contact Mr. Gary Wink at (575) 738-1739 (Office) or via email at [gawink@linnenergy.com](mailto:gawink@linnenergy.com) or myself at (432) 563-2200 (office) or via email at [kit@etechnv.com](mailto:kit@etechnv.com).

Respectfully:



Kit Prichard  
Environmental Professional

cc: Terry Gregston, BLM Carlsbad District Office



**JL Keel B 22 Analytical Results October 23, 2012**

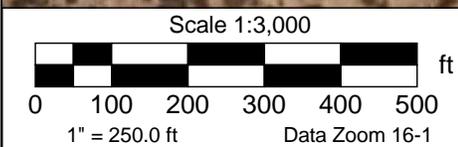
Results			
Sample Point	Sample I.D.	Depth (Feet)	Chlorides (mg/kg)
SP1	Surface	0	5680
SP2	Surface	0	48
SP2	North Wall	2	448
SP2	South Wall	2	3680
SP3	Surface	0	64
SP4	Surface	0	64
SP4	North Wall	2	4120
SP4	South Wall	2	<16.0
SP5	Surface	0	<16.0
SP5	North Wall	1	<16.0
SP5	South Wall	1	640
SP6	Surface	0	<16.0
SP7	Surface	0	<16.0
SP8	Surface	0	<16.0
SP8	North Wall	1	<16.0
SP8	South Wall	1	816
SP9	Surface	0	<16.0
SP9	North Wall	1	432
SP9	South Wall	1	<16.0
SP10	Surface	0	<16.0
SP10	North Wall	1	<16.0
SP10	South Wall	1	864
SP11	Surface	0	<16.0
SP11	North Wall	2	<16.0
SP11	South Wall	2	272
SP12	Surface	0	<16.0
SP12	North Wall	2	<16.0
SP13	Surface	0	<16.0
SP13	West Wall	2	<16.0
SP14	Surface	0	<16.0
SP14	South Wall	2	<16.0
SP15	Surface	0	<16.0
SP15	East Wall	2	<16.0
SP16	Surface	0	48
NHS1	Surface	0	48
NHS2	Surface	0	3800
NHS3	Surface	0	384

**JL Keel B 22 Analytical Results October 9, 2012**

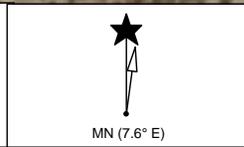
Results			
Date	Sample I.D.	Depth (Feet)	Chlorides (mg/kg)
10/9/2012	HA 1	2-3	5200
10/9/2012	HA 2	0-1	<16.0
10/9/2012	HA 4	0-1	32
10/9/2012	HA 6	0-1	16
10/9/2012	HA 6	4-5	128
10/9/2012	HA 8	1-2	16
10/9/2012	HA 10	0-1	128
10/9/2012	HA 10	4-5	720
10/9/2012	HA 11	0-1	16
10/9/2012	HA 11	11-12	<16.0
10/9/2012	HA 12	0-1	<16.0
10/9/2012	HA 12	9-10	<16.0
10/9/2012	HA 13	0-1	<16.0
10/9/2012	HA 13	8-9	<16.0
10/9/2012	HA 14	0-1	32
10/9/2012	HA 14	6-7	<16.0
10/9/2012	HA 15	0-1	16
10/9/2012	HA 15	6-7	<16.0
10/9/2012	NHA1	0-1	224
10/9/2012	NHA1	1-2	64
10/9/2012	NHA2	0-1	3640
10/9/2012	NHA3	0-1	592

**JL Keel B 22 Analytical Results October 9, 2012**

Sample Information		TPH Results (mg/kg)		BTEX Results (mg/L)				
Date	Sample I.D.	Depth (ft)	GRO	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes
10/09/12	HA 1	2-3	<10.0	466.0	<0.2	<0.2	<0.2	<0.6
10/09/12	HA 2	0-1	<10.0	<10.0	<0.2	<0.2	<0.2	<0.6
10/09/12	HA 4	0-1	<10.0	<10.0	<0.2	<0.2	<0.2	<0.6
10/09/12	HA 6	0-1	<10.0	<10.0	<0.2	<0.2	<0.2	<0.6
10/09/12	HA 6	4-5	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 8	1-2	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 10	0-1	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 10	4-5	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 11	0-1	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 11	11-12	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 12	0-1	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 12	9-10	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 13	0-1	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 13	8-9	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 14	0-1	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 14	6-7	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 15	0-1	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	HA 15	6-7	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	NHA1	0-1	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	NHA1	1-2	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	NHA2	0-1	<10.0	<10.0	<0.05	<0.05	<0.05	<0.15
10/09/12	NHA3	0-1	<50.0	<50.0	<0.05	<0.05	<0.05	<0.15



LINN Energy  
 JL Keel B 22  
 Sample Points and Excavation Map



Data use subject to license.

© DeLorme. XMap® 7.

www.delorme.com

October 09, 2012

FRED HOLMES

ETECH Environmental & Safety Solutions, Inc.

P. O. BOX 8469

MIDLAND, TX 79708

RE: J L KEEL B #22

Enclosed are the results of analyses for samples received by the laboratory on 10/02/12 17:00.

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:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: HA 1 2-3 (H202404-01)**

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/06/2012	ND	2.20	110	2.00	2.03	
Toluene*	<0.200	0.200	10/06/2012	ND	2.03	102	2.00	2.43	
Ethylbenzene*	<0.200	0.200	10/06/2012	ND	2.05	102	2.00	2.41	
Total Xylenes*	<0.600	0.600	10/06/2012	ND	6.04	101	6.00	2.51	

*Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>5200</b>	16.0	10/05/2012	ND	400	100	400	0.00	

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	10/04/2012	ND	190	94.9	200	0.855	
<b>DRO &gt;C10-C28</b>	<b>466</b>	10.0	10/04/2012	ND	186	93.1	200	1.39	

*Surrogate: 1-Chlorooctane 90.3 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 101 % 63.6-154*

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/02/2012  
 Reported: 10/09/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/02/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 2 0-1 (H202404-02)**

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/06/2012	ND	2.20	110	2.00	2.03	
Toluene*	<0.200	0.200	10/06/2012	ND	2.03	102	2.00	2.43	
Ethylbenzene*	<0.200	0.200	10/06/2012	ND	2.05	102	2.00	2.41	
Total Xylenes*	<0.600	0.600	10/06/2012	ND	6.04	101	6.00	2.51	

*Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/05/2012	ND	400	100	400	4.08	

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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	

*Surrogate: 1-Chlorooctane 93.7 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 91.6 % 63.6-154*

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/02/2012  
 Reported: 10/09/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/02/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 4 0-1 (H202404-03)**

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/06/2012	ND	2.20	110	2.00	2.03	
Toluene*	<0.200	0.200	10/06/2012	ND	2.03	102	2.00	2.43	
Ethylbenzene*	<0.200	0.200	10/06/2012	ND	2.05	102	2.00	2.41	
Total Xylenes*	<0.600	0.600	10/06/2012	ND	6.04	101	6.00	2.51	

Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	10/05/2012	ND	400	100	400	4.08	

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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	

Surrogate: 1-Chlorooctane 92.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 91.7 % 63.6-154

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\*=Accredited Analyte

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 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: HA 6 0-1 (H202404-04)**

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/06/2012	ND	2.20	110	2.00	2.03	
Toluene*	<0.200	0.200	10/06/2012	ND	2.03	102	2.00	2.43	
Ethylbenzene*	<0.200	0.200	10/06/2012	ND	2.05	102	2.00	2.41	
Total Xylenes*	<0.600	0.600	10/06/2012	ND	6.04	101	6.00	2.51	

*Surrogate: 4-Bromofluorobenzene (PID) 102 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	10/05/2012	ND	400	100	400	4.08	

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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	

*Surrogate: 1-Chlorooctane 88.9 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 87.5 % 63.6-154*

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: HA 6 4-5 (H202404-05)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/08/2012	ND	2.03	101	2.00	14.6		
Toluene*	<0.050	0.050	10/08/2012	ND	1.81	90.7	2.00	13.8		
Ethylbenzene*	<0.050	0.050	10/08/2012	ND	1.79	89.7	2.00	14.3		
Total Xylenes*	<0.150	0.150	10/08/2012	ND	5.33	88.8	6.00	13.5		

*Surrogate: 4-Bromofluorobenzene (PID) 106 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>128</b>	16.0	10/08/2012	ND	400	100	400	4.08		

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	10/05/2012	ND	203	101	200	0.901		
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59		

*Surrogate: 1-Chlorooctane 90.5 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 89.2 % 63.6-154*

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: HA 8 1-2 (H202404-06)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/08/2012	ND	2.03	101	2.00	14.6		
Toluene*	<0.050	0.050	10/08/2012	ND	1.81	90.7	2.00	13.8		
Ethylbenzene*	<0.050	0.050	10/08/2012	ND	1.79	89.7	2.00	14.3		
Total Xylenes*	<0.150	0.150	10/08/2012	ND	5.33	88.8	6.00	13.5		

*Surrogate: 4-Bromofluorobenzene (PID) 106 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>16.0</b>	16.0	10/08/2012	ND	400	100	400	4.08		

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	10/05/2012	ND	203	101	200	0.901		
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59		

*Surrogate: 1-Chlorooctane 91.9 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 91.0 % 63.6-154*

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: HA 10 0-1 (H202404-07)**

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/08/2012	ND	2.03	101	2.00	14.6	
Toluene*	<0.050	0.050	10/08/2012	ND	1.81	90.7	2.00	13.8	
Ethylbenzene*	<0.050	0.050	10/08/2012	ND	1.79	89.7	2.00	14.3	
Total Xylenes*	<0.150	0.150	10/08/2012	ND	5.33	88.8	6.00	13.5	

*Surrogate: 4-Bromofluorobenzene (PID) 105 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>128</b>	16.0	10/08/2012	ND	400	100	400	4.08	

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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	

*Surrogate: 1-Chlorooctane 93.4 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 90.9 % 63.6-154*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/02/2012  
 Reported: 10/09/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/02/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 10 4-5 (H202404-08)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/08/2012	ND	2.03	101	2.00	14.6		
Toluene*	<0.050	0.050	10/08/2012	ND	1.81	90.7	2.00	13.8		
Ethylbenzene*	<0.050	0.050	10/08/2012	ND	1.79	89.7	2.00	14.3		
Total Xylenes*	<0.150	0.150	10/08/2012	ND	5.33	88.8	6.00	13.5		

*Surrogate: 4-Bromofluorobenzene (PID) 105 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>720</b>	16.0	10/08/2012	ND	400	100	400	4.08		

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	10/05/2012	ND	203	101	200	0.901		
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59		

*Surrogate: 1-Chlorooctane 95.0 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 94.8 % 63.6-154*

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\*=Accredited Analyte

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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



October 12, 2012

FRED HOLMES

ETECH Environmental & Safety Solutions, Inc.

P. O. BOX 8469

MIDLAND, TX 79708

RE: J L KEEL B #22

Enclosed are the results of analyses for samples received by the laboratory on 10/05/12 14:50.

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:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: HA 11 0-1' (H202436-01)**

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	

Surrogate: 4-Bromofluorobenzene (PID) 102 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	10/09/2012	ND	400	100	400	3.92	

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	10/09/2012	ND	183	91.6	200	1.21	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93	

Surrogate: 1-Chlorooctane 95.8 % 65.2-140

Surrogate: 1-Chlorooctadecane 96.7 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 11 11-12' (H202436-02)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

*Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/09/2012	ND	400	100	400	3.92		

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	10/09/2012	ND	183	91.6	200	1.21		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93		

*Surrogate: 1-Chlorooctane 101 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 102 % 63.6-154*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 12 0-1' (H202436-03)**

BTEX 8021B			mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

*Surrogate: 4-Bromofluorobenzene (PID) 100 % 89.4-126*

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/09/2012	ND	400	100	400	3.92		

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	10/09/2012	ND	183	91.6	200	1.21		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93		

*Surrogate: 1-Chlorooctane 96.2 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 99.5 % 63.6-154*

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 12 9-10' (H202436-04)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

*Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/09/2012	ND	400	100	400	3.92		

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	10/09/2012	ND	183	91.6	200	1.21		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93		

*Surrogate: 1-Chlorooctane 92.0 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 94.8 % 63.6-154*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 13 0-1' (H202436-05)**

BTEX 8021B			mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

*Surrogate: 4-Bromofluorobenzene (PID) 100 % 89.4-126*

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/10/2012	ND	400	100	400	0.00		

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	10/09/2012	ND	183	91.6	200	1.21		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93		

*Surrogate: 1-Chlorooctane 90.5 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 93.0 % 63.6-154*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 13 8-9' (H202436-06)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

*Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/10/2012	ND	400	100	400	0.00		

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	10/09/2012	ND	183	91.6	200	1.21		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93		

*Surrogate: 1-Chlorooctane 88.2 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 94.2 % 63.6-154*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 14 0-1' (H202436-07)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

Surrogate: 4-Bromofluorobenzene (PID) 102 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>32.0</b>	16.0	10/10/2012	ND	400	100	400	0.00		

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	10/09/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09		

Surrogate: 1-Chlorooctane 96.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.5 % 63.6-154

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**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 14 6-7' (H202436-08)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

*Surrogate: 4-Bromofluorobenzene (PID) 100 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/10/2012	ND	400	100	400	0.00		

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	10/09/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09		

*Surrogate: 1-Chlorooctane 89.8 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 90.6 % 63.6-154*

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**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: HA 15 0-1' (H202436-09)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

*Surrogate: 4-Bromofluorobenzene (PID) 102 % 89.4-126*

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>16.0</b>	16.0	10/10/2012	ND	400	100	400	0.00		

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	10/09/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09		

*Surrogate: 1-Chlorooctane 86.2 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 90.4 % 63.6-154*

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**Analytical Results For:**

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 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: HA 15 6-7' (H202436-10)**

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	

*Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/10/2012	ND	400	100	400	0.00	

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	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09	

*Surrogate: 1-Chlorooctane 88.9 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 91.3 % 63.6-154*

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 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: NHA1 0-1' (H202436-11)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

*Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>224</b>	16.0	10/10/2012	ND	400	100	400	0.00		

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	10/09/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09		

*Surrogate: 1-Chlorooctane 90.6 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 93.7 % 63.6-154*

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**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: NHA1 1-2' (H202436-12)**

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	

*Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>64.0</b>	16.0	10/10/2012	ND	400	100	400	0.00	

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	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09	

*Surrogate: 1-Chlorooctane 72.6 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 73.3 % 63.6-154*

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 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: NHA2 0-1' (H202436-13)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20		
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64		
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82		
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76		

*Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>3640</b>	16.0	10/10/2012	ND	400	100	400	0.00		

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	10/09/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09		

*Surrogate: 1-Chlorooctane 91.0 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 94.6 % 63.6-154*

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 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

 Received: 10/05/2012  
 Reported: 10/12/2012  
 Project Name: J L KEEL B #22  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 10/05/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: NHA 3 0-1' (H202436-14)**

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	

*Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 89.4-126*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>592</b>	16.0	10/10/2012	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<50.0	50.0	10/09/2012	ND	204	102	200	4.09	

*Surrogate: 1-Chlorooctane 91.1 % 65.2-140*
*Surrogate: 1-Chlorooctadecane 93.0 % 63.6-154*

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### 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: <b>Eteeh</b>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>													
Project Manager:				P.O. #:																	
Address:				Company:																	
City:		State:		Zip:		Attn:															
Phone #:		Fax #:		Address:																	
Project #:		Project Owner:		City:																	
Project Name: <b>JL Keel B 22</b>				State:																Zip:	
Project Location:				Phone #:																	
Sampler Name: <b>Terry Osborn</b>				Fax #:																	
FOR LAB USE ONLY																					
Lab I.D.		Sample I.D.				(GRAB OR (C)OMP. # CONTAINERS	MATRIX			PRESERV.		SAMPLING		chlorides	BTEX	TPH					
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL				OTHER:	DATE	TIME		
H200436		11 NHA1 0-1 <sup>3</sup>						✓					✓		10-5-12		✓	✓	✓		
12		NHA1 1-2 <sup>3</sup>															✓	✓	✓		
13		NHA2 0-1 <sup>3</sup>															✓	✓	✓		
14		NHA3 0-1 <sup>3</sup>															✓	✓	✓		

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Relinquished By: <i>Terry Osborn</i>		Date: <b>10-5-12</b>	Received By: <i>Jodi Henson</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
		Time: <b>2:50</b>			Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:		Date:	Received By:		REMARKS:	
		Time:				
Delivered By: (Circle One)			Sample Condition		CHECKED BY:	
Sampler - UPS - Bus - Other:			Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(Initials) <i>JH</i>	

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#26

October 25, 2012

FRED HOLMES

ETECH Environmental & Safety Solutions, Inc.

P. O. BOX 8469

MIDLAND, TX 79708

RE: J L KEEL B #22

Enclosed are the results of analyses for samples received by the laboratory on 10/23/12 16:30.

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:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 1 SURFACE (H202586-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5680	16.0	10/25/2012	ND	416	104	400	0.00		

**Sample ID: SP 2 SURFACE (H202586-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/25/2012	ND	416	104	400	0.00		

**Sample ID: SP 2 N. WALL 2' (H202586-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	448	16.0	10/25/2012	ND	416	104	400	0.00		

**Sample ID: SP 2 S. WALL 2' (H202586-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3680	16.0	10/25/2012	ND	416	104	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager

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 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 3 SURFACE (H202586-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 4 SURFACE (H202586-06)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 4 N. WALL 2' (H202586-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4120	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 4 S. WALL 2' (H202586-08)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 5 SURFACE (H202586-09)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 5 N. WALL 1' (H202586-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 5 S. WALL 1' (H202586-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>640</b>	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 6 SURFACE (H202586-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 7 SURFACE (H202586-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 8 SURFACE (H202586-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 8 N. WALL 1' (H202586-15)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 8 S. WALL 1' (H202586-16)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>816</b>	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 9 SURFACE (H202586-17)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 9 N. WALL 1' (H202586-18)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>432</b>	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 9 S. WALL 1' (H202586-19)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 10 SURFACE (H202586-20)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 10 N. WALL 1' (H202586-21)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 10 S. WALL 1' (H202586-22)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>864</b>	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 11 SURFACE (H202586-23)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 11 N. WALL 2' (H202586-24)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 11 S. WALL 2' (H202586-25)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 12 SURFACE (H202586-26)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 12 N WALL 2' (H202586-27)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 13 W. WALL 2' (H202586-28)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 14 SURFACE (H202586-29)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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 FRED HOLMES  
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 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 14 S. WALL 2' (H202586-30)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 15 SURFACE (H202586-31)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 15 E. WALL 2' (H202586-32)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 16 SURFACE (H202586-33)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: NHS 1 (H202586-34)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	10/25/2012	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETECH Environmental & Safety Solutions, Inc.  
 FRED HOLMES  
 P. O. BOX 8469  
 MIDLAND TX, 79708  
 Fax To: (432) 563-2213

Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: NHS 2 (H202586-35)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3800	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: NHS 3 (H202586-36)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	10/25/2012	ND	416	104	400	0.00	

**Sample ID: SP 13 SURFACE (H202586-37)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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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: <b>Etech</b>		<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>													
Project Manager: <b>Fred Holmes</b>		P.O. #: <b>253-2995-000</b>				chlorides													
Address:		Company:																	
City:	State:	Zip:	Attn:																
Phone #:	Fax #:		Address:																
Project #:	Project Owner:		City:																
Project Name:	<b>JL Keel B 22</b>		State:																
Project Location:	<b>Eddy county</b>		Zip:																
Sampler Name:	<b>Terry Osborn</b>		Phone #:																
		Fax #:																	

FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(GRAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME
	<b>H202586</b>														
	1	SP1 surface												10-23	
	2	SP2 surface													
	3	SP2 N. wall 2'													
	4	SP2 S. wall 2'													
	5	SP3 surface													
	6	SP4 surface													
	7	SP4 N. wall 2'													
	8	SP4 S. wall 2'													
	9	SP5 surface													
	10	SP5 N. wall 1'													

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Relinquished By: <i>Terry Osborn</i>	Date: <b>10/23</b> Time: <b>4:30</b>	Received By: <i>Jodi Henson</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:	
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:	
REMARKS:					
Delivered By: (Circle One) Sampler - UPS - Bus - Other: <b>230</b>		Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	CHECKED BY: (Initials) <i>JH</i>		

#26



**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

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

Company Name: <b>Etech</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																					
Project Manager: <b>Fred Holmes</b>		P.O. #: <b>253-2995-000</b>																							
Address:		Company:																							
City: State: Zip:		Attn:																							
Phone #: Fax #:		Address:																							
Project #: <b>253-2995-000</b> Project Owner:		City:																							
Project Name: <b>JL Keel B 22</b>		State: Zip:																							
Project Location: <b>Eddy county</b>		Phone #:																							
Sampler Name: <b>Terry Osbor</b>		Fax #:																							
FOR LAB USE ONLY																									
Lab I.D.		Sample I.D.		# CONTAINERS	MATRIX				PRESERV.		SAMPLING		Chlorides												
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL											OTHER:	DATE	TIME
<b>H201586</b>																									
11 SP5		S. wall 1'																							
12 SP6		Surface																							
13 SP7		Surface																							
14 SP8		Surface																							
15 SP8		N. wall 1'																							
16 SP8		S. wall 1'																							
17 SP8		Surface																							
18 SP8		N. wall 1'																							
19 SP8		S. wall 1'																							
20 SP10		Surface																							

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Relinquished By: <i>Terry Osbor</i>		Date: <b>10/23/04</b>		Received By: <i>Jodi Benson</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
		Time: <b>4:30</b>				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS:			
		Time:							
Delivered By: (Circle One)									
Sampler - UPS - Bus - Other:		<b>270</b>		Sample Condition		CHECKED BY: <i>[Initials]</i>			
				Cool Intact					
				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
				<input type="checkbox"/> Yes <input type="checkbox"/> No					

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Eteeh</u>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>											
Project Manager: <u>Fred Holmes</u>		P.O. #: <u>253-2995-000</u>													
Address:		Company:													
City: State: Zip:		Attn:													
Phone #: Fax #:		Address:													
Project #: <u>253-2995-009</u> Project Owner:		City:													
Project Name: <u>JL Kee B 22</u>		State: Zip:													
Project Location: <u>Eddy county</u>		Phone #:													
Sampler Name: <u>Terry Osborn</u>		Fax #:													
FOR LAB USE ONLY															
Lab I.D.	Sample I.D.	(GIRABOR (C)OMP. # CONTAINERS	MATRIX GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:	PRESERV. ACID/BASE: ICE / COOL OTHER:	SAMPLING DATE TIME	Chlorides									
<u>H202586</u>	<u>21 SP10 N. wall 1)</u>				<u>10-23</u>										
<u>22</u>	<u>SP10 S. wall 1)</u>														
<u>23</u>	<u>SP11 SURFACE</u>														
<u>24</u>	<u>SP11 N. wall 2)</u>														
<u>25</u>	<u>SP11 S. wall 2)</u>														
<u>26</u>	<u>SP12 SURFACE</u>														
<u>27</u>	<u>SP12 N wall 2)</u>														
<u>28</u>	<u>SP13 W wall 2)</u>														
<u>29</u>	<u>SP14 SURFACE</u>														
<u>30</u>	<u>SP14 S. wall 2)</u>														

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Relinquished By: <u>Terry Osborn</u>	Date: <u>10-23</u> Time: <u>4:30</u>	Received By: <u>Jodi Henson</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	CHECKED BY: (Initials) <u>JH</u>	REMARKS:	

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



### Chloride Probe Field Analysis Sheet

**Client:** LINN Energy  
**Site:** JL Keel B 22 **Project Number:** 253-2995-000  
**Technican:** Terry Osborn **Contaminant:** Chlorides  
**Instrument:** YSI Chloride Probe **Model/SN:** Pro 1030/114100517  
**Calibration Checks Good:**  Yes  No **Calibration Standard:** 250

Date	Sample I.D.	Milliliters of Sample Used	Dilution	Reading (mg/kg)	Final Result (mg/kg)	Notations
10/01/12	HA1 0-1'	10	5.00	383.00	<b>1,915.00</b>	
10/01/12	HA1 1-2'	10	5.00	213.00	<b>1,065.00</b>	
10/01/12	HA1 2-3'	10	5.00	795.00	<b>3,975.00</b>	Refusal
10/02/12	HA2 0-1'	10	5.00	6.00	<b>30.00</b>	Refusal
10/02/12	HA3 0-1'	10	5.00	32.00	<b>160.00</b>	Refusal
10/02/12	HA4 0-1'	10	5.00	7.00	<b>35.00</b>	Refusal
10/02/12	HA5 0-1	10	5.00	3.00	<b>15.00</b>	
10/02/12	HA5 1-2'	10	5.00	5.00	<b>25.00</b>	
10/02/12	HA5 2-3'	10	5.00	7.00	<b>35.00</b>	
10/02/12	HA5 3-4'	10	5.00	7.00	<b>35.00</b>	
10/02/12	HA5 4-5'	10	5.00	5.00	<b>25.00</b>	
10/02/12	HA5 5-6'	10	5.00	8.00	<b>40.00</b>	
10/02/12	HA5 6-7'	10	5.00	5.00	<b>25.00</b>	
10/02/12	HA5 7-8'	10	5.00	3.00	<b>15.00</b>	
10/02/12	HA5 8-9'	10	5.00	3.00	<b>15.00</b>	Refusal
10/02/12	HA6 0-1'	10	5.00	6.00	<b>30.00</b>	
10/02/12	HA6 1-2'	10	5.00	82.00	<b>410.00</b>	
10/02/12	HA6 2-3'	10	5.00	58.00	<b>290.00</b>	
10/02/12	HA6 3-4'	10	5.00	40.00	<b>200.00</b>	
10/02/12	HA6 4-5'	10	5.00	18.00	<b>90.00</b>	Refusal
10/02/12	HA7 0-1'	10	5.00	6.00	<b>30.00</b>	
10/02/12	HA7 1-2'	10	5.00	2.00	<b>10.00</b>	Refusal
10/02/12	HA8 0-1'	10	5.00	3.00	<b>15.00</b>	
10/02/12	HA8 1-2'	10	5.00	4.00	<b>20.00</b>	Refusal
10/02/12	HA9 0-1'	10	5.00	4.00	<b>20.00</b>	Refusal
10/02/12	HA10 0-1'	10	5.00	15.00	<b>75.00</b>	
10/02/12	HA10 1-2'	10	5.00	45.00	<b>225.00</b>	
10/02/12	HA10 2-3'	10	5.00	46.00	<b>230.00</b>	
10/02/12	HA10 3-4'	10	5.00	80.00	<b>400.00</b>	
10/02/12	HA10 4-5'	10	5.00	83.00	<b>415.00</b>	Refusal

### Chloride Probe Field Analysis Sheet

**Client:** LINN Energy  
**Site:** JL Keel B 22 **Project Number:** 253-2995-000  
**Technican:** Terry Osborn **Contaminant:** Chlorides  
**Instrument:** YSI Chloride Probe **Model/SN:** Pro 1030/114100517  
**Calibration Checks Good:**  Yes  No **Clairation Standard:** 250

Date	Sample I.D.	Milliliters of Sample Used	Dilution	Reading (mg/kg)	Final Result (mg/kg)	Notations
10/03/12	HA11 0-1'	10	5.00	5.00	25.00	
10/03/12	HA11 1-2'	10	5.00	5.00	25.00	
10/03/12	HA11 2-3'	10	5.00	4.00	20.00	
10/03/12	HA11 3-4'	10	5.00	3.00	15.00	
10/03/12	HA11 4-5'	10	5.00	4.00	20.00	
10/03/12	HA11 5-6'	10	5.00	3.00	15.00	
10/03/12	HA11 6-7'	10	5.00	2.00	10.00	
10/03/12	HA11 7-8'	10	5.00	1.00	5.00	
10/03/12	HA11 8-9'	10	5.00	4.00	20.00	
10/03/12	HA11 9-10'	10	5.00	5.00	25.00	
10/03/12	HA11 10-11'	10	5.00	3.00	15.00	
10/03/12	HA11 11-12'	10	5.00	3.00	15.00	Refusal
10/04/12	HA12 0-1'	10	5.00	3.00	15.00	
10/04/12	HA12 1-2'	10	5.00	2.00	10.00	
10/04/12	HA12 2-3'	10	5.00	2.00	10.00	
10/04/12	HA12 3-4'	10	5.00	3.00	15.00	
10/04/12	HA12 4-5'	10	5.00	4.00	20.00	
10/04/12	HA12 5-6'	10	5.00	2.00	10.00	
10/04/12	HA12 6-7'	10	5.00	3.00	15.00	
10/04/12	HA12 7-8'	10	5.00	2.00	10.00	
10/04/12	HA12 8-9'	10	5.00	2.00	10.00	
10/04/12	HA12 9-10'	10	5.00	2.00	10.00	Refusal
10/04/12	HA13 0-1'	10	5.00	4.00	20.00	
10/04/12	HA13 1-2'	10	5.00	5.00	25.00	
10/04/12	HA13 2-3'	10	5.00	3.00	15.00	
10/04/12	HA13 3-4'	10	5.00	2.00	10.00	
10/04/12	HA13 4-5'	10	5.00	4.00	20.00	
10/04/12	HA13 5-6'	10	5.00	3.00	15.00	
10/04/12	HA13 6-7'	10	5.00	3.00	15.00	
10/04/12	HA13 7-8'	10	5.00	3.00	15.00	
10/04/12	HA13 8-9'	10	5.00	4.00	20.00	Refusal

