AGAVE
ENERGY COMPANY

Dagger Draw Gas System – Four Mile Draw

Order Number: 2RP-2632-0

Sec 12 T19S R24E

Eddy County, New Mexico

March 17, 2016

1.0 Introduction

On November 14, 2014 Agave Energy Company was made aware of a potential release on an Agave pipeline. The notification came from the landowner who had discovered an area that they suspected was being affected by a pipeline release. The landowner described the location as an area on the north bank of leg of a wash/arroyo referred to as Four Mile Draw. An Agave representative visited the site that morning to conduct the initial investigation.

Initial reporting had identified the potentially affected area as 45 yds. by 25 yds. Upon further investigation, the area with a noticeable decrease in vegetation density was approximately 100 feet by 40 feet. The lack of vegetation was the only observable evidence that there may have been a release. There were no free liquids on or within the soil profile, nor was there any soil staining found.

Part of this potentially affected area does fall within the flood zone of this branch of Four Mile Draw, along with the private ranch road that parallels the pipeline ROW. Agave felt it prudent to give immediate notification of the potential release within the confines of a water way, rather than wait for soil sampling results to determine if there was a release or not.

This branch of Four Mile Draw is ephemeral, and is normally completely dry, only having water during extreme precipitation events. However, out of caution Agave reached out to Justin Riggs with the Army Corps of Engineers (ACoE), as the agency with jurisdiction over U.S. waterways. In correspondence with Mr. Riggs (provided with the initial C-141 form), he informed Agave that the cleanup work for Oil and Gas operations is covered under the Army Corp of Engineers' Nationwide Permit #20. Further, he informed us that being that the draw is ephemeral in nature, no reporting to the ACoE was necessary. Based on this guidance, Agave did not seek any further authorization or permits from ACoE, for the potential remediation work.

Soil samples were collected from the site to determine the nature of soil contamination.

2.0 Background

The reportedly affected area was located in part over a pipeline ROW containing a 12" PVC low pressure gas line, a 6" PVC low pressure gas line, and a 6" PVC water line. The water line belongs to Yates Petroleum Corporation. The two gas lines were constructed and operated by Yates Petroleum Corporation, until 2013 when ownership was transferred to Agave Energy Company. Agave shows no records of prior releases at this location. There is a 2" steel line riser, which is suspected to be connected to the 12" PVC gas line, within the confines of the apparently affected area. This 2" line would have been used to pull a vacuum on the gas line to remove any liquids from the line. If there had been a leak along the line, the connection of the 2" steel line to the 12" PVC line would be the most likely point of release.

All of the PVC lines have subsequently been permanently removed from service, are cut and capped and have no potential to release hydrocarbons or produced water.

3.0 Site Ranking

Based on the *Guidelines for Remediation of Leaks, Spills and Releases* (NMOCD, August 13, 1993), hereafter referred to as "the Guidelines", the site ranking criteria are as follows.

Depth to Ground Water: The nearest Depth to Groundwater record (RA-06436) listed on the New Mexico Office of the State Engineer (Sec 12, T19S-R24E) shows depth of groundwater to be approximately 300 feet. Exhibiting a depth to groundwater of greater than 100 feet, results in a ranking score of 0.

Wellhead Protection Area: The nearest water sources to the station is one well used for livestock watering, located 650 feet to the northeast of the site. According to the *Guidelines,* being less than 1000 feet of a water source, or less than 200 feet from private domestic water source, results in a site ranking of 20. Section III(A)(3) of the Guidelines states, "Private and domestic water sources are those water sources used by less than five households for domestic or stock purposes." Water well RA-06436 falls into the definition of a private domestic water source as it is used exclusively by one household for stock watering purposes. Being greater than 200 feet away from a private domestic water source results in a site ranking of 0.

Distance to Surface Water Body: The nearest surface water body is the Pecos River, located 14 miles to the east, resulting in a site ranking of 0.

Depth to groundwater >100' (per NMOSE)	0
Not in a wellhead protection area	0
Distance to surface water body >1000'	0
Total Ranking Score =	**0**

For sites with a Total Ranking Score of 0, the Recommended Remedial Action Levels (RRAL) are:

Benzene	10 ppm
BTEX	50 ppm
TPH	5000 ppm

4.0 Soil Sampling

After making the initial notification of a potential release, Agave conducted soil sampling at the location. The initial soil samples collected were intended to determine the nature of contamination. We were specifically attempting to identify whether or not the apparent contamination was primarily hydrocarbons, indicating a gas leak, or chlorides, indicating a produced water line leak.

These first samples were exploratory and not intended to delineate the extent of contamination. These first samples, H403180-01 and H403180-02, were collected on the south and north sides (respectively) of the pipeline ROW, at 10 feet from the 2" riser. The samples were collected from the top two feet of the soil profile. The rational for collecting samples at this location and at this depth, was the fact that if there had been a release it would most likely have been at the riser, and if soil contamination was responsible for the lack of vegetation, we should be able to observe it in the top two feet of the profile. This is due to the fact that the root depth for most rangeland grasses, weeds and shrubs found in this area does not extend past the two foot depth. Sample H403180-01 detected hydrocarbons in levels barely above the analytical detection limit, and H403180-02 was unable to detect any contamination. After examining the sample results with our operations personnel, we've determined that the minimal amounts of contamination detected on the south side of the riser were most likely to have been caused by small incidental spills occurring while connecting and disconnecting vacuum trucks to the 2" riser, while removing liquids from the line These incidental releases would not have been enough to result in the lack of vegetation in the larger area surrounding the pipeline ROW.

A subsequent round of testing was conducted to determine whether any contamination would be detected throughout the purportedly affected area. Eight sample locations were selected at random, using the random number table found in Appendix B. A sample location diagram is presented in Appendix C. At these locations a sample was collected from the top two feet of the soil profile. The samples were analyzed for chlorides, total petroleum hydrocarbons, and where petroleum hydrocarbons were detected the sample was analyzed for BTEX. Samples 1411679-004 and 1411679-007 detected very minor amounts petroleum hydrocarbons, 23 and 45 ppm respectively, but failed to detect any amount of BTEX or chloride. A summary of the sample results are presented in Appendix A

Having failed to detect any significant soil contamination that could be responsible for the lack of vegetation, Agave reached out to Dr. Robert Flynn at the New Mexico State University Agricultural Science Center in Artesia, for additional guidance as to what could be the cause. Dr. Flynn made a field visit to the location to gather information and offer suggestions as to how we should proceed in our investigation. Dr. Flynn made several observations that may be related to the sparse plant growth. They were that:

1) The area was heavily trafficked by livestock. Cattle frequent the immediate area to both graze, and to cross the draw.
2) Rather than having top soil for growth, the land within and immediately surrounding the pipeline ROW appears to be composed of caliche. This caliche was most likely exposed during the installation of the pipeline, was used to bury the lines, and build the crown marking the ROW. This caliche is not ideal for plant growth.

The suggestion was also made to conduct analyses on the soil for several key soil fertility characteristics. The result of this sampling is presented in Appendix A. The analyses show several issues that are most likely responsible for the reduced vegetation. The soil in this area was shown to contain no practicably detectable amount of Nitrogen or Phosphorus, and very minor amounts of Potassium. These three ions play the prominent role in soil fertility, without which plant growth is not possible. We also observe that this soil has very high levels of Calcium, and low levels of Sodium. This is expected given that the soil is comprised mainly of caliche (Calcium Carbonate). In fertile, productive soil we would expect to see a Ca:K ratio of approximately 10:1; however, we are seeing an average ratio of 91:1. This imbalance of ions, results in a soil with very low fertility and productivity.

5.0 Conclusion and Proposed Action

Based on the soil sampling completed at this location Agave believes that the cause of the sparse vegetation is soil fertility deficiencies, and issues with rangeland management. There is no evidence to suggest that there has been a pipeline release at this location, which could reasonably affect plant growth on this large of an area. As such Agave doesn't believe that any excavation work should be required, due to the fact that it would not benefit the area. On the contrary it would cause greater damage to the location due to the fact that the pipeline ROW while running parallel to a private road, is not accessible from the road. Mobilizing equipment and accessing the ROW would result in greater damage to vegetation at the site. For this reason, Agave is requesting closure of 2RP-2632.

If you have any questions regarding this matter, please do not hesitate to call me at (575) 513-8988, or email at KEgan@agaveenergy.com

Respectfully,

Kerry Egan

Engineering Technician

Appendix A: Soil Sampling Summary

Soil Sample Summary: Four Mile

Analytical Report Sample ID	Depth	BTEX (ppm)	Benzene (ppm)	GRO (ppm)	DRO (ppm)	Cl- (ppm)	Comments
H403180-01	0'-2'	0.504	0.06	ND	22	ND	Taken from south side of pipeline ROW, 10' from the 2" riser.
H403180-02	0'-2'	ND	ND	ND	ND	ND	Taken from north side of pipeline ROW, 10' from the 2" riser.
1411679-001	0'-2'	ND	ND	ND	ND	ND	No petroleum hydrocarbons detected, no chlorides. Taken from top 2' of soil profile.
1411679-002	0'-2'	ND	ND	ND	ND	ND	No petroleum hydrocarbons detected, no chlorides. Taken from top 2' of soil profile.
1411679-003	0'-2'	ND	ND	ND	ND	ND	No petroleum hydrocarbons detected, no chlorides. Taken from top 2' of soil profile.
1411679-004	0'-2'	ND	ND	ND	23	ND	Minimal amount of petroleum hydrocarbons detected, no BTEX detected.
1411679-005	0'-2'	ND	ND	ND	ND	ND	No petroleum hydrocarbons detected, no chlorides. Taken from top 2' of soil profile.
1411679-006	0'-2'	ND	ND	ND	ND	ND	No petroleum hydrocarbons detected, no chlorides. Taken from top 2' of soil profile.
1411679-007	0'-2'	ND	ND	ND	45	ND	Minimal amount of petroleum hydrocarbons detected, no BTEX detected.
1411679-008	0'-2'	ND	ND	ND	ND	ND	No petroleum hydrocarbons detected, no chlorides. Taken from top 2' of soil profile.

Soil Sample Summary: Four Mile

Analytical Report Sample ID	Depth	Nitrogen, Nitrite (ppm)	Nitrogen, Nitrate (ppm)	Phosphorous (ppm)	Potassium (ppm)	Calcium (ppm)	Magnesium (ppm)	Sodium (ppm)	Comments
1411679-001	0'-2'	ND	ND	ND	1200	220000	45000	140	
1411679-002	0'-2'	ND	ND	ND	1300	210000	33000	120	
1411679-003	0'-2'	ND	ND	ND	2100	110000	18000	78	
1411679-004	0'-2'	ND	ND	ND	1600	140000	32000	110	
1411679-005	0'-2'	ND	ND	ND	1500	170000	42000	150	
1411679-006	0'-2'	ND	ND	ND	2600	75000	16000	69	
1411679-007	0'-2'	ND	ND	ND	1700	140000	35000	130	
1411679-008	0'-2'	ND	ND	ND	1700	180000	42000	140	

Appendix B. Random Number Tables

Reproduced from Million Random Digits, used with permission of the Rand Corporation, Copyright, 1955, The Free Press. The publication is available for free on the Internet at http://www.rand.org/publications/classics/randomdigits.

All of the sampling plans presented in this handbook are based on the assumption that the packages constituting the sample are chosen at random from the inspection lot. Randomness in this instance means that every package in the lot has an equal chance of being selected as part of the sample. It does not matter what other packages have already been chosen, what the package net contents are, or where the package is located in the lot.

To obtain a random sample, two steps are necessary. First it is necessary to identify each package in the lot of packages with a specific number whether on the shelf, in the warehouse, or coming off the packaging line. Then it is necessary to obtain a series of random numbers. These random numbers indicate exactly which packages in the lot shall be taken for the sample.

The Random Number Table

The random number tables in Appendix B are composed of the digits from 0 through 9, with approximately equal frequency of occurrence. This appendix consists of 8 pages. On each page digits are printed in blocks of five columns and blocks of five rows. The printing of the table in blocks is intended only to make it easier to locate specific columns and rows.

Random Starting Place

Starting Page. The Random Digit pages numbered B-2 through B-8. You can use the day of the week to determine the starting page or use the first page for the first lot you test in a location, the second page for the second lot and so on moving to the following page for each new lot.

Starting Column and Row. You may choose a starting page in the random number table and with eyes closed, drop a pencil anywhere on the page to indicate a starting place in the table.

For example, assume that testing takes place on the 3rd day of the week. Start with Table 3 of Appendix B. Assume you dropped your pencil on the page and it has indicated a starting place at column 22, row 45. That number is 1.

If 1-digit random numbers are needed, record them, going down the column to the bottom of the page and then to the top of the next column, and so on. Ignore duplicates and record zero (0) as ten (10). Following on from the last example, these numbers are 3, 2, 9, 8, etc. If two-digit random numbers are needed, rule off the pages, and further pages if necessary, in columns of two digits each. If there is a single column left on the page, ignore this column, and rule the next page in columns of two. Again, ignore duplicate numbers and record 00 as 100. For example, using the same starting place as in the last example (Table 3, column 22, row 45), the recorded two-digit recorded numbers would be 11, 34, 26, 95, etc.. When three-digit numbers are needed, rule the page in columns of three. Record 000 as 1000. Starting on Table 3, column 22, row 45, the recorded numbers would be 119, 346, 269, 959, etc..

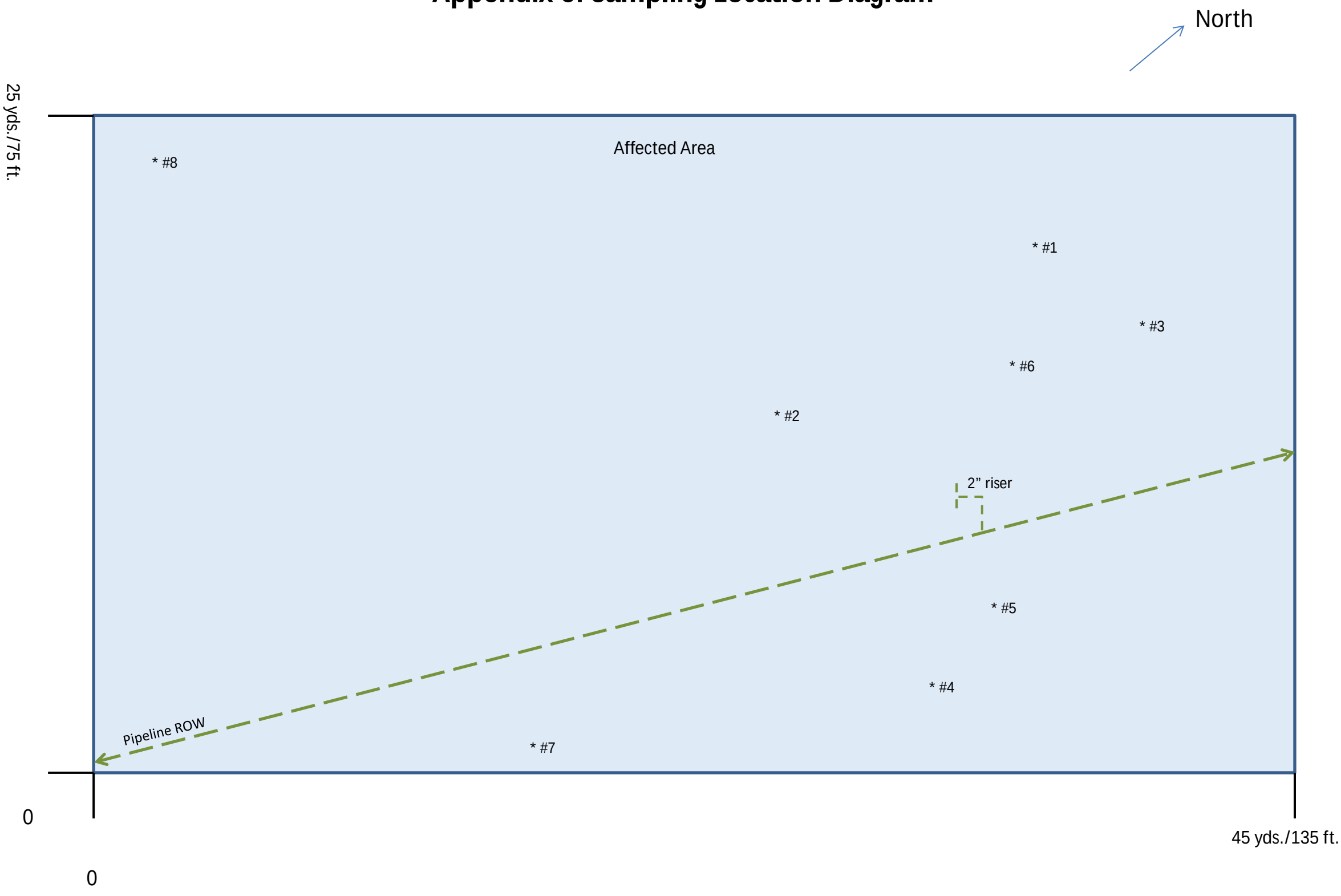
TABLE 1 - RANDOM DIGITS

11164	36318	75061	37674	26320	75100	10431	20418	19228	91792
21218	91791	76831	58678	87054	31687	93205	43685	19732	08468
10438	44482	66558	37649	08882	90870	12462	41810	01806	02977
36792	26236	33266	66583	60881	97395	20461	36742	02852	50564
73944	04773	12032	51414	82384	38370	00249	80709	72605	67497
49563	12872	14063	93104	78483	72717	68714	18048	25003	04151
64208	48237	41701	73117	33242	42314	83049	21933	92813	04763
51486	72875	38605	29341	80749	80151	33835	52602	79147	08868
99756	26360	64516	17971	48478	09610	04638	17141	09227	10606
71325	55217	13015	72907	00431	45117	33827	92873	02953	85474
65285	97198	12138	53010	94601	15838	16805	61004	43516	17020
17264	57327	38224	29301	31381	38109	34976	65692	98566	29550
95639	99754	31199	92558	68368	04985	51092	37780	40261	14479
61555	76404	86210	11808	12841	45147	97438	60022	12645	62000
78137	98768	04689	87130	79225	08153	84967	64539	79493	74917
62490	99215	84987	28759	19177	14733	24550	28067	68894	38490
24216	63444	21283	07044	92729	37284	13211	37485	10415	36457
16975	95428	33226	55903	31605	43817	22250	03918	46999	98501
59138	39542	71168	57609	91510	77904	74244	50940	31553	62562
29478	59652	50414	31966	87912	87154	12944	49862	96566	48825
96155	95009	27429	72918	08457	78134	48407	26061	58754	05326
29621	66583	62966	12468	20245	14015	04014	35713	03980	03024
12639	75291	71020	17265	41598	64074	64629	63293	53307	48766
14544	37134	54714	02401	63228	26831	19386	15457	17999	18306
83403	88827	09834	11333	68431	31706	26652	04711	34593	22561
67642	05204	30697	44806	96989	68403	85621	45556	35434	09532
64041	99011	14610	40273	09482	62864	01573	82274	81446	32477
17048	94523	97444	59904	16936	39384	97551	09620	63932	03091
93039	89416	52795	10631	09728	68202	20963	02477	55494	39563
82244	34392	96607	17220	51984	10753	76272	50985	97593	34320
96990	55244	70693	25255	40029	23289	48819	07159	60172	81697
09119	74803	97303	88701	51380	73143	98251	78635	27556	20712
57666	41204	47589	78364	38266	94393	70713	53388	79865	92069
46492	61594	26729	58272	81754	14648	77210	12923	53712	87771
08433	19172	08320	20839	13715	10597	17234	39355	74816	03363
10011	75004	86054	41190	10061	19660	03500	68412	57812	57929
92420	65431	16530	05547	10683	88102	30176	84750	10115	69220
35542	55865	07304	47010	43233	57022	52161	82976	47981	46588
86595	26247	18552	29491	33712	32285	64844	69395	41387	87195
72115	34985	58036	99137	47482	06204	24138	24272	16196	04393
07428	58863	96023	88936	51343	70958	96768	74317	27176	29600
35379	27922	28906	55013	26937	48174	04197	36074	65315	12537
10982	22807	10920	26299	23593	64629	57801	10437	43965	15344
90127	33341	77806	12446	15444	49244	47277	11346	15884	28131
63002	12990	23510	68774	48983	20481	59815	67248	17076	78910
40779	86382	48454	65269	91239	45989	45389	54847	77919	41105
43216	12608	18167	84631	94058	82458	15139	76856	86019	47928
96167	64375	74108	93643	09204	98855	59051	56492	11933	64958
70975	62693	35684	72607	23026	37004	32989	24843	01128	74658
85812	61875	23570	75754	29090	40264	80399	47254	40135	69916

TABLE 1 - RANDOM DIGITS

11164	36318	75061	37674	26320	75100	10431	20418	19228	91792
21215	91791	76831	58678	87054	31687	93205	43685	19732	08468
10438	44482	66558	37649	08882	90870	12462	41810	01806	02977
36792	26236	33266	66583	60881	97395	20461	36742	02852	50564
73944	04773	12032	51414	82384	38370	00249	80709	72605	67497
49563	12872	14063	93104	78483	72717	68714	18048	25005	04151
64208	48237	41701	73117	33242	42314	83049	21933	92813	04763
51486	72875	38605	29341	80749	80151	33835	52602	79147	08868
99756	26360	64516	17971	48478	09610	04638	17141	09227	10606
71325	55217	13015	72907	00431	45117	33827	92873	02953	85474
65285	97198	12138	53010	94601	15838	16805	61004	43516	17020
17264	57327	38224	29301	31381	38109	34976	65692	98566	29550
95639	99754	31199	92558	68368	04985	51092	37780	40261	14479
61555	76404	86210	11808	12841	45147	97438	60022	12645	62000
78137	98768	04689	87130	79225	08153	84967	64539	79493	74917
62490	99215	84987	28759	19177	14733	24550	28067	68894	38490
24216	63444	21283	07044	92729	37284	13211	37485	10415	36457
16975	95428	33226	55903	31605	43817	22250	03918	46999	98501
59138	39542	71168	57609	91510	77904	74244	50940	31553	62562
29478	59652	50414	31966	87912	87154	12944	49862	96566	48825
96155	95009	27429	72918	08457	78134	48407	26061	58754	05326
29621	66583	62966	12468	20245	14015	04014	35713	03980	03024
12639	75291	71020	17265	41598	64074	64629	63293	53307	48766
14544	37134	54714	02401	63228	26831	19386	15457	17999	18306
83403	88827	09834	11333	68431	31706	26652	04711	34593	22561
67642	05204	30697	44806	96989	68403	85621	45556	35434	09532
64041	99011	14610	40273	09482	62864	01573	82274	81446	32477
17048	94523	97444	59904	16936	39384	97551	09620	63932	03091
93039	89416	52795	10631	09728	68202	20963	02477	55494	39563
82244	34392	96607	17220	51984	10753	76272	50985	97593	34320
96990	55244	70693	25255	40029	23289	48819	07159	60172	81697
09119	74803	97303	88701	51380	73143	98251	78635	27556	20712
57666	41204	47589	78364	38266	94393	70713	53388	79865	92069
46492	61594	26729	58272	81754	14648	77210	12923	53712	87771
08433	19172	08320	20839	13715	10597	17234	39355	74816	03363
10011	75004	86054	41190	10061	19660	03500	68412	57812	57929
92420	65431	16530	05547	10683	88102	30176	84750	10115	69220
35542	55865	07304	47010	43233	57022	52161	82976	47981	46588
86595	26247	18552	29491	33712	32285	64844	69395	41387	87195
72115	34985	58036	99137	47482	06204	24138	24272	16196	04393
07428	58863	96023	88936	51343	70958	96768	74317	27176	29600
35379	27922	28906	55013	26937	48174	04197	36074	65315	12537
10982	22807	10920	26299	23593	64629	57801	10437	43965	15344
90127	33341	77806	12446	15444	49244	47277	11346	15884	28131
63002	12990	23510	68774	48983	20481	59815	67248	17076	78910
40779	86382	48454	65269	91239	45989	45389	54847	77919	41105
43216	12608	18167	84631	94058	82458	15139	76856	86019	47928
96167	64375	74108	93643	09204	98855	59051	56492	11933	64958
70975	62693	35684	72607	23026	37004	32989	24843	01128	74658
85812	61875	23570	75754	29090	40264	80399	47254	40135	69916

Appendix C: Sampling Location Diagram



Sample Locations

Diagram ID	Analytical Report Sample ID	X-Axis	Y-Axis	Depth
#1	1411679-001	111	061	0’-2’
#2	1411679-002	075	041	0’-2’
#3	1411679-003	121	054	0’-2’
#4	1411679-004	088	012	0’-2’
#5	1411679-005	100	024	0’-2’
#6	1411679-006	104	047	0’-2’
#7	1411679-007	052	004	0’-2’
#8	1411679-008	015	070	0’-2’

The apparently affected area was approximately 45 yds. (135 ft.) by 25 yds. (75 ft.). In order to properly collect samples in a random fashion the area was set up as a grid with the origin (0,0) being located in the southwest corner, which was nearest to the private road on the south side of the pipeline Right Of Way. The location of the samples was selected randomly using the Random Numbers Table found in Appendix A. Starting with column one, row one on Table 1, locations were selected by identifying three digit coordinates. Values for x-axis coordinates were restricted to the range 000-135. Values for y-axis coordinates were restricted to the range 000-075.

Appendix D: Sampling Data

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 05, 2014

Kerry Egan
Agave Energy Company
P.O. Box 158
Artesia, NM 88211
TEL: (575) 513-8988
FAX

RE: Dagger Draw Gas System Howell Ranch-4 Mile Draw Leak OrderNo.: 1411679

Dear Kerry Egan:

Hall Environmental Analysis Laboratory received 8 sample(s) on 11/18/2014 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1411679**
Date Reported: **12/5/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Project: Dagger Draw Gas System Howell Ranch-
Lab ID: 1411679-001 **Matrix:** SOIL

Client Sample ID: HR 4M #1
Collection Date: 11/14/2014 10:00:00 AM
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/18/2014 3:43:48 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 3:43:48 PM	16439
Surr: DNOP	88.4	63.5-128		%REC	1	11/18/2014 3:43:48 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/19/2014 1:22:51 PM	16433
Surr: BFB	92.8	80-120		%REC	1	11/19/2014 1:22:51 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	0.67	0.30		mg/Kg	1	11/25/2014 11:06:49 AM	16438
Chloride	ND	30		mg/Kg	20	11/18/2014 12:54:39 PM	16438
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/25/2014 11:06:49 AM	16438
Bromide	0.45	0.30		mg/Kg	1	11/25/2014 11:06:49 AM	16438
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	11/25/2014 11:06:49 AM	16438
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	11/25/2014 11:06:49 AM	16438
Sulfate	24	1.5		mg/Kg	1	11/25/2014 11:06:49 AM	16438
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Calcium	220000	1300		mg/Kg	50	12/2/2014 11:35:23 AM	16617
Magnesium	45000	260		mg/Kg	10	12/2/2014 11:33:03 AM	16617
Potassium	1200	51		mg/Kg	1	12/2/2014 10:17:01 AM	16617
Sodium	140	26		mg/Kg	1	12/2/2014 10:17:01 AM	16617

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Analytical Report
Lab Order **1411679**
Date Reported: **12/5/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #2
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 10:00:00 AM
Lab ID: 1411679-002 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/18/2014 4:14:02 PM	16439
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/18/2014 4:14:02 PM	16439
Surr: DNOP	95.5	63.5-128		%REC	1	11/18/2014 4:14:02 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/19/2014 1:51:36 PM	16433
Surr: BFB	92.0	80-120		%REC	1	11/19/2014 1:51:36 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	0.41	0.30		mg/Kg	1	11/25/2014 11:44:03 AM	16438
Chloride	ND	30		mg/Kg	20	11/18/2014 1:31:53 PM	16438
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/25/2014 11:44:03 AM	16438
Bromide	0.44	0.30		mg/Kg	1	11/25/2014 11:44:03 AM	16438
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	11/25/2014 11:44:03 AM	16438
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	11/25/2014 11:44:03 AM	16438
Sulfate	6.9	1.5		mg/Kg	1	11/25/2014 11:44:03 AM	16438
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Calcium	210000	1200		mg/Kg	50	12/2/2014 11:48:22 AM	16617
Magnesium	33000	240		mg/Kg	10	12/2/2014 11:45:47 AM	16617
Potassium	1300	49		mg/Kg	1	12/2/2014 10:21:39 AM	16617
Sodium	120	24		mg/Kg	1	12/2/2014 10:21:39 AM	16617

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1411679**
Date Reported: **12/5/2014**

CLIENT: Agave Energy Company
Project: Dagger Draw Gas System Howell Ranch-
Lab ID: 1411679-003 **Matrix:** SOIL

Client Sample ID: HR 4M #3
Collection Date: 11/14/2014 11:00:00 AM
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/18/2014 4:44:15 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 4:44:15 PM	16439
Surr: DNOP	97.0	63.5-128		%REC	1	11/18/2014 4:44:15 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/19/2014 2:20:17 PM	16433
Surr: BFB	94.7	80-120		%REC	1	11/19/2014 2:20:17 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	0.59	0.30		mg/Kg	1	11/25/2014 11:56:27 AM	16438
Chloride	ND	30		mg/Kg	20	11/18/2014 1:44:18 PM	16438
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/25/2014 11:56:27 AM	16438
Bromide	ND	0.30		mg/Kg	1	11/25/2014 11:56:27 AM	16438
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	11/25/2014 11:56:27 AM	16438
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	11/25/2014 11:56:27 AM	16438
Sulfate	1300	75		mg/Kg	50	11/26/2014 6:20:37 PM	16438
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Calcium	110000	1300		mg/Kg	50	12/2/2014 12:29:12 PM	16617
Magnesium	18000	130		mg/Kg	5	12/2/2014 11:50:25 AM	16617
Potassium	2100	51		mg/Kg	1	12/2/2014 10:25:35 AM	16617
Sodium	78	25		mg/Kg	1	12/2/2014 10:25:35 AM	16617

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1411679**
Date Reported: **12/5/2014**

CLIENT: Agave Energy Company
Project: Dagger Draw Gas System Howell Ranch-
Lab ID: 1411679-004 **Matrix:** SOIL

Client Sample ID: HR 4M #4
Collection Date: 11/14/2014 1:00:00 PM
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	23	10		mg/Kg	1	11/18/2014 5:14:15 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 5:14:15 PM	16439
Surr: DNOP	100	63.5-128		%REC	1	11/18/2014 5:14:15 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Surr: BFB	101	80-120		%REC	1	11/19/2014 2:49:01 PM	16433
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Toluene	ND	0.049		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Ethylbenzene	ND	0.049		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Xylenes, Total	ND	0.098		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	11/19/2014 2:49:01 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	1.1	0.30		mg/Kg	1	11/25/2014 12:08:51 PM	16438
Chloride	ND	30		mg/Kg	20	11/18/2014 1:56:42 PM	16438
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/25/2014 12:08:51 PM	16438
Bromide	ND	0.30		mg/Kg	1	11/25/2014 12:08:51 PM	16438
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	11/25/2014 12:08:51 PM	16438
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	11/25/2014 12:08:51 PM	16438
Sulfate	100	1.5		mg/Kg	1	11/25/2014 12:08:51 PM	16438
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Calcium	140000	1200		mg/Kg	50	12/2/2014 11:56:52 AM	16617
Magnesium	32000	240		mg/Kg	10	12/2/2014 11:54:39 AM	16617
Potassium	1600	48		mg/Kg	1	12/2/2014 10:29:26 AM	16617
Sodium	110	24		mg/Kg	1	12/2/2014 10:29:26 AM	16617

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #5
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 1:00:00 PM
Lab ID: 1411679-005 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/18/2014 5:44:13 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 5:44:13 PM	16439
Surr: DNOP	92.5	63.5-128		%REC	1	11/18/2014 5:44:13 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/19/2014 1:34:40 PM	16433
Surr: BFB	92.8	80-120		%REC	1	11/19/2014 1:34:40 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	0.73	0.30		mg/Kg	1	11/25/2014 12:21:16 PM	16438
Chloride	ND	30		mg/Kg	20	11/18/2014 2:09:07 PM	16438
Nitrogen, Nitrite (As N)	0.31	0.30		mg/Kg	1	11/25/2014 12:21:16 PM	16438
Bromide	ND	0.30		mg/Kg	1	11/25/2014 12:21:16 PM	16438
Nitrogen, Nitrate (As N)	3.0	0.30		mg/Kg	1	11/25/2014 12:21:16 PM	16438
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	11/25/2014 12:21:16 PM	16438
Sulfate	9.5	1.5		mg/Kg	1	11/25/2014 12:21:16 PM	16438
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Calcium	170000	1200		mg/Kg	50	12/2/2014 12:01:14 PM	16617
Magnesium	42000	250		mg/Kg	10	12/2/2014 11:59:05 AM	16617
Potassium	1500	50		mg/Kg	1	12/2/2014 10:45:18 AM	16617
Sodium	150	25		mg/Kg	1	12/2/2014 10:45:18 AM	16617

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #6
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 2:00:00 PM
Lab ID: 1411679-006 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/18/2014 6:14:16 PM	16439
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/18/2014 6:14:16 PM	16439
Surr: DNOP	115	63.5-128		%REC	1	11/18/2014 6:14:16 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/19/2014 2:02:22 PM	16433
Surr: BFB	93.6	80-120		%REC	1	11/19/2014 2:02:22 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	0.57	0.30		mg/Kg	1	11/25/2014 12:33:41 PM	16438
Chloride	ND	30		mg/Kg	20	11/18/2014 2:21:32 PM	16438
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/25/2014 12:33:41 PM	16438
Bromide	ND	0.30		mg/Kg	1	11/25/2014 12:33:41 PM	16438
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	11/25/2014 12:33:41 PM	16438
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	11/25/2014 12:33:41 PM	16438
Sulfate	2.8	1.5		mg/Kg	1	11/25/2014 12:33:41 PM	16438
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Calcium	75000	480		mg/Kg	20	12/2/2014 12:06:15 PM	16617
Magnesium	16000	120		mg/Kg	5	12/2/2014 12:04:09 PM	16617
Potassium	2600	96		mg/Kg	2	12/2/2014 11:02:05 AM	16617
Sodium	69	48		mg/Kg	2	12/2/2014 11:02:05 AM	16617

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #7
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 3:00:00 PM
Lab ID: 1411679-007 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	45	9.8		mg/Kg	1	11/18/2014 6:44:38 PM	16439
Motor Oil Range Organics (MRO)	120	49		mg/Kg	1	11/18/2014 6:44:38 PM	16439
Surr: DNOP	97.6	63.5-128		%REC	1	11/18/2014 6:44:38 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Surr: BFB	97.1	80-120		%REC	1	11/19/2014 2:30:05 PM	16433
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Toluene	ND	0.047		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Ethylbenzene	ND	0.047		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Xylenes, Total	ND	0.094		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Surr: 4-Bromofluorobenzene	112	80-120		%REC	1	11/19/2014 2:30:05 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	ND	6.0		mg/Kg	20	11/26/2014 6:33:02 PM	16438
Chloride	ND	30		mg/Kg	20	11/18/2014 2:33:58 PM	16438
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/25/2014 1:10:54 PM	16438
Bromide	0.81	0.30		mg/Kg	1	11/25/2014 1:10:54 PM	16438
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	11/25/2014 1:10:54 PM	16438
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	11/25/2014 1:10:54 PM	16438
Sulfate	38	1.5		mg/Kg	1	11/25/2014 1:10:54 PM	16438
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Calcium	140000	1300		mg/Kg	50	12/2/2014 12:18:09 PM	16617
Magnesium	35000	260		mg/Kg	10	12/2/2014 12:16:15 PM	16617
Potassium	1700	52		mg/Kg	1	12/2/2014 11:05:07 AM	16617
Sodium	130	26		mg/Kg	1	12/2/2014 11:05:07 AM	16617

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #8
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 4:00:00 PM
Lab ID: 1411679-008 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/18/2014 7:14:20 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 7:14:20 PM	16439
Surr: DNOP	114	63.5-128		%REC	1	11/18/2014 7:14:20 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/19/2014 2:57:12 PM	16433
Surr: BFB	95.6	80-120		%REC	1	11/19/2014 2:57:12 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	0.61	0.30		mg/Kg	1	11/25/2014 1:23:19 PM	16438
Chloride	ND	30		mg/Kg	20	11/18/2014 2:46:22 PM	16438
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/25/2014 1:23:19 PM	16438
Bromide	ND	0.30		mg/Kg	1	11/25/2014 1:23:19 PM	16438
Nitrogen, Nitrate (As N)	0.98	0.30		mg/Kg	1	11/25/2014 1:23:19 PM	16438
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	11/25/2014 1:23:19 PM	16438
Sulfate	23	1.5		mg/Kg	1	11/25/2014 1:23:19 PM	16438
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Calcium	180000	1200		mg/Kg	50	12/2/2014 12:22:41 PM	16617
Magnesium	42000	250		mg/Kg	10	12/2/2014 12:20:13 PM	16617
Potassium	1700	50		mg/Kg	1	12/2/2014 11:16:46 AM	16617
Sodium	140	25		mg/Kg	1	12/2/2014 11:16:46 AM	16617

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

05-Dec-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **MB-16438** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **16438** RunNo: **22639**

Prep Date: **11/18/2014** Analysis Date: **11/18/2014** SeqNo: **667700** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Phosphorus, Orthophosphate (As P	ND	1.5								
Sulfate	ND	1.5								

Sample ID **LCS-16438** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **16438** RunNo: **22639**

Prep Date: **11/18/2014** Analysis Date: **11/18/2014** SeqNo: **667701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	96.8	90	110			
Chloride	14	1.5	15.00	0	95.8	90	110			
Nitrogen, Nitrite (As N)	3.0	0.30	3.000	0	98.5	90	110			
Bromide	7.3	0.30	7.500	0	97.9	90	110			
Nitrogen, Nitrate (As N)	7.4	0.30	7.500	0	98.4	90	110			
Phosphorus, Orthophosphate (As P	14	1.5	15.00	0	95.8	90	110			
Sulfate	32	1.5	30.00	0	107	90	110			

Sample ID **1411679-001AMS** SampType: **MS** TestCode: **EPA Method 300.0: Anions**

Client ID: **HR 4M #1** Batch ID: **16438** RunNo: **22809**

Prep Date: **11/18/2014** Analysis Date: **11/25/2014** SeqNo: **673169** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.9	0.30	1.500	0.6672	80.6	13.6	100			
Chloride	14	1.5	15.00	0	96.3	71.6	122			
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	95.1	83.2	106			
Bromide	7.4	0.30	7.500	0.4527	93.2	87	105			
Nitrogen, Nitrate (As N)	7.2	0.30	7.500	0	95.8	85.3	110			
Sulfate	52	1.5	30.00	24.26	92.0	57.7	142			

Sample ID **1411679-001AMSD** SampType: **MSD** TestCode: **EPA Method 300.0: Anions**

Client ID: **HR 4M #1** Batch ID: **16438** RunNo: **22809**

Prep Date: **11/18/2014** Analysis Date: **11/25/2014** SeqNo: **673170** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.9	0.30	1.500	0.6672	82.8	13.6	100	1.70	20	
Chloride	15	1.5	15.00	0	98.2	71.6	122	1.97	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

05-Dec-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **1411679-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 300.0: Anions**
Client ID: **HR 4M #1**	Batch ID: **16438**	RunNo: **22809**
Prep Date: **11/18/2014**	Analysis Date: **11/25/2014**	SeqNo: **673170** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	96.4	83.2	106	1.42	20	
Bromide	7.6	0.30	7.500	0.4527	95.2	87	105	2.00	20	
Nitrogen, Nitrate (As N)	7.3	0.30	7.500	0	96.9	85.3	110	1.16	20	
Sulfate	56	1.5	30.00	24.26	106	57.7	142	8.04	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

05-Dec-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **MB-16439**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **16439**	RunNo: **22594**
Prep Date: **11/18/2014**	Analysis Date: **11/18/2014**	SeqNo: **667292** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.5		10.00		75.0	63.5	128			

Sample ID **LCS-16439**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **16439**	RunNo: **22594**
Prep Date: **11/18/2014**	Analysis Date: **11/18/2014**	SeqNo: **667293** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.6	68.6	130			
Surr: DNOP	4.3		5.000		85.9	63.5	128			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

05-Dec-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **MB-16433**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **16433**	RunNo: **22632**
Prep Date: **11/18/2014**	Analysis Date: **11/19/2014**	SeqNo: **667913** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		91.4	80	120			

Sample ID **LCS-16433**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **16433**	RunNo: **22632**
Prep Date: **11/18/2014**	Analysis Date: **11/19/2014**	SeqNo: **667914** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.1	65.8	139			
Surr: BFB	990		1000		98.7	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

05-Dec-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **MB-16433**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **16433**	RunNo: **22632**
Prep Date: **11/18/2014**	Analysis Date: **11/19/2014**	SeqNo: **667969** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID **LCS-16433**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **16433**	RunNo: **22632**
Prep Date: **11/18/2014**	Analysis Date: **11/19/2014**	SeqNo: **667970** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	96.3	80	120			
Toluene	0.94	0.050	1.000	0	94.3	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

05-Dec-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **MB-16617**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **16617**	RunNo: **22877**
Prep Date: **12/1/2014**	Analysis Date: **12/2/2014**	SeqNo: **675466** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	25								
Magnesium	ND	25								
Potassium	ND	50								
Sodium	ND	25								

Sample ID **LCS-16617**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **16617**	RunNo: **22877**
Prep Date: **12/1/2014**	Analysis Date: **12/2/2014**	SeqNo: **675467** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2600	25	2500	0	106	80	120			
Magnesium	2600	25	2500	0	103	80	120			
Potassium	2500	50	2500	0	99.2	80	120			
Sodium	2500	25	2500	0	100	80	120			

Sample ID **1411679-005AMS**	SampType: **MS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **HR 4M #5**	Batch ID: **16617**	RunNo: **22877**
Prep Date: **12/1/2014**	Analysis Date: **12/2/2014**	SeqNo: **675480** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	3900	51	2546	1451	97.8	75	125			
Sodium	2200	25	2546	146.0	82.6	75	125			

Sample ID **1411679-005AMSD**	SampType: **MSD**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **HR 4M #5**	Batch ID: **16617**	RunNo: **22877**
Prep Date: **12/1/2014**	Analysis Date: **12/2/2014**	SeqNo: **675481** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	3900	49	2436	1451	101	75	125	0.779	20	
Sodium	2200	24	2436	146.0	85.6	75	125	0.737	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: AGAVE ENERGY COMP Work Order Number: 1411679 RcptNo: 1

Received by/date: 11/18/14

Logged By: **Ashley Gallegos** 11/18/2014 10:20:00 AM

Completed By: **Ashley Gallegos** 11/18/2014 10:32:14 AM

Reviewed By:

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
	Not required		
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	9.2	Good	Yes			

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Agave Energy Company	☐ Standard ☑ Rush
	Project Name: Dagger Draw Gas System: Howell Ranch-4 Mile Draw Leak
Mailing Address: PO BOX 158	Project #:
Artesia, NM 88211	
Phone #: (575) 513-8988	
email or Fax#: KEgan@yatespetroleum.com	Project Manager:
QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)	
Accreditation: ☐ NELAP ☐ Other	Sampler: Kerry Egan
☐ EDD (Type)	On Ice: ☑ Yes ☐ No
	Sample Temperature: 9.2

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1411479	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
11/14/14	10AM	Soil	HR 4M #1	Jar (1)	Temp (cool)	-001			x					x								
11/14/14	10AM	Soil	HR 4M #2	Jar (1)	Temp (cool)	-002			x					x								
11/14/14	11AM	Soil	HR 4M #3	Jar (1)	Temp (cool)	-003			x					x								
11/14/14	1PM	Soil	HR 4M #4	Jar (1)	Temp (cool)	-004			x					x								
11/14/14	1PM	Soil	HR 4M #5	Jar (1)	Temp (cool)	-005			x					x								
11/14/14	2PM	Soil	HR 4M #6	Jar (1)	Temp (cool)	-006			x					x								
11/14/14	3PM	Soil	HR 4M #7	Jar (1)	Temp (cool)	-007			x					x								
11/14/14	4PM	Soil	HR 4M #8	Jar (1)	Temp (cool)	-008			x					x								

Date	Time	Relinquished by:	Received by:	Date	Time
11/17/14				11/18/14	1020
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: 1) For Anions analyses, I only need Cl- concentration.

Rush analyses Per Kerry Egan, added BTEX to -004 and -007 on 11/19/14 KMS

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

November 20, 2014

Kerry Egan
Agave Energy Company
P.O. Box 158
Artesia, NM 88211
TEL: (575) 513-8988
FAX

RE: Dagger Draw Gas System Howell Ranch-4 Mile Draw Leak OrderNo.: 1411679

Dear Kerry Egan:

Hall Environmental Analysis Laboratory received 8 sample(s) on 11/18/2014 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1411679**
Date Reported: **11/20/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #1
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 10:00:00 AM
Lab ID: 1411679-001 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/18/2014 3:43:48 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 3:43:48 PM	16439
Surr: DNOP	88.4	63.5-128		%REC	1	11/18/2014 3:43:48 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/19/2014 1:22:51 PM	16433
Surr: BFB	92.8	80-120		%REC	1	11/19/2014 1:22:51 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	11/18/2014 12:54:39 PM	16438

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #2
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 10:00:00 AM
Lab ID: 1411679-002 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/18/2014 4:14:02 PM	16439
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/18/2014 4:14:02 PM	16439
Surr: DNOP	95.5	63.5-128		%REC	1	11/18/2014 4:14:02 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/19/2014 1:51:36 PM	16433
Surr: BFB	92.0	80-120		%REC	1	11/19/2014 1:51:36 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	11/18/2014 1:31:53 PM	16438

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Analytical Report
Lab Order **1411679**
Date Reported: **11/20/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #3
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 11:00:00 AM
Lab ID: 1411679-003
Matrix: SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/18/2014 4:44:15 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 4:44:15 PM	16439
Surr: DNOP	97.0	63.5-128		%REC	1	11/18/2014 4:44:15 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/19/2014 2:20:17 PM	16433
Surr: BFB	94.7	80-120		%REC	1	11/19/2014 2:20:17 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	11/18/2014 1:44:18 PM	16438

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #4
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 1:00:00 PM
Lab ID: 1411679-004 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	23	10		mg/Kg	1	11/18/2014 5:14:15 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 5:14:15 PM	16439
Surr: DNOP	100	63.5-128		%REC	1	11/18/2014 5:14:15 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Surr: BFB	101	80-120		%REC	1	11/19/2014 2:49:01 PM	16433
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Toluene	ND	0.049		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Ethylbenzene	ND	0.049		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Xylenes, Total	ND	0.098		mg/Kg	1	11/19/2014 2:49:01 PM	16433
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	11/19/2014 2:49:01 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	11/18/2014 1:56:42 PM	16438

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #5
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 1:00:00 PM
Lab ID: 1411679-005 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/18/2014 5:44:13 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 5:44:13 PM	16439
Surr: DNOP	92.5	63.5-128		%REC	1	11/18/2014 5:44:13 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/19/2014 1:34:40 PM	16433
Surr: BFB	92.8	80-120		%REC	1	11/19/2014 1:34:40 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	11/18/2014 2:09:07 PM	16438

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #6
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 2:00:00 PM
Lab ID: 1411679-006 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/18/2014 6:14:16 PM	16439
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/18/2014 6:14:16 PM	16439
Surr: DNOP	115	63.5-128		%REC	1	11/18/2014 6:14:16 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/19/2014 2:02:22 PM	16433
Surr: BFB	93.6	80-120		%REC	1	11/19/2014 2:02:22 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	11/18/2014 2:21:32 PM	16438

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #7
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 3:00:00 PM
Lab ID: 1411679-007 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	45	9.8		mg/Kg	1	11/18/2014 6:44:38 PM	16439
Motor Oil Range Organics (MRO)	120	49		mg/Kg	1	11/18/2014 6:44:38 PM	16439
Surr: DNOP	97.6	63.5-128		%REC	1	11/18/2014 6:44:38 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Surr: BFB	97.1	80-120		%REC	1	11/19/2014 2:30:05 PM	16433
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Toluene	ND	0.047		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Ethylbenzene	ND	0.047		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Xylenes, Total	ND	0.094		mg/Kg	1	11/19/2014 2:30:05 PM	16433
Surr: 4-Bromofluorobenzene	112	80-120		%REC	1	11/19/2014 2:30:05 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	11/18/2014 2:33:58 PM	16438

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Agave Energy Company
Client Sample ID: HR 4M #8
Project: Dagger Draw Gas System Howell Ranch-
Collection Date: 11/14/2014 4:00:00 PM
Lab ID: 1411679-008 **Matrix:** SOIL
Received Date: 11/18/2014 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/18/2014 7:14:20 PM	16439
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/18/2014 7:14:20 PM	16439
Surr: DNOP	114	63.5-128		%REC	1	11/18/2014 7:14:20 PM	16439
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/19/2014 2:57:12 PM	16433
Surr: BFB	95.6	80-120		%REC	1	11/19/2014 2:57:12 PM	16433
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	11/18/2014 2:46:22 PM	16438

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

20-Nov-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **MB-16438**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **16438**	RunNo: **22639**
Prep Date: **11/18/2014**	Analysis Date: **11/18/2014**	SeqNo: **667700** Units: **mg/Kg**

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

Sample ID **LCS-16438**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **16438**	RunNo: **22639**
Prep Date: **11/18/2014**	Analysis Date: **11/18/2014**	SeqNo: **667701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.8	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

20-Nov-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **MB-16439**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **16439**	RunNo: **22594**
Prep Date: **11/18/2014**	Analysis Date: **11/18/2014**	SeqNo: **667292** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.5		10.00		75.0	63.5	128			

Sample ID **LCS-16439**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **16439**	RunNo: **22594**
Prep Date: **11/18/2014**	Analysis Date: **11/18/2014**	SeqNo: **667293** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.6	68.6	130			
Surr: DNOP	4.3		5.000		85.9	63.5	128			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

20-Nov-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **MB-16433**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **16433**	RunNo: **22632**
Prep Date: **11/18/2014**	Analysis Date: **11/19/2014**	SeqNo: **667913** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		91.4	80	120			

Sample ID **LCS-16433**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **16433**	RunNo: **22632**
Prep Date: **11/18/2014**	Analysis Date: **11/19/2014**	SeqNo: **667914** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.1	65.8	139			
Surr: BFB	990		1000		98.7	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411679**

20-Nov-14

Client: Agave Energy Company

Project: Dagger Draw Gas System Howell Ranch-4 Mile

Sample ID **MB-16433**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **16433**	RunNo: **22632**
Prep Date: **11/18/2014**	Analysis Date: **11/19/2014**	SeqNo: **667969** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID **LCS-16433**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **16433**	RunNo: **22632**
Prep Date: **11/18/2014**	Analysis Date: **11/19/2014**	SeqNo: **667970** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	96.3	80	120			
Toluene	0.94	0.050	1.000	0	94.3	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: AGAVE ENERGY COMP Work Order Number: 1411679 RcptNo: 1

Received by/date: KM 11/18/14

Logged By: **Ashley Gallegos** 11/18/2014 10:20:00 AM

Completed By: **Ashley Gallegos** 11/18/2014 10:32:14 AM

Reviewed By:

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
	Not required		
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	9.2	Good	Yes			

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Agave Energy Company	☐ Standard ☑ Rush
	Project Name: Dagger Draw Gas System: Howell Ranch-4 Mile Draw Leak
Mailing Address: PO BOX 158	Project #:
Artesia, NM 88211	
Phone #: (575) 513-8988	
email or Fax#: KEgan@yatespetroleum.com	Project Manager:
QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)	
Accreditation: ☐ NELAP ☐ Other	Sampler: Kerry Egan
☐ EDD (Type)	On Ice: ☑ Yes ☐ No
	Sample Temperature: 4

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1411619	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
11/14/14	10AM	Soil	HR 4M #1	Jar (1)	Temp (cool)	-001			x					x								
11/14/14	10AM	Soil	HR 4M #2	Jar (1)	Temp (cool)	-002			x					x								
11/14/14	11AM	Soil	HR 4M #3	Jar (1)	Temp (cool)	-003			x					x								
11/14/14	1PM	Soil	HR 4M #4	Jar (1)	Temp (cool)	-004			x					x								
11/14/14	1PM	Soil	HR 4M #5	Jar (1)	Temp (cool)	-005			x					x								
11/14/14	2PM	Soil	HR 4M #6	Jar (1)	Temp (cool)	-006			x					x								
11/14/14	3PM	Soil	HR 4M #7	Jar (1)	Temp (cool)	-007			x					x								
11/14/14	4PM	Soil	HR 4M #8	Jar (1)	Temp (cool)	-008			x					x								

Date	Time	Relinquished by:	Received by:	Date	Time
11/17/14				11/18/14	1020
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: 1) For Anions analyses, I only need Cl- concentration.

Rush analyses Per Kerry Egan, added BTEX to -004 and -007 on 11/19/14 KMS

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

INVOICE

Invoice#: **1411679**
Date: **11/20/2014**

INVOICE TO: ATTN: **ACCOUNTS PAYABLE**
Agave Energy Company
Kerry Egan
P.O. Box 158
Artesia, NM 88211

Acct. Code:

Work Order: **1411679**
Date Received: 11/18/2014
Priority: Rush
Phone: (575) 513-8988
Fax:
Project: Dagger Draw Gas System Howell Ra
PO:
CaseNo:
Submitted By: Agave Energy Company
Kerry Egan

Item Description	Matrix	Remarks	Qty	Unit Price	Total
EPA Method 300.0: Anions	Soil		8	50.00	400.00
EPA Method 8015D: Diesel Range Organi	Soil		8	100.00	800.00
EPA Method 8015D: Gasoline Range	Soil		8	100.00	800.00
EPA Method 8021B: Volatiles	Soil		2	110.00	220.00

Sub Total:	$2,220.00
Misc. Charges:	$0.00
Surcharge:	0.00%
Tax:	7.00%
INVOICE Total:	**$2,375.40**
Pre-Paid Amount:	$0.00
Total Payable Amount:	**$2,375.40**

TERMS:

CARDINAL Laboratories

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

October 17, 2014

KERRY EGAN

AGAVE ENERGY COMPANY

P. O. BOX 158

ARTESIA, NM 88211

RE: DAGGER DRAW 4 MILE

Enclosed are the results of analyses for samples received by the laboratory on 10/16/14 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is 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. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

AGAVE ENERGY COMPANY
KERRY EGAN
P. O. BOX 158
ARTESIA NM, 88211
Fax To: (575) 748-4275

Received:	10/16/2014	Sampling Date:	10/10/2014
Reported:	10/17/2014	Sampling Type:	Soil
Project Name:	DAGGER DRAW 4 MILE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	NOT GIVEN		

Sample ID: HR #1 (H403180-01)

BTEX 8021B mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.060**	0.050	10/17/2014	ND	1.80	90.2	2.00	3.12	
Toluene*	**0.275**	0.050	10/17/2014	ND	1.68	83.9	2.00	3.24	
Ethylbenzene*	<0.050	0.050	10/17/2014	ND	1.58	79.1	2.00	3.79	
Total Xylenes*	**0.167**	0.150	10/17/2014	ND	4.68	78.0	6.00	3.92	
Total BTEX	**0.504**	0.300	10/17/2014	ND					

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

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/17/2014	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	10/16/2014	ND	175	87.5	200	1.53	
DRO >C10-C28	**22.0**	10.0	10/16/2014	ND	176	87.8	200	5.17	

Surrogate: 1-Chlorooctane *94.7 %* *47.2-157*

Surrogate: 1-Chlorooctadecane *108 %* *52.1-176*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

AGAVE ENERGY COMPANY
KERRY EGAN
P. O. BOX 158
ARTESIA NM, 88211
Fax To: (575) 748-4275

Received:	10/16/2014	Sampling Date:	10/10/2014
Reported:	10/17/2014	Sampling Type:	Soil
Project Name:	DAGGER DRAW 4 MILE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	NOT GIVEN		

Sample ID: HR #2 (CHC) (H403180-02)

BTEX 8021B mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2014	ND	1.80	90.2	2.00	3.12	
Toluene*	<0.050	0.050	10/17/2014	ND	1.68	83.9	2.00	3.24	
Ethylbenzene*	<0.050	0.050	10/17/2014	ND	1.58	79.1	2.00	3.79	
Total Xylenes*	<0.150	0.150	10/17/2014	ND	4.68	78.0	6.00	3.92	
Total BTEX	<0.300	0.300	10/17/2014	ND					

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

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/17/2014	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	10/16/2014	ND	175	87.5	200	1.53	
DRO >C10-C28	<10.0	10.0	10/16/2014	ND	176	87.8	200	5.17	

Surrogate: 1-Chlorooctane *96.5 %* *47.2-157*

Surrogate: 1-Chlorooctadecane *104 %* *52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Agave Energy Company
Project Manager: Kerry Egan
Address: 105 South 4th Street
City: Artesia State: NM Zip:
Phone #: 575-513-8988 Fax #:
Project #: Project Owner:
Project Name: Dagger Draw 4 Mile
Project Location: Dagger Draw 4 Mile
Sampler Name: Kerry Egan

BILL TO

P.O. #: 606-2336
Company: Agave Energy
Attn: Kerry Egan
Address: 105 South 4th
City: Artesia
State: NM Zip: 88210
Phone #: 575 748-4555
Fax #: 575 748-4275

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING DATE	TIME	Cl-	TPH	BTEX
H4031780																	
1	HR #1	G	1			X							10/10/14	10:00AM	X	X	X
2	HR [illegible] #2	G	1			X							10/10/14	10:00AM	X	X	X
		G	1			X							10/10/14	10:00AM			
		G	1			X							10/10/14	10:00AM			
		G	1			X							10/10/14	10:00AM			
		G	1			X							10/10/14	10:00AM			
		G	1			X							10/10/14	10:00AM			
		G	1			X							10/10/14	10:00AM			
		G	1			X							10/10/14	10:00AM			
		G	1			x							10/10/14	10:00AM			

Relinquished By: Date: 10-16-14 Time: 11:30 Received By: Cathy Perry

Relinquished By: Date: Time: Received By:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 5.8°C

Sample Condition: Cool ☐Yes ☐No Intact ☑Yes ☐No

CHECKED BY: (Initials) KP

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS: Rush

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