Mr. Runnels:

The latter. Horizontal delineation is not complete since your sidewall samples are above 250 mg/kg chloride. As the depth to groundwater is high, NMOCD will accept 600 mg/kg chloride level for horizontal and vertical delineation.

- Please extend the perimeter of the proposed liner area until this permissible level is obtained at North Wall 1, South Wall 1, and East Wall 2.
- Please continue vertical delineation to 600 mg/kg and maintained for additional 5 ft. at Floor 1-4. For Floor 4, if <600 mg/kg is obtained at 10 ft., than Floor 4 will be considered delineated.

Let me know if you have questions/ want clarification.

Thanks, Olivia

From: Robbie Runnels [mailto:rrunnels@basinenv.com]
Sent: Monday, April 10, 2017 9:47 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Subject: Echo Production - 1RP-4250

Ms. Yu,

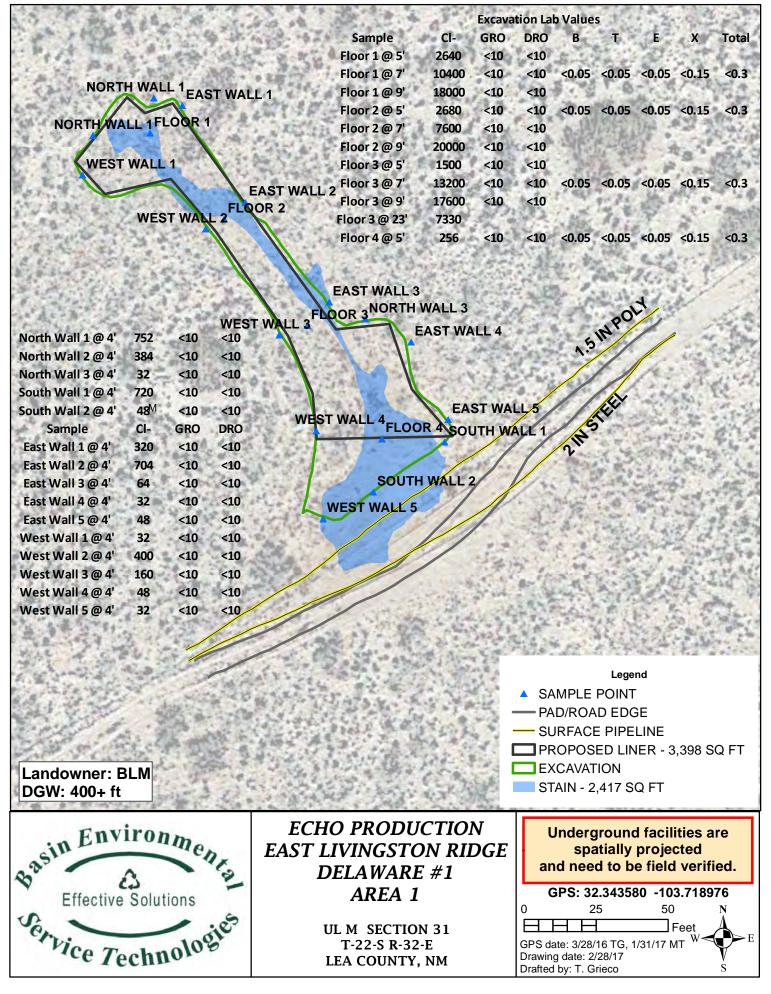
I have attached the proposed liner for Area 1 for the aforementioned site. My question is: there are a few wall samples that are above 250 ppm, is that acceptable considering groundwater is at 400+ feet? Or, do we need to take the walls back another foot or two and resample?

Thank you,

**Robbie Runnels** 

Project Manager Basin Environmental Service Technologies 3100 Plains Hwy. P.O. Box 301 Lovington, NM 88260 p. 575-396-2378 m. 575-441-5598 f. 575-396-1429 rrunnels@basinenv.com

# **Proposed Liner**



Mr. Runnels:

Not a problem. Thank you for the clarification.

Have a relaxing weekend, Olivia

From: Robbie Runnels [mailto:rrunnels@basinenv.com]
Sent: Friday, March 3, 2017 12:08 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Subject: RE: Echo Production Areas 1 and 2 (1RP-4250)

Ms. Yu,

My apologies for the misunderstanding. We will install the conduit and begin taking samples at the last depth achieved via soil bores. We will continue the bores until we have two consecutive samples that are below the 250 ppm guideline for chlorides. Floor 1 and 4, we will start pulling samples at 15'. We will start pulling samples at Floor 3 at 25'. I hope this clears it up. Again, I apologize for my own confusion.

Robbie

------ Original Message ------Subject: RE: Echo Production Areas 1 and 2 (1RP-4250) From: "Yu, Olivia, EMNRD" <<u>Olivia.Yu@state.nm.us</u>> Date: 3/3/17 12:01 pm To: "Robbie Runnels" <<u>rrunnels@basinenv.com</u>>

Mr. Runnels:

I did not indicate excavation for Floor 1 and 4. I assume that you will be using a soil borer (via the conduit) to get the additional delineation information. Also, seeing that chloride levels at 13 ft bgs are 14800 mg/kg for Floor 1 and 30000 mg/kg for Floor 2, I presume that samples probably will be taken at 23 ft bgs. Are these not reasonable assumptions? Please inform me if my technical knowledge is incorrect.

Thanks,

Olivia

From: Robbie Runnels [mailto:rrunnels@basinenv.com]
Sent: Friday, March 3, 2017 11:52 AM
To: Yu, Olivia, EMNRD <<u>Olivia.Yu@state.nm.us</u>>

Subject: RE: Echo Production Areas 1 and 2 (1RP-4250)

Ms. Yu,

I have a question. What is the purpose of excavating Floor 1 and Floor 4 to a depth of 23' when we will be installing conduit and drilling it beginning at 6' bgs? This does not seem to be productive and provides no information that will not be ascertained from the drilling. Could you please explain the rationale for this.

Thank you,

Robbie

------ Original Message ------Subject: RE: Echo Production Areas 1 and 2 (1RP-4250) From: "Yu, Olivia, EMNRD" <<u>Olivia.Yu@state.nm.us</u>> Date: 3/3/17 11:46 am To: "Robbie Runnels" <<u>rrunnels@basinenv.com</u>>, "<u>rpair@blm.gov</u>" <<u>rpair@blm.gov</u>> Cc: "Oberding, Tomas, EMNRD" <<u>Tomas.Oberding@state.nm.us</u>>

Dear Mr. Runnels:

Please see attachment for your records.

Thanks,

Olivia

From: Robbie Runnels [mailto:rrunnels@basinenv.com]
Sent: Friday, March 3, 2017 11:36 AM
To: Yu, Olivia, EMNRD <<u>Olivia.Yu@state.nm.us</u>>; <u>rpair@blm.gov</u>
Cc: Oberding, Tomas, EMNRD <<u>Tomas.Oberding@state.nm.us</u>>
Subject: RE: Echo Production Areas 1 and 2 (1RP-4250)

Ms. Yu,

Thank you for your response. We will reach as far as the excavator can reach (approximately 23') in all points not previously done next week. Area 2 is excavated to 5' entirely (pictures to be provide next week). When time for installation of the liner, you will receive photo-documentation of the process.

Again, thank you for the response.

Sincerely,

Robbie Runnels Basin

----- Original Message ------Subject: RE: Echo Production Areas 1 and 2 (1RP-4250) From: "Yu, Olivia, EMNRD" <<u>Olivia.Yu@state.nm.us</u>> Date: 3/3/17 11:20 am To: "Robbie Runnels" <<u>rrunnels@basinenv.com</u>>, "<u>rpair@blm.gov</u>" <rpair@blm.gov> Cc: "Oberding, Tomas, EMNRD" <<u>Tomas.Oberding@state.nm.us</u>> Dear Mr. Runnel: Please confirm the below conditions for 1RP-4250 delineation workplan: <![if !supportLists]>1) <![endif]>NMOCD approves the installation of conduits at Area 2- Floor 1, 3, and 4 for future vertical delineation at these sample locations. <![if !supportLists]>2) <![endif]>NMOCD requests that future vertical delineation at Floor 1 and 4 also attempt to reach 23 ft. bgs as reached in Floor 3. <![if !supportLists]>3) <![endif]>Please affirm that the entire Area 2 is excavated to 5 ft. and that floor samples were taken at greater depths using a soil borer. <![if !supportLists]>4) <![endif]>Installation of a liner as demarcated in the document Proposed Liner is approved. Geotechnical details of the liner and photos of the setting are strongly encouraged. Once I receive your response. I will proceed to add these conditions on the Area 2 Conduct Request and Proposed Liner documents and email them back to you for your records. Thanks, Olivia Yu **Environmental Specialist** NMOCD, District I Olivia.vu@state.nm.us 575-393-6161 x113 OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that

may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations. From: Robbie Runnels [mailto:rrunnels@basinenv.com]
Sent: Tuesday, February 28, 2017 9:57 AM
To: Yu, Olivia, EMNRD <<u>Olivia.Yu@state.nm.us</u>>; rpair@blm.gov
Cc: Oberding, Tomas, EMNRD <<u>Tomas.Oberding@state.nm.us</u>>
Subject: RE: Echo Production Areas 1 and 2 (1RP-4250)

Ms. Yu,

Attached is the information you requested. Please let me know if you have any questions or comments.

Thank you,

Robbie

------ Original Message ------Subject: RE: Echo Production Areas 1 and 2 (1RP-4250) From: "Yu, Olivia, EMNRD" <<u>Olivia.Yu@state.nm.us</u>> Date: 2/27/17 10:27 am To: "Robbie Runnels" <<u>rrunnels@basinenv.com</u>>, "<u>rpair@blm.gov</u>" <<u>rpair@blm.gov</u>> Cc: "Oberding, Tomas, EMNRD" <<u>Tomas.Oberding@state.nm.us</u>>

Dear Mr. Runnels:

In order to facilitate my review of your proposed plan of action for Area 1 & 2 of 1RP-4250, please

<![if !supportLists]>1) <![endif]>Collate the laboratory results.

<![if !supportLists]>2) <![endif]>Provide a concise document detailing the work that have been completed and the proposed work with rationale (purpose of culvert, extent and dimensions of area to be lined, proposed area for backfilling, etc.).

Also, there are sample points indicated on the maps that were not sent in for laboratory analyses. Are there any field data on them?

Thanks,

Olivia Yu Environmental Specialist NMOCD, District I

## Olivia.yu@state.nm.us 575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Robbie Runnels [mailto:rrunnels@basinenv.com]
Sent: Tuesday, February 14, 2017 8:54 AM
To: rpair@blm.gov; Yu, Olivia, EMNRD <<u>Olivia.Yu@state.nm.us</u>>
Subject: Echo Production Areas 1 and 2 (1RP-4250)

All,

We have excavated down to 5' in both areas and there is still elevated concentrations of chloride. The DGW is over 400' bgs. Would it be acceptable to place conduit, line the excavation and backfill? We will come back with a drilling rig to advance through the conduit to achieve full delineation.

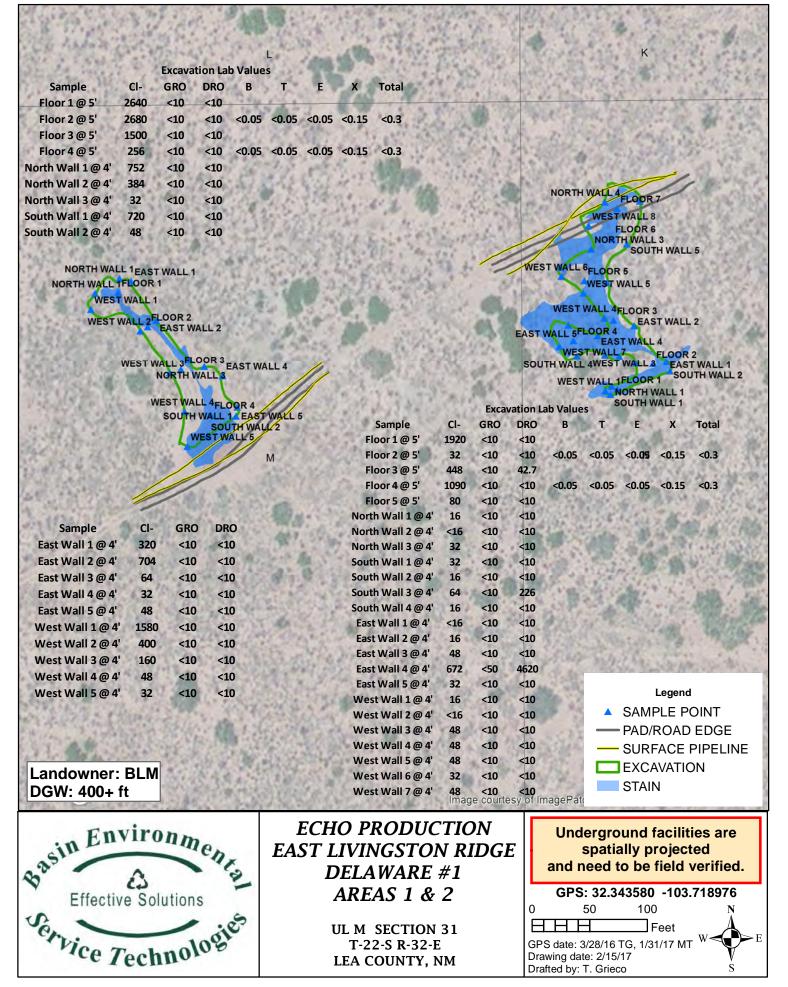
Please let me know your thoughts or concerns.

Best Regards,

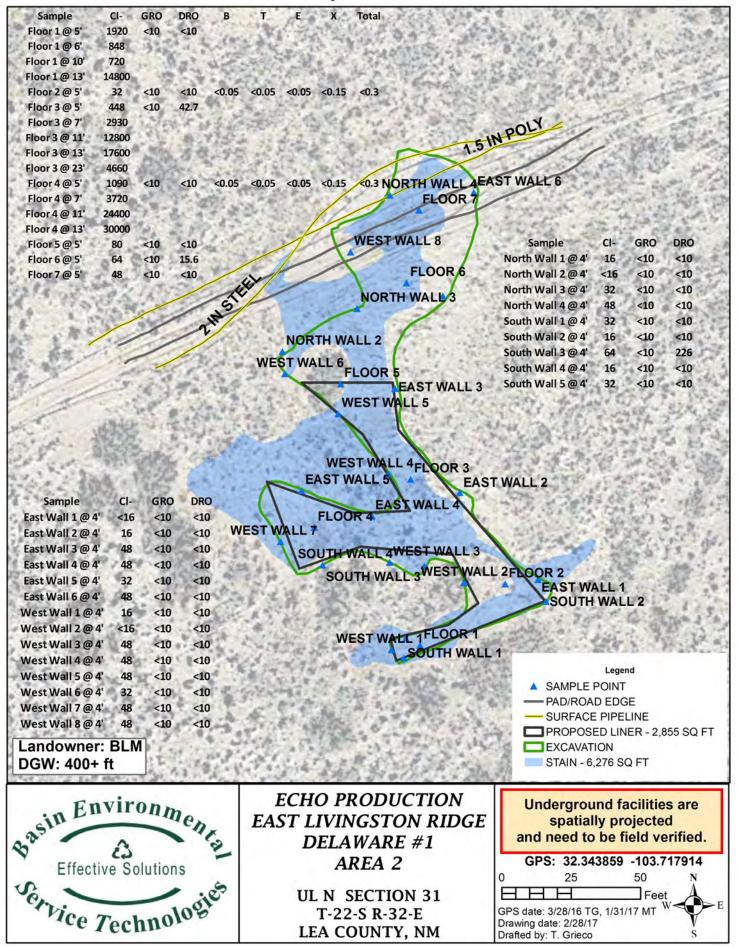
**Robbie Runnels** 

Project Manager Basin Environmental Service Technologies 3100 Plains Hwy. P.O. Box 301 Lovington, NM 88260 p. 575-396-2378 m. 575-441-5598 f. 575-396-1429 rrunnels@basinenv.com

## Excavation



## **Proposed Liner**





January 17, 2017

ROBBIE RUNNELS Basin Environmental Service P.O. Box 301 Lovington, NM 88260

RE: E. LIVINGSTON RIDGE DELAWARE

Enclosed are the results of analyses for samples received by the laboratory on 01/11/17 15:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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 <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA 2 FLOOR 1 @ 5' (H700078-01)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1920	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	96.4	% 35-147	,						
Surrogate: 1-Chlorooctadecane	109	% 28-171							

#### **Cardinal Laboratories**

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatscever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including whother this subsidiaries, affiliates or successor arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA 2 FLOOR 2 @ 5' (H700078-02)

BTEX 8021B	mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/16/2017	ND	2.25	113	2.00	0.346	
Toluene*	<0.050	0.050	01/16/2017	ND	2.22	111	2.00	0.116	
Ethylbenzene*	<0.050	0.050	01/16/2017	ND	2.24	112	2.00	0.289	
Total Xylenes*	<0.150	0.150	01/16/2017	ND	6.31	105	6.00	0.427	
Total BTEX	<0.300	0.300	01/16/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	'kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	96.2	% 35-147							
Surrogate: 1-Chlorooctadecane	105 9	28-171							

#### **Cardinal Laboratories**

## \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA 2 FLOOR 3 @ 5' (H700078-03)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	01/13/2017	ND	416	104	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	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	42.7	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	98.9	% 35-147	,						
Surrogate: 1-Chlorooctadecane	121	% 28-171							

#### **Cardinal Laboratories**

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 FLOOR 4 @ 5' (H700078-04)

BTEX 8021B	mg/kg		Analyze	Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/16/2017	ND	2.25	113	2.00	0.346	
Toluene*	<0.050	0.050	01/16/2017	ND	2.22	111	2.00	0.116	
Ethylbenzene*	<0.050	0.050	01/16/2017	ND	2.24	112	2.00	0.289	
Total Xylenes*	<0.150	0.150	01/16/2017	ND	6.31	105	6.00	0.427	
Total BTEX	<0.300	0.300	01/16/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	98.8	% 35-147	7						
Surrogate: 1-Chlorooctadecane	121 9	% 28-171							

#### **Cardinal Laboratories**

## \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA 2 FLOOR 5 @ 5' (H700078-05)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	01/13/2017	ND	416	104	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	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	103	% 35-147							
Surrogate: 1-Chlorooctadecane	118 9	% 28-171							

## Sample ID: AREA 2 NW 1 @ 4' (H700078-06)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/13/2017	ND	416	104	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	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	96.9	% 35-147	7						
Surrogate: 1-Chlorooctadecane	116	% 28-171	,						

## **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA 2 NW 2 @ 4' (H700078-07)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	104	% 35-147	7						
Surrogate: 1-Chlorooctadecane	110	% 28-171	1						

## Sample ID: AREA 2 NW 3 @ 4' (H700078-08)

Chloride, SM4500Cl-B	mg,	mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/13/2017	ND	416	104	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	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	97.9	% 35-147	7						
Surrogate: 1-Chlorooctadecane	114	% 28-171	,						

## **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 SW 1 @ 4' (H700078-09)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg,	′kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	104	% 35-147	,						
Surrogate: 1-Chlorooctadecane	121	% 28-171							

## Sample ID: AREA 2 SW 2 @ 4' (H700078-10)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	101	% 35-147	7						
Surrogate: 1-Chlorooctadecane	121	% 28-171	,						

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 SW 3 @ 4' (H700078-11)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	226	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	103	% 35-147	7						
Surrogate: 1-Chlorooctadecane	120	% 28-171							

## Sample ID: AREA 2 SW 4 @ 4' (H700078-12)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	102	% 35-147	7						
Surrogate: 1-Chlorooctadecane	121	% 28-171	,						

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA 2 EW 1 @ 4' (H700078-13)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	99.8	% 35-147	,						
Surrogate: 1-Chlorooctadecane	117	% 28-171							

## Sample ID: AREA 2 EW 2 @ 4' (H700078-14)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	180	89.8	200	0.628	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	188	93.8	200	0.234	
Surrogate: 1-Chlorooctane	99.6	% 35-147	7						
Surrogate: 1-Chlorooctadecane	118	% 28-171							

## **Cardinal Laboratories**

## \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA 2 EW 3 @ 4' (H700078-15)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	187	93.3	200	2.09	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	197	98.5	200	3.52	
Surrogate: 1-Chlorooctane	81.2	% 35-147	7						
Surrogate: 1-Chlorooctadecane	88.7	% 28-171							

## Sample ID: AREA 2 EW 4 @ 4' (H700078-16)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	672	16.0	01/13/2017	ND	416	104	400	0.00		
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	<50.0	50.0	01/12/2017	ND	187	93.3	200	2.09		
DRO >C10-C28	4620	50.0	01/12/2017	ND	197	98.5	200	3.52		
Surrogate: 1-Chlorooctane	83.5	% 35-147	7							
Surrogate: 1-Chlorooctadecane	185	% 28-171								

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Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA 2 EW 5 @ 4' (H700078-17)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	187	93.3	200	2.09	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	197	98.5	200	3.52	
Surrogate: 1-Chlorooctane	88.5	% 35-147	,						
Surrogate: 1-Chlorooctadecane	97.7	% 28-171							

## Sample ID: AREA 2 WW 1 @ 4' (H700078-18)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/12/2017	ND	187	93.3	200	2.09	
DRO >C10-C28	<10.0	10.0	01/12/2017	ND	197	98.5	200	3.52	
Surrogate: 1-Chlorooctane	86.8	% 35-147	7						
Surrogate: 1-Chlorooctadecane	94.5	% 28-171							

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 WW 2 @ 4' (H700078-19)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/13/2017	ND	187	93.3	200	2.09	
DRO >C10-C28	<10.0	10.0	01/13/2017	ND	197	98.5	200	3.52	
Surrogate: 1-Chlorooctane	88.2	% 35-147	7						
Surrogate: 1-Chlorooctadecane	99.7	% 28-171							

## Sample ID: AREA 2 WW 3 @ 4' (H700078-20)

Chloride, SM4500CI-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/13/2017	ND	187	93.3	200	2.09	
DRO >C10-C28	<10.0	10.0	01/13/2017	ND	197	98.5	200	3.52	
Surrogate: 1-Chlorooctane	86.7	% 35-147	,						
Surrogate: 1-Chlorooctadecane	92.4	% 28-171							

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Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA 2 WW 4 @ 4' (H700078-21)

Chloride, SM4500Cl-B	mg	mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/13/2017	ND	187	93.3	200	2.09	
DRO >C10-C28	<10.0	10.0	01/13/2017	ND	197	98.5	200	3.52	
Surrogate: 1-Chlorooctane	85.4	% 35-147	7						
Surrogate: 1-Chlorooctadecane	95.2	% 28-171	,						

## Sample ID: AREA 2 WW 5 @ 4' (H700078-22)

Chloride, SM4500Cl-B	mg	mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/13/2017	ND	416	104	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	01/13/2017	ND	187	93.3	200	2.09	
DRO >C10-C28	<10.0	10.0	01/13/2017	ND	197	98.5	200	3.52	
Surrogate: 1-Chlorooctane	88.7	% 35-147	7						
Surrogate: 1-Chlorooctadecane	96.2	% 28-171	,						

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Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/11/2017	Sampling Date:	01/10/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 WW 6 @ 4' (H700078-23)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/13/2017	ND	187	93.3	200	2.09	
DRO >C10-C28	<10.0	10.0	01/13/2017	ND	197	98.5	200	3.52	
Surrogate: 1-Chlorooctane	82.8	% 35-147	7						
Surrogate: 1-Chlorooctadecane	96.3	% 28-171	,						

## Sample ID: AREA 2 WW 7 @ 4' (H700078-24)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/13/2017	ND	187	93.3	200	2.09	
DRO >C10-C28	<10.0	10.0	01/13/2017	ND	197	98.5	200	3.52	
Surrogate: 1-Chlorooctane	87.0	% 35-147							
Surrogate: 1-Chlorooctadecane	101	% 28-171							

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Celeg D. Keine

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.
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 SM4500CI-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

#### **Cardinal Laboratories**

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PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any daim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatscever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including whose shall be instrumed by client, its subsidiaries, affiliates or successor arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

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

	(5/5) 393-2326 FAX (5/5) 393-2476	AX (575) 393-24	76																						
Company Name:	: Basin Environmental Service Technologies, LLC	al Service Technol	ogies	Ş, LL	O.				-				8	BILL TO		1			ANALYSIS	_	5	Ĩ	REQUEST		
Project Manager:	r: Robbie Runnels									P.(	P.O. #:							-					-		
Address: P.C	P.O. Box 301									Co	à l	Company:		Basir	Basin Env.						_				
City: Lovington	Я	State: NM	Zip:		88260	0				Attn:	3			Jody									_	_	
Phone #: (57	(575)396-2378	Fax #: (575)396-1429	6-14	29						Ad	dre	Address:		P.O. Box 301	(301			_			_				
Project #:		Project Owner:	1	E	Echo Production	TO	duc	tion	5	City:				Lovington	2		_	_	_		_				
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FOR LAB USE ONLY			IP.	-			MATRIX	RIX			PR	ES	PRESERV	SAMPLING	NG		-	ВТ							
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LEASE NOTE: Liability and nalyses. All claims including	LEASE NOTE: Liability and Damages. Cardina's lability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the nailyzes. All claims including those for replicence and any other cause whatscence that be deemed waited unless much is writed on tort, shall be limited to the amount paid by the client for the	exclusive remedy for any clair a whatscever shall be deemed	m arisin	g whe	ther bas	ed in a	ontra	t or to	n, sh	100	limite	d to t	an an	ount paid by the clies	nt for the			ł		Т	ŀ				L
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Mat	Matt Taylor	Time: 630						-	<b>Robbie Runnels</b>	bie	R	n	els		REMARKS:										
Relinquished By:		Date:	RA	PAIN	Received By:	5						1													

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

Sampler - UPS - Bus - Other: Delivered By: (Circle One)

.0%

Sample Condition Cool Intact Yes Yes No No No

CHECKED BY:

Please email results to pm@basinenv.com

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FORM-006 Revision 1.0

Page 17 of 19

	Sampler - UPS - Bus -	Relinquished By:	Ma	Relinquished By:	affiliates or successors arisi	analyses. All claims includin		Pl	21	21	16	15	14	13	12	II	Lab I.D.	oditiplet Mattle.	Project Location:	Project Name:	Project #:	1.1	City: Lovington	ess:	Project Manager:	Company Name:	
	e One) Other:		Matt Taylor		service. In no event shall cardinal be table for inodential or consequent affiliates or successors arising out of or related to the performance of a	including those for negligence and any other cause	Area 2 WW3@4'	Area 2 WW2@4'	Area 2 WW1@4'	_	Area 2 EW4@4'	Area 2 EW3@4'	Area 2 EW2@4'	_	Area 2 SW4@4'	Area 2 SW3@4'	Sample I.D.	IVIALL I AYICI		10		(575)396-2378	on	P.O. Box 301	r: Robbie Runnels	<ol> <li>Basin Environmental Service Technologies, LLC</li> </ol>	101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476
	5L#	Times 3.30		Date: 1/11/2016	tal damages, including without limitation, busing envices herelander by Cardinal, regardless of v	whatsoever shall be deen	and a first strength for some													lidge	Project Owner:	Fax #: (575)396-1429	State: NM			Service Techno	101 East Marland, Hobbs, NM 882 (575) 393-2326 FAX (575) 393-24
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ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

	(575) 393-2326 FAX (575) 393-2476	2476	Ľ.																							
Company Name:	: Basin Environmental Service Technologies, LLC	ologie	s, LL	LC						BILL TO						ANALYSIS	P	IS)		EQ	Ĩ	REQUEST				
Project Manager:	r: Robbie Runnels						P.C	P.O. #:							-	-	_			1.4	- 1	_			_	
Address: P.C	P.O. Box 301						Co	mpa	Company:	Ba	Basin Env.	_	_		-											
City: Lovington	on State: NM	Zip:		88260			Attn:	2		Jody	-		_		-											
Phone #: (57	(575)396-2378 Fax #: (575)396-1429	396-1-	429				Ad	Address:	SS:	P.O. B	P.O. Box 301	-			-	-			_				_		-	
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FOR LAB USE ONLY		Ρ.	-		MATRIX	^		PRI	PRESERV.	V. SAMPLING	LING		TF	вт	-		_									
Lab I.D.	Sample I.D.	(G)RAB OR (C)OM	# CONTAINERS	GROUNDWATER WASTEWATER	SOIL OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL OTHER :	DATE	TIME										1.0					
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40	Area 2 WW7@4'	9	-		×				×	1/10/16	10:55	×	×				-					-	-			
PLEASE NOTE: Liability an analyses. All claims including service. In no event shall ca	y and client's exclusive ren y other cause whatsoever or consequental damages,	claim ar smed wa thout limit	hed unit	hether based in less made in wi business intern	n contract o riting and re uptions, los	r lort, s s of use	by Ca	limite ndinal ss of p	d to the a within 30 profits inc	mount paid by the days after complet urred by client, its :	client for the tion of the applicabl subsidiaries,	Î		t								ł		ſ	H	
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FORM-006 Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



January 17, 2017

ROBBIE RUNNELS Basin Environmental Service P.O. Box 301 Lovington, NM 88260

RE: E. LIVINGSTON RIDGE DELAWARE

Enclosed are the results of analyses for samples received by the laboratory on 01/12/17 12:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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 <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA #1 FLOOR 1 @ 5' (H700084-01)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2640	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	87.5	% 35-147	,						
Surrogate: 1-Chlorooctadecane	100	% 28-171							

#### **Cardinal Laboratories**

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatscever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including whother this subsidiaries, affiliates or successor arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

#### Sample ID: AREA #1 FLOOR 2 @ 5' (H700084-02)

BTEX 8021B	mg/kg		Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/16/2017	ND	2.25	113	2.00	0.346	
Toluene*	<0.050	0.050	01/16/2017	ND	2.22	111	2.00	0.116	
Ethylbenzene*	<0.050	0.050	01/16/2017	ND	2.24	112	2.00	0.289	
Total Xylenes*	<0.150	0.150	01/16/2017	ND	6.31	105	6.00	0.427	
Total BTEX	<0.300	0.300	01/16/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	73.6-14	0						
Chloride, SM4500Cl-B	mg/	'kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2680	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	86.4	% 35-147	7						
Surrogate: 1-Chlorooctadecane	91.5	% 28-171							

#### Cardinal Laboratories

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

#### Sample ID: AREA #1 FLOOR 3 @ 5' (H700084-03)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1500	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	85.0	% 35-147	,						
Surrogate: 1-Chlorooctadecane	91.5	% 28-171							

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\*=Accredited Analyte

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #1 FLOOR 4 @ 5' (H700084-04)

BTEX 8021B	mg/kg		Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/16/2017	ND	2.25	113	2.00	0.346	
Toluene*	<0.050	0.050	01/16/2017	ND	2.22	111	2.00	0.116	
Ethylbenzene*	<0.050	0.050	01/16/2017	ND	2.24	112	2.00	0.289	
Total Xylenes*	<0.150	0.150	01/16/2017	ND	6.31	105	6.00	0.427	
Total BTEX	<0.300	0.300	01/16/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 9	73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	92.1	% 35-147							
Surrogate: 1-Chlorooctadecane	96.3	% 28-171							

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\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #1 NW 1 @ 4' (H700084-05)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	752	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	H 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	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	91.9	% 35-147	7						
Surrogate: 1-Chlorooctadecane	93.3	% 28-171	,						

## Sample ID: AREA #1 NW 2 @ 4' (H700084-06)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	01/13/2017	ND	416	104	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	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	89.5	% 35-147	7						
Surrogate: 1-Chlorooctadecane	99.5	% 28-171							

#### **Cardinal Laboratories**

## \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

## Sample ID: AREA #1 NW 3 @ 4' (H700084-07)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/13/2017	ND	416	104	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	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	80.3	% 35-147	7						
Surrogate: 1-Chlorooctadecane	81.1	% 28-171							

## Sample ID: AREA #1 SW 1 @ 4' (H700084-08)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	01/13/2017	ND	416	104	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	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	80.9	% 35-147	,						
Surrogate: 1-Chlorooctadecane	92.4	% 28-171							

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #1 SW 2 @ 4' (H700084-09)

Chloride, SM4500Cl-B Analyte	mg/kg		Analyzed By: AC						
	Result	Reporting Limit	Analyzed	Method Blank	BS % Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	01/13/2017	ND	416	104	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	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	83.5	% 35-147	7						
Surrogate: 1-Chlorooctadecane	93.1	% 28-171	,						

## Sample ID: AREA #1 EW 1 @ 4' (H700084-10)

Chloride, SM4500Cl-B Analyte	mg/kg		Analyzed By: AC						
	Result	Reporting Limit	Analyzed	Method Blank	BS % Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	01/13/2017	ND	416	104	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	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	93.2	% 35-147	7						
Surrogate: 1-Chlorooctadecane	104	% 28-171							

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #1 EW 2 @ 4' (H700084-11)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	704	16.0	01/13/2017	ND	416	104	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	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	87.9	% 35-147	7						
Surrogate: 1-Chlorooctadecane	96.5	% 28-171							

## Sample ID: AREA #1 EW 3 @ 4' (H700084-12)

Chloride, SM4500CI-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	89.6	% 35-147	,						
Surrogate: 1-Chlorooctadecane	93.5	% 28-171							

### **Cardinal Laboratories**

### \*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #1 EW 4 @ 4' (H700084-13)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	87.1	% 35-147	7						
Surrogate: 1-Chlorooctadecane	92.2	% 28-171							

## Sample ID: AREA #1 EW 5 @ 4' (H700084-14)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	95.9	% 35-147	7						
Surrogate: 1-Chlorooctadecane	108	% 28-171							

### **Cardinal Laboratories**

### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #1 WW 1 @ 4' (H700084-15)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1580	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	83.2	% 35-147	,						
Surrogate: 1-Chlorooctadecane	91.2	% 28-171							

# Sample ID: AREA #1 WW 2 @ 4' (H700084-16)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	85.2	% 35-147	7						
Surrogate: 1-Chlorooctadecane	95.5	% 28-171	,						

### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #1 WW 3 @ 4' (H700084-17)

Chloride, SM4500Cl-B	mg	mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	88.7	% 35-147	,						
Surrogate: 1-Chlorooctadecane	94.0	% 28-171							

## Sample ID: AREA #1 WW 4 @ 4' (H700084-18)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	87.5	% 35-147	7						
Surrogate: 1-Chlorooctadecane	94.4	% 28-171							

### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	01/12/2017	Sampling Date:	01/11/2017
Reported:	01/17/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #1 WW 5 @ 4' (H700084-19)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/13/2017	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/16/2017	ND	208	104	200	2.59	
DRO >C10-C28	<10.0	10.0	01/16/2017	ND	247	123	200	2.12	
Surrogate: 1-Chlorooctane	85.4	% 35-147	,						
Surrogate: 1-Chlorooctadecane	90.7	% 28-171							

#### **Cardinal Laboratories**

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### **Notes and Definitions**

BS1	Blank spike recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
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

#### **Cardinal Laboratories**

### \*=Accredited Analyte

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

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**RDINAL LABORATORIES** 

Sampler - UPS - Bus - Other: #75 Relinquished By: Relinquished By: malyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal envice. In no event shall Cardinal be liable for incidental or City: Delivered By: (Circle One) LEASE NOTE: Liability and Sampler Name: Matt Taylor Company Name: Project Name: Project Manager: Project Location: Project #: Phone #: Address: 8000L FOR LAB USE ONLY Lab I.D. FORM-006 Lovington 2 3 P.O. Box 301 6 Matt Taylor S S N N (575)396-2378 Area#1 EW 1@4" Area#1 SW 2@4' Area#1 NW 2@4' Area#1 NW 3@4" Area#1 NW 1@4' Area#1 Floor 4@5' Area#1 Floor 3@5' out of or related to the p Area#1 SW 1@4' Area#1 Floor 2@5 Area#1 Floor 1@5 E. Livingston Delaware Ridge 101 East Marland, Hobbs, NM 88240 ages. Cardinal's liability and client's exclusive remedy for any clai Lea 575) 393-2326 FAX (575) 393-2476 **Robbie Runnels** Basin Environmental Service Technologies, LLC Sample I.D. Time: Date: damages, including without limitation, business interru Project Owner: Fax #: (575)396-1429 State: NM 1/12/2016 sunder by Car 1 4,40 630 † Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476 Received By: Zip: Received By: 9 9 9 9 9 g 9 9 9 9 G)RAB OR (C)OMP. -# CONTAINERS --------Echo Production 88260 GROUNDWATER Ves Yes No No . Sample Condition WASTEWATER such claim is based upon any of the above MATRIX ptions, loss of use, or loss of profits incurred by client, its subsidiaries × × × × × × × SOIL × × OIL **Robbie Runnels** SLUDGE City: OTHER P.O. #: Fax #: State: Attn: Phone #: Company: Address: ACID/BASE: mited to the amount paid by the client for the PRESERV. CHECKED BY: within 30 days after completion of the applicable × × × × × × × × ICE / COOL × NM OTHER BILL TO (575) 396-1429 Zip: 1/11/16 1/11/16 1/11/16 1/11/16 1/11/16 1/11/16 1/11/16 1/11/16 1/11/16 1/11/16 DATE (575) 396-2378 SAMPLING Lovington P.O. Box 301 Jody Basin Please email results to pm@basinenv.com Fax Result: REMARKS: 88260 Phone Result: Env 9:45 9:40 9:35 9:30 9:20 9:05 9:25 9:15 9:10 9:00 TIME × × × × × × × × × Chloride × × × × × × × Yes × × × TPH (8015M) × × BTEX (8021B) No Add'l Fax #: Add'l Phone #: ANALYSIS REQUEST

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February 08, 2017

ROBBIE RUNNELS Basin Environmental Service P.O. Box 301 Lovington, NM 88260

RE: E. LIVINGSTON RIDGE DELAWARE

Enclosed are the results of analyses for samples received by the laboratory on 02/01/17 15:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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 <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 1 FLOOR 1 @ 7' (H700245-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2017	ND	2.14	107	2.00	0.0867	
Toluene*	<0.050	0.050	02/03/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	<0.050	0.050	02/03/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	<0.150	0.150	02/03/2017	ND	5.99	99.8	6.00	0.215	
Total BTEX	<0.300	0.300	02/03/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	73.6-14	0						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10400	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	95.1 9	% 35-147	,						

#### Cardinal Laboratories

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 1 FLOOR 1 @ 9' (H700245-02)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	18000	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	92.4	% 35-147	,						
Surrogate: 1-Chlorooctadecane	101	% 28-171							

# Sample ID: AREA 1 FLOOR 2 @ 7' (H700245-03)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7600	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	98.2	% 35-147	7						
Surrogate: 1-Chlorooctadecane	102	% 28-171							

### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 1 FLOOR 2 @ 9' (H700245-04)

Chloride, SM4500Cl-B	mg,	′kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	20000	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg,	′kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	91.9	% 35-147							
Surrogate: 1-Chlorooctadecane	91.0	% 28-171							

#### **Cardinal Laboratories**

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 1 FLOOR 3 @ 7' (H700245-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2017	ND	2.14	107	2.00	0.0867	
Toluene*	<0.050	0.050	02/03/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	<0.050	0.050	02/03/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	<0.150	0.150	02/03/2017	ND	5.99	99.8	6.00	0.215	
Total BTEX	<0.300	0.300	02/03/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	13200	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	92.8 9	% 35-147							
Surrogate: 1-Chlorooctadecane	100 %	6 28-171							

#### Cardinal Laboratories

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 1 FLOOR 3 @ 9' (H700245-06)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	17600	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	102	% 35-147	,						
Surrogate: 1-Chlorooctadecane	95.8	% 28-171							

## Sample ID: AREA 1 WW 1 @ 4' (H700245-07)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	88.7	% 35-147							
Surrogate: 1-Chlorooctadecane	101	% 28-171							

### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



## **Notes and Definitions**

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

#### **Cardinal Laboratories**

### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

Box 3011         State: NM         ZIp:         802600         Atm:         boy           986-2378         Fast #:         (GT)396-1423         Address:         PO. Box 301           Project Owner:         Echo Production         City:         Longston         Bain En.           Librigston Delevere Ridge         Matrix:         Modess:         PO. Box 301         Project Owner:           Librigston Delevere Ridge         Matrix:         Modess:         PO. Box 301         Project Owner:         Echo Production           Librigston Delevere Ridge         Matrix:         Modess:         PO. Box 301         Project Owner:         Echo Production           Librigston Delevere Ridge         Matrix:         Matrix:         Modess:         PO. Box 301           Librigston Delevere Ridge         Matrix:         Matrix:         Modess:         PO. Box 301           Librigston Delevere Ridge         Matrix:         Matrix:         Matrix:         Modess:         PO. Box 301           Librigston Delevere Ridge         Matrix:         Matrix:         Matrix:         Matrix:         Matrix:         Modess:         PO. Box 301           Real Floor 2@D'         9         1         X         Matrix:         Matrix:         Matrix:         Matrix:         Matrix: </th <th>Project Manager:</th> <th>ar: Robbie Runnels</th> <th>noiogie</th> <th>F</th> <th>C</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>8</th> <th>BILL TO</th> <th></th> <th></th> <th>1</th> <th></th> <th></th> <th>ANALYSIS</th> <th>FY</th> <th>SIS</th> <th>R</th> <th>REQUEST</th> <th>ST</th> <th></th> <th></th> <th></th>	Project Manager:	ar: Robbie Runnels	noiogie	F	C						8	BILL TO			1			ANALYSIS	FY	SIS	R	REQUEST	ST			
on         State: NM         Zip:         B3260         Company: Project Owner:         Echo Production (Ey:         Basin Env. Using Net         Dispect Owner:         Echo Production (Ey:         Longing Network         Matrix: (STS) 396-2378         Matrix: No         No         Same (STS) 396-2378         Matrix: No         Project Owner:         Echo Production (Ey:         Longing Network         Same (STS) 396-2378         Matrix:         Project Owner:         Company:         Same (STS) 396-2378         Matrix:         No         Project Owner:         Company:         Same (STS) 396-2378         Matrix:         For #:         Company:         Same (STS) 396-2378         Matrix:         Project Owner:         Same         Company:         Same	Address: P.(	B							P.O	.#:				-					-	_			$\neg$	_		-
System         Same IVM         Address:         Polget Owner:         Echo Production Address:         Polget Owner:         Echo Production Address:         Polget Owner:         Echo Production Phone #:         Long 30           FL         Lingston         Base:         Nult Taylor         Same IVM         Polget Owner:         Echo Production         City         Long 30           FL         Lingston         Same IVM         Prose #:         (575) 396-2378         Polget Owner:         Fax #:         (575) 396-2378           Matt Taylor         Fax #:         (575) 396-1429         Prose #:         (575) 396-1429         Polget Owner:         Fax #:         (575) 396-1429           Area 1 Floor 1@7         9         1         X         Pressent         Sample Infloor         Sample Time         Time         Choinide           Area 1 Floor 2@7         9         1         X         13/1/17         13:00         X	Invi								Con	npar	iy:	Basi	in Env.						-				_	_		-
E. Livingston Delaware Ridge         Project Owner:         Echo Production         City:         Lovingston           E. Livingston Delaware Ridge         Project Owner:         Echo Production         City:         Lovingston           E. Livingston Delaware Ridge         Sample I.D.         State:         NM TRX         Faxe:         (S75) 396-12/3           Mett Taylor         Faxe:         (S75) 396-12/3         Faxe:	-	2000	11	0	0200	0			Attn			Jody											_	_		-
Project Owner:         Echo Production         City:         Lonington           Itele         Nett Taylor         Faste:         NM         Zip:         82260           Wett Taylor         Faste:         (T5) 396-1429         Faste:         (T5) 396-1429         Chioride           Sample I.D.         Gi RAB OR (C)OMP:         Faste:         (T5) 396-1429         Chioride         Chioride           Area 1 Floor 1@?         gi 1         Sample I.D.         Gi RAB OR (C)OMP:         DATE         TIME         Chioride           Area 1 Floor 2@?         gi 1         X         Gi RAB OR (C)OMP:         1/3/1/7         1/3/00         X         X         X           Area 1 Floor 2@?         gi 1         X         Gi RAB OR (C)OMP:         1/3/1/7         1/3/00         X			)396-14	129					Add	ress	6	P.O. Bo	× 301	-									-	_	_	-
E. Livingston Delaware Ridge       State:       NM       Zip:       88260         Wett Taylor       Faxet:       (575) 396-14.29       Faxet:       (575) 396-14.29       Chloride         Mett Taylor       Faxet:       (575) 396-14.29       Faxet:       (575) 396-14.29       Chloride         Area 1 Floor 1@7       G       G       R Receiver       Samplu S       Chloride       Time         Area 1 Floor 2@7       G       I       X       G       GROUNDWATER       ISSUE       Chloride         Area 1 Floor 3@7       G       I       X       G       GROUNDWATER       ISSUE       Chloride         Area 1 Floor 3@7       G       I       X       G       GROUNDWATER       ISSUE       Chloride         Area 1 Floor 3@7       G       I       X       G       ISSUE       ISSUE       Chloride         Area 1 Floor 3@7       G       I       X       G       ISSUE       ISSUE       ISSUE       Chloride         Area 1 Floor 3@7       G       I       X       G       ISSUE       ISSUE <thissue< th="">       ISSUE       ISSU</thissue<>	Project #:	Project Own	Ier:	Ec	ho P	rodu	Ictio	-	Citv			Lovingto	5						-	_			-		_	
Image: Sample I.D.         MATRX         PROSERV         SAMPLING           Area 1 Floor 1@?         GR (G) OMP.         MATRX         PRESERV         SAMPLING           Area 1 Floor 1@?         g 1         K         GR (G) OMP.         SAMPLING         Children K           Area 1 Floor 1@?         g 1         K         GR (G) OMP.         GR (G) OMP.         Children K         Ch	Project Name:	E. Livingston Delaware Ridge						_	Ctat .		- 1		00000	-	M)	B)			-				-	-		-
Mett Taylor     Faxter:     (575) 396-1423       Sample I.D.     MATRX     PRESERV (575) 396-1423       Area 1 Floor 1@7     G (1000)       Area 1 Floor 1@7     G 1     G (1000)       Area 1 Floor 1@7     G 1     G (1000)       Area 1 Floor 1@7     G 1     G (1000)       Area 1 Floor 2@7     G 1     X     I (31/17)       Area 1 Floor 2@7     G 1     X     I (31/17)     I (300)     X     X       Area 1 Floor 2@7     G 1     X     G GROUNDWATER     I (31/17)     I (300)     X     X     X       Area 1 Floor 2@7     G 1     X     I (31/17)     I (300)     X     X     X     X     X       Area 1 Floor 2@7     G 1     X     I (31/17)     I (300)     X	<b>Project Location</b>	n: Lea							otat		MINI		09788	ide	15	021								_		-
Sample I.D.         MIRX         PRESERV PRESERV         SMMPLING         TPH           Area 1 Floor 1@7'         g         1         RAB 0 R (C) OMP.         TIME         TIME         TPH           Area 1 Floor 1@7'         g         1         RAB 0 R (C) OMP.         GROUNDWATER         TIME         TIME </td <td>Sampler Name:</td> <td>Matt Taylor</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Pho</td> <td>ne #</td> <td></td> <td>(575) 396</td> <td>3-2378</td> <td>lor</td> <td>(80</td> <td>(8</td> <td></td> <td></td> <td>-</td> <td>_</td> <td></td> <td></td> <td>-</td> <td>-</td> <td>_</td> <td>-</td>	Sampler Name:	Matt Taylor							Pho	ne #		(575) 396	3-2378	lor	(80	(8			-	_			-	-	_	-
MATRX         PRESERV         SAMPLING         THE           Area 1 Floor 1@?         G PARA         G PARA         G PARA         FILE         FILE <td< td=""><td>EDB   AB   KE DWY</td><td></td><td>1</td><td>1</td><td>1</td><td></td><td></td><td></td><td>Fax</td><td>#</td><td>_</td><td>575) 396-</td><td>1429</td><td>Ch</td><td>н</td><td>EX</td><td></td><td></td><td>-</td><td>_</td><td></td><td></td><td>-</td><td>_</td><td>_</td><td>-</td></td<>	EDB   AB   KE DWY		1	1	1				Fax	#	_	575) 396-	1429	Ch	н	EX			-	_			-	_	_	-
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Area 1 Floor 1@9'         g         1         x         intervention           Area 1 Floor 2@9'         g         1         x         intervention		Area 1 Floor 1@7'	0	4	-		-	-	-	_	_	1/21/17	43-00	<	<	I			t	+			t	┝	1	t
Area 1 Floor 2@?'         9         1         x         intervent         intervent <thintervent< th=""></thintervent<>	2	Area 1 Floor 1@9'		4	-	×			-			1/24/47	10.00	>	>	×			T	+			T	+		
Area 1 Floor 2@9'         g         1         x         intervention         interventin	(0)	Area 1 Floor 2@7'	9			×			-	× >		1/31/17	13-30	×	×				T	+			T	+	-	T
Area 1 Floor 3@?       g       1       x       x       1/31/17       1/3.40       x       x       1/31/17       1/3.40       x       x       x       1/31/17       1/3.40       x       x       x       x       1/31/17       1/3.40       x       x       x       x       1/31/17       1/3.40       x	4	Area 1 Floor 2@9'	9	-	-	×			-	×		1/31/17	13-30	< >	< ×				T	+			T	+	+	
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Damages. Cardinal's laibility and client's socilated rememby for any clim arising whether based in contract or lost, shall be limited to the amount paid by the client for the finale faile for incidental or consequential damages, including whost limitation, basies stemptions, based upon any of the above stated reasons or often ages.         Intel be label for incidental or consequential damages, including whost limitation, basies stemptions, based upon any of the above stated reasons or often ages.         at of or nailed to the performance of services latency by Cardinal within 30 days after competition of the applicable of the performance of services latency by Cardinal is based upon any of the above stated reasons or often ages.         Taylor       Date:       Received BY:       Received BY:       Phone Result:       Ves       No         Circle One)       Time:       630       Sample Condition       CHECKED BY:       Please email results to pm@basis         Bus - Other:       5,226       Cool intact.       (Initiats)       Please email results to pm@basis					-				-		1							1/100	7	+	+		Π	+	$\left  \right $	
aut of or relative beforemant of searches in regardless of whether such claim is based upon any of the above stated reaces.         Taylor       Date:       211/2017       Received By:       Robbie Runnels       Phone Result:       Yes       No         Taylor       Time:       630       Received By:       Robbie Runnels       Phone Result:       Yes       No         Octicele One)       Time:       5.2.2       Sample Condition       CHECKED BY:       Please email results to pm@bas         Bus - Other:       5.2.2       Press       Yes       Yes       Yes       Please	rease NOTE: Lability and realyses. All claims including t anvice. In no event shall Card	Sent's exclusive remedy for any r cause whatsoever shall be dee requental damages, including with requestion of the second se	claim arisin med walvec hout limitati	g wheth unless	er based made in	writing .	and rece	nived by	Cardina	al within	te amou 30 days	nt paid by the client after completion of	t for the of the applicable				L		Γ							
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† Cardinal cannot accept verbal dhanges. Please fax written changes to 575-393-2476

Revision 1.0 FORM-006



February 08, 2017

ROBBIE RUNNELS Basin Environmental Service P.O. Box 301 Lovington, NM 88260

RE: E. LIVINGSTON RIDGE DELAWARE

Enclosed are the results of analyses for samples received by the laboratory on 02/01/17 15:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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 <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 FLOOR 1 @ 6' (H700246-01)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	848	16.0	02/03/2017	ND	432	108	400	0.00	

## Sample ID: AREA 2 FLOOR 1 @ 10' (H700246-02)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	02/03/2017	ND	432	108	400	0.00	

#### Sample ID: AREA 2 FLOOR 1 @ 13' (H700246-03)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	14800	16.0	02/03/2017	ND	432	108	400	0.00	

### Sample ID: AREA 2 FLOOR 3 @ 7' (H700246-04)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2930	16.0	02/03/2017	ND	432	108	400	0.00	

#### **Cardinal Laboratories**

\*=Accredited Analyte

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 FLOOR 3 @ 11' (H700246-05)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12800	16.0	02/03/2017	ND	432	108	400	0.00	QM-07

## Sample ID: AREA 2 FLOOR 3 @ 13' (H700246-06)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	17600	16.0	02/03/2017	ND	432	108	400	0.00	

## Sample ID: AREA 2 FLOOR 4 @ 7' (H700246-07)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3720	16.0	02/03/2017	ND	432	108	400	0.00	

### Sample ID: AREA 2 FLOOR 4 @ 11' (H700246-08)

Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	24400	16.0	02/03/2017	ND	432	108	400	0.00	

### Sample ID: AREA 2 FLOOR 4 @ 13' (H700246-09)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	30000	16.0	02/03/2017	ND	432	108	400	0.00	

### Cardinal Laboratories

\*=Accredited Analyte

Celez D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 FLOOR 6 @ 5' (H700246-10)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	15.6	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	105	% 35-147	,						
Surrogate: 1-Chlorooctadecane	109	% 28-171							

# Sample ID: AREA 2 EW 4 @ 4' (H700246-11)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	103	% 35-147	,						
Surrogate: 1-Chlorooctadecane	97.3	% 28-171							

### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 EW 6 @ 4' (H700246-12)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	89.2	% 35-147	,						
Surrogate: 1-Chlorooctadecane	101	% 28-171							

## Sample ID: AREA 2 NW 4 @ 4' (H700246-13)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	
Surrogate: 1-Chlorooctane	98.8	% 35-147	,						
Surrogate: 1-Chlorooctadecane	99.0	% 28-171							

### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 WW 8 @ 4' (H700246-14)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/03/2017	ND	192	96.0	200	10.2	
DRO >C10-C28	<10.0	10.0	02/03/2017	ND	204	102	200	9.69	
Surrogate: 1-Chlorooctane	88.5	% 35-147							
Surrogate: 1-Chlorooctadecane	101	% 28-171							

## Sample ID: AREA 2 SW 5 @ 4' (H700246-15)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/03/2017	ND	192	96.0	200	10.2	
DRO >C10-C28	<10.0	10.0	02/03/2017	ND	204	102	200	9.69	
Surrogate: 1-Chlorooctane	87.2	% 35-147	7						
Surrogate: 1-Chlorooctadecane	98.8	% 28-171							

### Cardinal Laboratories

### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/01/2017	Sampling Date:	01/31/2017
Reported:	02/08/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA 2 FLOOR 7 @ 5' (H700246-16)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/03/2017	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/03/2017	ND	192	96.0	200	10.2	
DRO >C10-C28	<10.0	10.0	02/03/2017	ND	204	102	200	9.69	
Surrogate: 1-Chlorooctane	87.2	% 35-147	,						
Surrogate: 1-Chlorooctadecane	99.3	% 28-171							

#### **Cardinal Laboratories**

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



## **Notes and Definitions**

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

#### **Cardinal Laboratories**

### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatscever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including whose shall be interruptors, loss of profits incurred by client, its subsidiaries, afflicate or successor arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

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Company Name:	Basin Environmental	Basin Environmental Service Technologies, LLC	LTC	BILL TO	.70		-	4	-	-3	ANAL TOIO	NEWOLO	0101		
Project Manager:	Robbie Runnels			P.O. #:			_	_	_	-		_			
Address: P.O.	P.O. Box 301			Company:	Basin Env.	v.	-	_		_	_		_		
City: Lovington		State: NM Zip:	88260	Attn:	Jody			_		-		_	_		
Ð	(575)396-2378	Fax #: (575)396-1429	ö	Address:	P.O. Box 301	-	_			-	_		-		
		Project Owner:	Echo Production	City:	Lovington		-	M)	B)			_			
ame.	E. Livingston Delaware Ridge	idge		State: NM Zip:	p: 88260	:60	ide	15	021	_	_				
	. 13			Phone #:	(575) 396-2378	78	lor	(80	(8)						
Project Location:	LOO				(575) 396-1429	99	Ch	н	EX	_	_			_	
Sampler Name:	Matt Taylor		MATRIX	PRESERV.	SAMPLING	5	C	TP	вт	_	_				
FOR LAB USE ONLY		OMP.	ER R												
Lab I.D.	Sample I.D.	G)RAB OR (C)C	# CONTAINERS GROUNDWATE WASTEWATER SOIL OIL SLUDGE	OTHER : ACID/BASE: ICE / COOL OTHER :	DATE	TIME				-					
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×	Ano 2 Elor 3@7	0	1 ×	×	1/31/17	9:40	×								
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PLEASE NOTE: Liability a	PLEASE NOTE: Lability and Damages. Cardinalis hability and dent's exclusive namedy for any claim arising whether based in contrast or tort, shall be limited to the annound part by the applicable pre-EASE NOTE: Lability and Damages. Cardinali shally and dent's exclusive inautody for any claim arising whether based in contrast or tort, shall be limited to the annound part by the applicable pre-EASE NOTE: Lability and Damages. Cardinali shally and dent's exclusive inautody for any claim arising whether based in contrast or tort, shall be done on the applicable pre-EASE NOTE: Lability and Damages. Cardinali shally and dent's exclusive inautody for any claim arising whether based in contrast or tort, and by claim arising bard resolution.	t's exclusive remedy for any claim ause whatsoever shall be deemed wa	ising whether based in contract or to need unless made in writing and rece	ort, shall be limited to the amou inved by Cardinal within 30 days from or best of profits incurred	rit paid by the calent s after completion o d by client, its subsi	era ror une n of the applicable bsidiaries,									
analyses, All carriers inclusive service. In no event shall Card affinities or successors arising Relinquished By:	service. In me end stall Cardinal test labele for incidental or consequential damages, including without limitation, basiness memptoors, uses of uservice, soor resource or otherwise, services or subset of an related to the performance of services hearafter by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise, and finance of services hearafter by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise, and finance of services hearafter by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Arrive test of the above stated reasons or otherwise. The above stated reasons of services hearafter by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Arrive test of the above stated reasons or otherwise. The above stated reasons or otherwise. The above stated reasons of services hearafter by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. The above stated reasons or otherwise. The above stated reasons or otherwise. The above stated reasons of services hearafter by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. The above stated reasons of services hearafter by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. The above stated reasons or otherwise. The above stated reasons or otherwise. The above stated reasons of services in the above stated reasons or otherwise. The above stated re	of services hereunder by Cardinal, n Date: 2/1/2017 Time:	Jamages, including without limitation, basiness memptions, loss or use, or use or use of the above stated toos herearder by Cardinal, regardless of whether such claim is based upon any of the above stated Date: 2/1/2017 Received By: 2/1/2017 Robbie Runnels	Robbie Runnels	iled reasons or oth	Phone Result: Fax Result: REMARKS:	sult: S:	□ Yes	00	No	Add'l Phone #: Add'l Fax #:	井			
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† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476 Cool Intact

Sampler - UPS - Bus - Other:

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	Basin Environnels		P.O. #:			_				
Address: P.O. Box 301	301		Company:	Basin Env.				_		_
8	State: NM	Zip: 88260	Attn:	Jody			_			
Ð #	-2378 Fax #: (575)396-1429	96-1429	Address:	P.O. Box 301	_	_	-			_
		r: Echo Production	City:	Lovington	2	A)	B)			_
ame:	E. Livingston Delaware Ridge		State: NM Zip:	88260	ride	015	3021			
8	Lea		Phone #: (57)	(575) 396-2378	nlor	(80	X (8	_		
Toject Loonnom			Fax #: (575)	(575) 396-1429	Cł	PH	TE:	_		
Sampler Name: Matt	Matt Taylor	MATRIX	PRESERV	SAMPLING		T	BT		_	
FOR LAB USE ONLY		2	-				-			
Lab I.D.	Sample I.D.	AB OR (C)OI NTAINERS UNDWATER TEWATER	DGE IER : D/BASE: / COOL IER :							
11nn24lb		# CO	SLU OT AC ICE OT	DATE TIME			-	+		
_	- 2 EWAQA	1	X 1/3	1/31/17 7:50	×	×				
_	Area 2 EW 4@4		x 1/3	1/31/17 8:00	×	×				
_	Area 2 EW6@4	× -			×	×				
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affinites or successors arising out of or related to the perform Relinquished By: Matt Taylor	aylor Time:	ardinel, regardless of whether such dai Received By: 017 620	Robbie Runnels	Phone Result: Fax Result: REMARKS:	asult: S:	□ Yes	No No	Add'l Phone #: Add'l Fax #:	*****	
Relinquished By:	Date III	7 Received By:	Henson	Please	email r	esults	to pm@l	Please email results to pm@basinenv.com	-	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	other: #75	5.20 Sample C Coop II	20 Sample Condition CHECKED BY: Cool Intact (Intrias) 7 Yes PYes No No	F BY:	[1, 1]					



February 09, 2017

ROBBIE RUNNELS Basin Environmental Service P.O. Box 301 Lovington, NM 88260

RE: E. LIVINGSTON RIDGE DELAWARE

Enclosed are the results of analyses for samples received by the laboratory on 02/03/17 15:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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 <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	02/03/2017	Sampling Date:	02/01/2017
Reported:	02/09/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #1 FLOOR 3 @ 23' (H700284-01)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7330	16.0	02/09/2017	ND	400	100	400	3.92	

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\*=Accredited Analyte

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Celeg D. Keine

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

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

(5	(575) 393-2326 FAX (575) 393-2476	76	BILL TO			ANALYSIS REQUEST
Company Name:	Basin Environmental Service Technologies, LLC	S, LLV	P.O. #	_		
	Robbie Runnels			Rasin Env.	_	
Address: P.O. Box 301			Jany.			
City: Lovington	State: NM	Zip: 88200		224		
0 #	6-2378 Fax #: (575)396-1429	6-1429	Address: P.U. Box 301	X 301		
	Project Owner:	Echo Production			M) 1B)	
	E. Livingston Delaware Ridge		State: NM Zip:	88260 ride	015 302	
	3		Phone #: (575) 396-2378		-	
Project Location:			Fax #: (575) 396-1429			
Sampler Name: Ma	Matt Taylor	T I WATELY	ESERV		-	
FOR LAB USE ONLY		P.				
Lab I.D.	Sample I.D.	B)RAB OR (C)OM CONTAINERS ROUNDWATER /ASTEWATER OIL DIL GLUDGE	DTHER : ACID/BASE: CE / COOL DTHER :	TIME		
H IUUZAD		4 G V V V	X	13:30 X		
P	Area#1 Floor 3 @ 23					
PLEASE NOTE: Liability and D	25	lent's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the standard of the second water tracks made in writing and received by Cardinal within 30 days after con-	8 4	he client for the sletion of the applicable	ļ	
2	or consex	ause wratescene and over the second	of use, or loss of profits incurred by clear, a asset incon any of the above stated reasons	s or otherwise.		
service. In no event shall Cardinal be labor for no affilates or successors arising out of or related to Relinquished By: Matt Taylor	formance	ndreal, regardless of whether such dam is based upon any or ass according 117 Received By: 117 Robbie Runnels	Robbie Runnels	Phone Result: Fax Result: REMARKS:	□ Yes	No Add'l Fax #:
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Page 4 of 4

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February 09, 2017

ROBBIE RUNNELS Basin Environmental Service P.O. Box 301 Lovington, NM 88260

RE: E. LIVINGSTON RIDGE DELAWARE

Enclosed are the results of analyses for samples received by the laboratory on 02/03/17 15:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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 <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	02/03/2017	Sampling Date:	02/01/2017
Reported:	02/09/2017	Sampling Type:	Soil
Project Name:	E. LIVINGSTON RIDGE DELAWARE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

### Sample ID: AREA #2 FLOOR 3 @ 23' (H700285-01)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4660	16.0	02/09/2017	ND	400	100	400	3.92	

#### **Cardinal Laboratories**

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any daim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatscever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including whose shall be instrumed by client, its subsidiaries, affiliates or successor arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keine

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

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

FORM-006	Delivered By: (Circle One) Sampler - UPS - Bus - Other:	hu	Relinquished By:	Ma	Relinquished By:	affiliates or successors arisin	PLEASE NOTE: Liability an analyses, All claims including							HTDOJES	Lab I.D.		FOR LAB USE ONLY	Sampler Name:	Project Location:	Project Name:	Project #:		Lovi	ess:	ana	Company Name:	6
06	Delivered By: (Circle One) Sampler - UPS - Bus - Other: サフら	Time:	r: Date:	Matt Taylor Time:	Date:	for consequental damages informance of services here	PLEASE NOTE: Liability and Damages. Cardinal's lability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be analyses. All claims including those for negligence and any other cause whatscener shall be deemed waived unless made in writen not necessarily for any client of the cardinal sectors.					Area#2 Floor 3 @ 23'	· · · · · · · · · · · · · · · · · · ·	9	Sample I.D.			Matt I aylor		1 E	Project Owner:	(575)396-2378 Fax #: ()	ton State: NM	Box 301	er: Robbie Runnels	1.5	(i 1 0
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+ Cardinal cannot accent verbal changes Places for written changes to ETE 202 2476	Sample Condition CHECKED BY: Cool Intact (Initials)	Menson	M	<b>Robbie Runnels</b>		ions, loss of use, or loss of profits incum h claim is based upon any of the above s	ontract or tort, shall be limited to the amo					×	O S O A	SOIL DIL SLUDG DTHER ACID/B. CE / CO DTHER	ASE: OOL		MATRIX PRESERV.	Fax #:	Phone #:	State: NM	luction City:	Address:	Attn:	Company:	P.O. #:	B	
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