



April 10, 2015

KYLE NORMAN

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: WARREN UNIT INJECTION TRUNKLINE

Enclosed are the results of analyses for samples received by the laboratory on 04/01/15 14:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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.

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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 Basin Environmental Service
 KYLE NORMAN
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	04/01/2015	Sampling Date:	04/01/2015
Reported:	04/10/2015	Sampling Type:	Soil
Project Name:	WARREN UNIT INJECTION TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	COP		

Sample ID: POINT 1 @ 4' (H500875-01)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2015	ND	1.87	93.4	2.00	7.29		
Toluene*	<0.050	0.050	04/06/2015	ND	1.72	86.1	2.00	6.44		
Ethylbenzene*	<0.050	0.050	04/06/2015	ND	1.63	81.3	2.00	8.76		
Total Xylenes*	<0.150	0.150	04/06/2015	ND	5.00	83.3	6.00	9.48		
Total BTEX	<0.300	0.300	04/06/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

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	04/02/2015	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	04/10/2015	ND	184	91.9	200	5.80		
DRO >C10-C28	<10.0	10.0	04/10/2015	ND	196	98.0	200	1.14		

Surrogate: 1-Chlorooctane 87.5 % 47.2-157
Surrogate: 1-Chlorooctadecane 88.0 % 52.1-176

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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Received:	04/01/2015	Sampling Date:	04/01/2015
Reported:	04/10/2015	Sampling Type:	Soil
Project Name:	WARREN UNIT INJECTION TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	COP		

Sample ID: POINT 2 @ 4' (H500875-02)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2015	ND	1.87	93.4	2.00	7.29	
Toluene*	<0.050	0.050	04/06/2015	ND	1.72	86.1	2.00	6.44	
Ethylbenzene*	<0.050	0.050	04/06/2015	ND	1.63	81.3	2.00	8.76	
Total Xylenes*	<0.150	0.150	04/06/2015	ND	5.00	83.3	6.00	9.48	
Total BTEX	<0.300	0.300	04/06/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 61-154

Chloride, SM4500CI-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	04/02/2015	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	04/09/2015	ND	184	91.9	200	5.80	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	196	98.0	200	1.14	

Surrogate: 1-Chlorooctane 87.7 % 47.2-157

Surrogate: 1-Chlorooctadecane 92.4 % 52.1-176

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*=Accredited Analyte

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Reported:	04/10/2015	Sampling Type:	Soil
Project Name:	WARREN UNIT INJECTION TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	COP		

Sample ID: POINT 3 @ 4' (H500875-03)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2015	ND	1.87	93.4	2.00	7.29	
Toluene*	<0.050	0.050	04/06/2015	ND	1.72	86.1	2.00	6.44	
Ethylbenzene*	<0.050	0.050	04/06/2015	ND	1.63	81.3	2.00	8.76	
Total Xylenes*	<0.150	0.150	04/06/2015	ND	5.00	83.3	6.00	9.48	
Total BTEX	<0.300	0.300	04/06/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 61-154

Chloride, SM4500CI-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	04/02/2015	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	04/02/2015	ND	184	91.9	200	5.80	
DRO >C10-C28	<10.0	10.0	04/02/2015	ND	196	98.0	200	1.14	

Surrogate: 1-Chlorooctane 117 % 47.2-157

Surrogate: 1-Chlorooctadecane 124 % 52.1-176

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Reported:	04/10/2015	Sampling Type:	Soil
Project Name:	WARREN UNIT INJECTION TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	COP		

Sample ID: POINT 4 @ SURFACE (H500875-04)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2015	ND	1.87	93.4	2.00	7.29		
Toluene*	<0.050	0.050	04/06/2015	ND	1.72	86.1	2.00	6.44		
Ethylbenzene*	<0.050	0.050	04/06/2015	ND	1.63	81.3	2.00	8.76		
Total Xylenes*	<0.150	0.150	04/06/2015	ND	5.00	83.3	6.00	9.48		
Total BTEX	<0.300	0.300	04/06/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 61-154

Chloride, SM4500CI-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	04/02/2015	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	04/02/2015	ND	184	91.9	200	5.80		
DRO >C10-C28	<10.0	10.0	04/02/2015	ND	196	98.0	200	1.14		

Surrogate: 1-Chlorooctane 114 % 47.2-157

Surrogate: 1-Chlorooctadecane 114 % 52.1-176

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Reported:	04/10/2015	Sampling Type:	Soil
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Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	COP		

Sample ID: POINT 4 @ 4' (H500875-05)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2015	ND	1.87	93.4	2.00	7.29	
Toluene*	<0.050	0.050	04/06/2015	ND	1.72	86.1	2.00	6.44	
Ethylbenzene*	<0.050	0.050	04/06/2015	ND	1.63	81.3	2.00	8.76	
Total Xylenes*	<0.150	0.150	04/06/2015	ND	5.00	83.3	6.00	9.48	
Total BTEX	<0.300	0.300	04/06/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 61-154

Chloride, SM4500CI-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	04/02/2015	ND	400	100	400	3.92	

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GRO C6-C10	<10.0	10.0	04/02/2015	ND	184	91.9	200	5.80	
DRO >C10-C28	<10.0	10.0	04/02/2015	ND	196	98.0	200	1.14	

Surrogate: 1-Chlorooctane 117 % 47.2-157

Surrogate: 1-Chlorooctadecane 121 % 52.1-176

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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



Celey D. Keene, Lab Director/Quality Manager

