R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Since 1996
Artesia ▲ Carlsbad ▲ Durango ▲ Midland

April 30, 2018

PRELIMINARY RESULTS

Olivia Yu
NMOCD District 1
1625 N. French Dr.
Hobbs, NM 88240

Via Email

RE: Advance Energy –Merchant State 503H Release(s) 1RP-4953
Characterization Report and Excavation and Removal Remediation Plan

Dear Ms. Yu:

Hicks Consultants has elected to use the proposed language in NMOCD's application to repeal and replace Rule 19.15.29 NMAC (the Rule) as guidance for delineation and remediation of the above referenced release. The proposed Rule does not cause conflict with the existing Rule. Rather the proposed Rule provides clarity, recognition of decades of data and certitude whereas the existing Rule relied upon 1993 guidance and relied upon the varied expertise and sometimes conflicting decisions of Districts. We are fully confident that OCD would not be the sponsor of the proposed Rule if the changes did not support the legal mandate of protecting fresh water, public health and the environment.

The proposed Rule also recognizes the fact that the existing Rule and decades of previous practice did not require submission and approval of a characterization work plan. The proposed Rule does incorporate appropriate elements of the directive of Mr. Griswold (attached to the signed C-141 from OCD).

This is a stand-alone document and thus includes information previously submitted as well as the delineation data and the proposed corrective action. Attachment A provides the Characterization Report and Remediation Plan for the *Battle 34 Site*. Attachments B and C are the Characterization Reports and Remediation Plans for the *West of MP Site* and the *Latitude 36 22 50 Site*.

Depth to Groundwater

Review of nearby water wells available from the New Mexico Office of the State Engineer (OSE) online database (See Table 1 and Figure 1) shows that the depth to the water-bearing zone exceeds 700 feet below land surface, as evidenced by the "top of water bearing strata" column.

Table 1: OSE Water Well Log Data Summary

POD Number	Date	Top of Water Bearing Strata	Bottom of Water Bearing Strata	Depth to Water	Source	Height Above Confining Layer
		Feet	Feet	Feet		Feet
CP 01349 POD 1	7/18/2014	960	1188	572	Artesian	388
CP 01356 POD 1	8/9/2014	765	1092	555	Artesian	210
CP 01355 POD 1	7/29/2014	925	1185	582	Artesian	343
CP 01357 POD 1	8/26/2014	945	1286	578	Artesian	367
CP 00854	6/22/1996	755	890	600	Artesian	155
CP 1411 POD 1	10/14/2014	800	1145	NA	Artesian	

OSE well logs show that the nearby wells have a minimum of 155 feet of pressure head above the confining layer (height above confining layer). It is important to recognize that in CP 854 ground water is at a depth of 755 feet and confining pressure causes the water column to rise 155 feet for a perceived depth to water of 600 feet bgs.

We recognize that thin water-bearing units above the regional water-bearing zone may not have been recorded by the well drillers. However, more shallow water-bearing zones would be sandstone units within the Dockum Group redbeds and, like the regional water-bearing zone, would be under artesian pressure.

Ground water flow is to the southwest as demonstrated on the potentiometric map (Figure 2). We relied on the USGS water wells to generate the potentiometric surface. Regionally, USGS water wells show that ground water is within the Santa Rosa and Chinle Formation. The potentiometric surface indicates that the depth to water, which is under artesian flow, is approximately 200 feet bgs at the West of MC Jnct site and 191 feet at the 32 25 50/-103 33 50 site.

Background Environmental Data

Figures 1-9, from our March 12, 2018[1] report, demonstrate that the release sites are not within:

1) 300 feet of any continuously flowing watercourse or any other significant watercourse or 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark);
2) 300 feet from an occupied permanent residence, school, hospital, institution or church;
3) 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes. However, as Figure 1 shows, two sites are within 1,000 feet of fresh water well (CP 1355). Because the water well is hydraulically up-gradient from the release sites and, more importantly,
    a) The top of the groundwater zone for this water well is at a depth of 925 feet (see well log in Appendix A)

[1] *Advanced Energy – Merchant Containment/Merchant Site State 503H Release(s) Delineation Plan and Potential Corrective Actions – 1RP-4953)*

b) The well has cement grout circulated to the surface from ground level to a depth of 757 feet
c) The screened interval is 874-1,192 feet below grade and
d) The static water level after drilling is reported as 582 feet, or 343 feet above the groundwater zone and 175 feet above the base of the annular seal.
e) The location of this well within the 1,000-foot radius of the spill is of no environmental consequence.

4) within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended,
5) within 100 feet of a wetland;
6) within the area overlying a subsurface mine;
7) within an unstable area; or
8) within a 100-year floodplain.

Submission of Figures 1-9 satisfies the requirements of the proposed Rule 19.15.29.12.B.4 and 19.15.29.11.A (subsections 2-4). Attachments A, B and C satisfy the other requirements of proposed Rule 19.15.29.11-13. Thus, these Figures and Attachments exceed the requests of the OCD "Directive" attached to the C-141s.

Summary of Proposed Corrective Actions

Please refer to Appendix A, B, and C for details.

A. Battle 32: Dig-haul-dispose of release area to a deep of 4-feet. Adjust excavation extent based upon chloride field testing.
B. West of Merchant Pit: Dig-haul-dispose of the area around sampling trench T4. The area requiring remediation is due east of the lease road and comprises about 40 square yards (about 50 cubic yards). The dimensions of this area is about 6-feet (east/west) and 50 feet (north/south). Adjust excavation extent based upon chloride field testing.
C. Latitude 32 26 50: Dig-haul-dispose an area of 75 square yards near the release point. Excavation will be limited to the sand or the upper 4-feet. Adjust excavation extent based upon chloride field testing.

All excavated material will be disposed at an OCD permitted disposal facility and replacement of the excavated volume with four feet of non-waste material containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0. Backfilling of excavated material will occur upon laboratory confirmation that excavation sidewall soils are less that $\leq$ 600 mg/kg chloride.

Sincerely,
R.T. Hicks Consultants, Ltd.

Randall Hicks
Principal

Copy: Merchant Livestock
Clabe Pearson (clabe@merchantlivestock.com)
Brad Blevins (bblevins5252@gmail.com)

FIGURES

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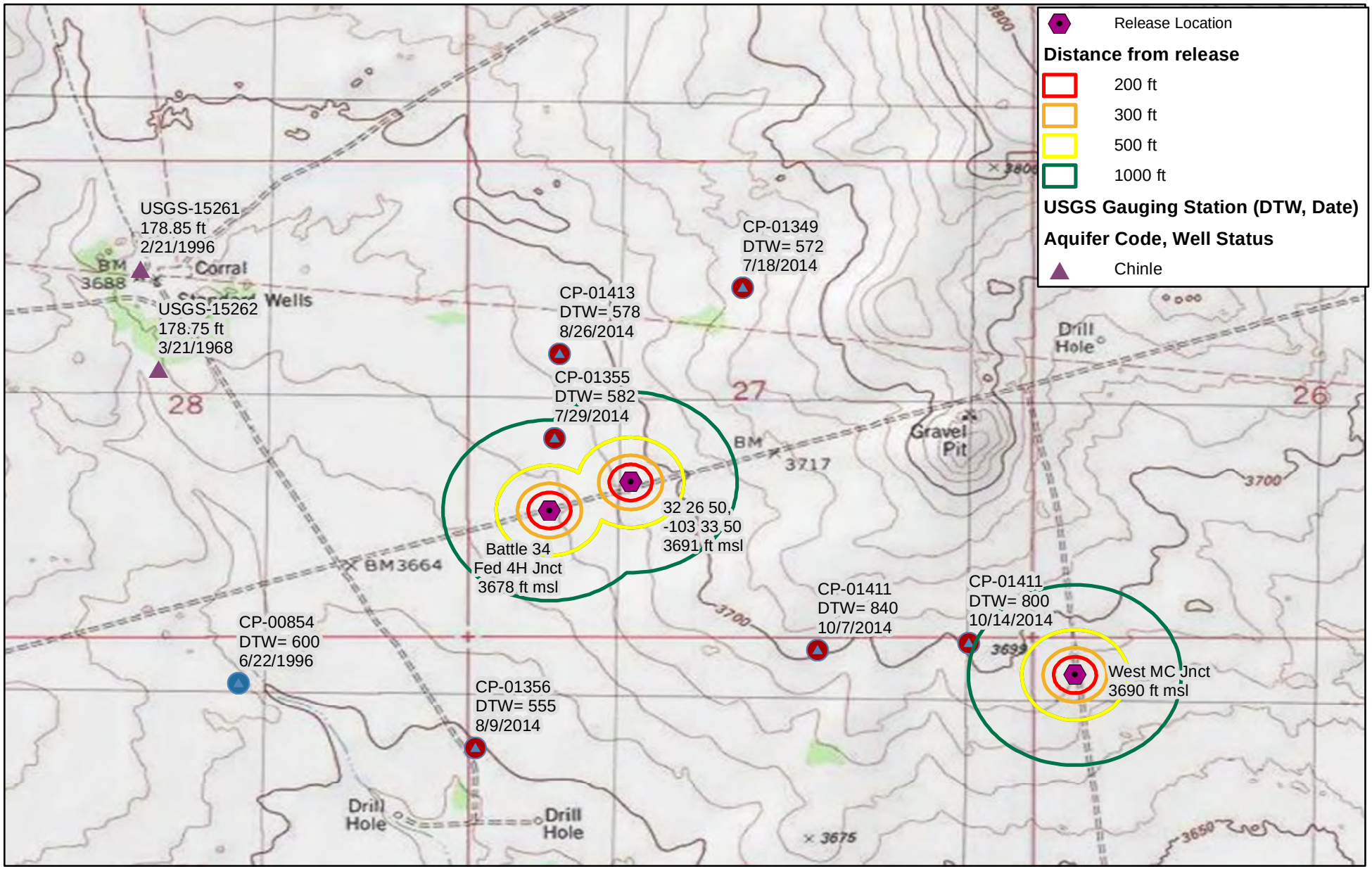

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Depth To Water and Geology	Figure 1
	Advanced Energy Partners Hat Mesa, LLC Merchant Containment/Merchant State 503H Release(s)	February 2018

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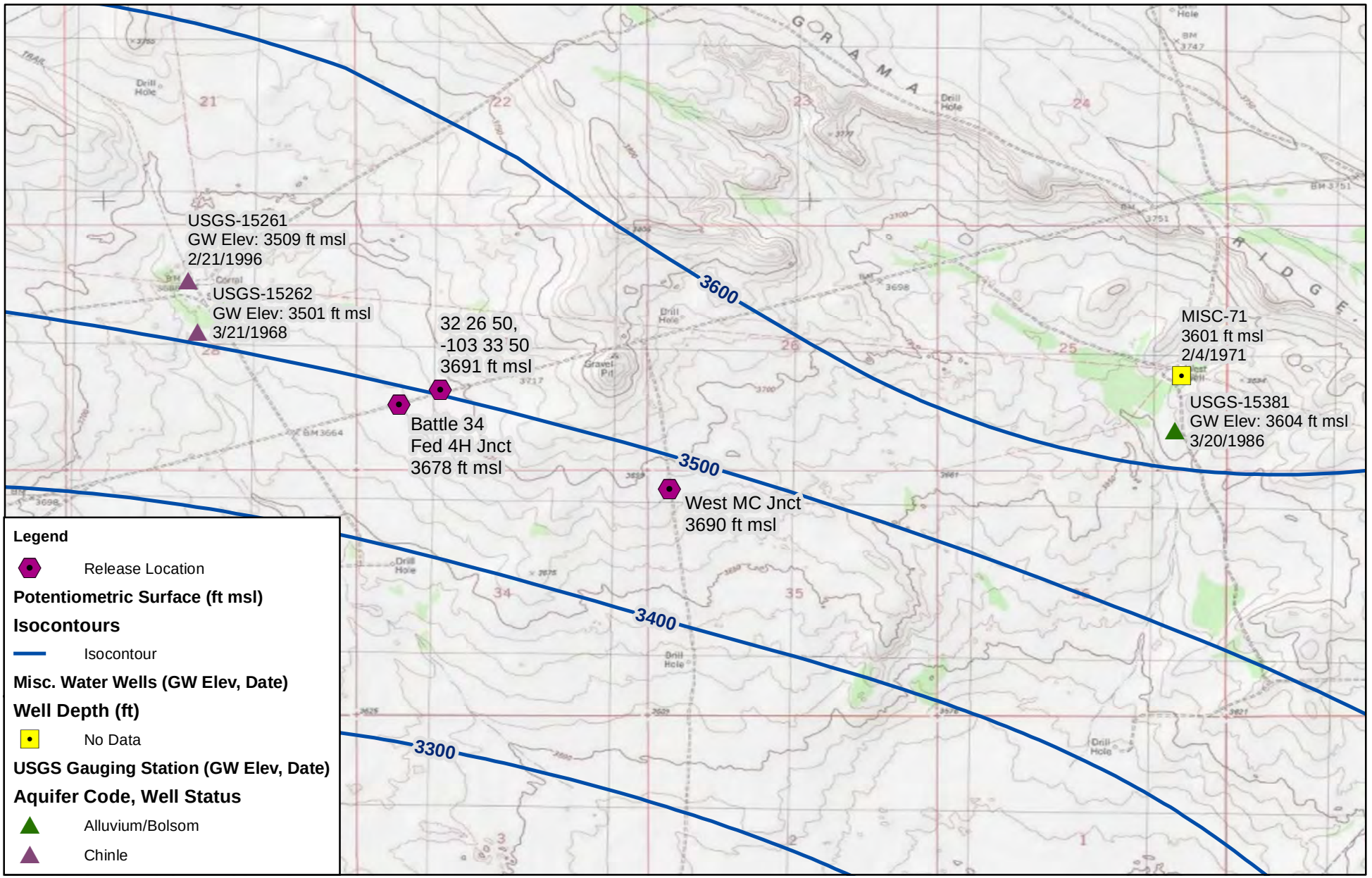

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Potentiometric Surface and Groundwater Elevation

Plate 2

Advanced Energy Partners Hat Mesa, LLC
Merchant Containment/Merchant State 503H Release(s)

February 2018

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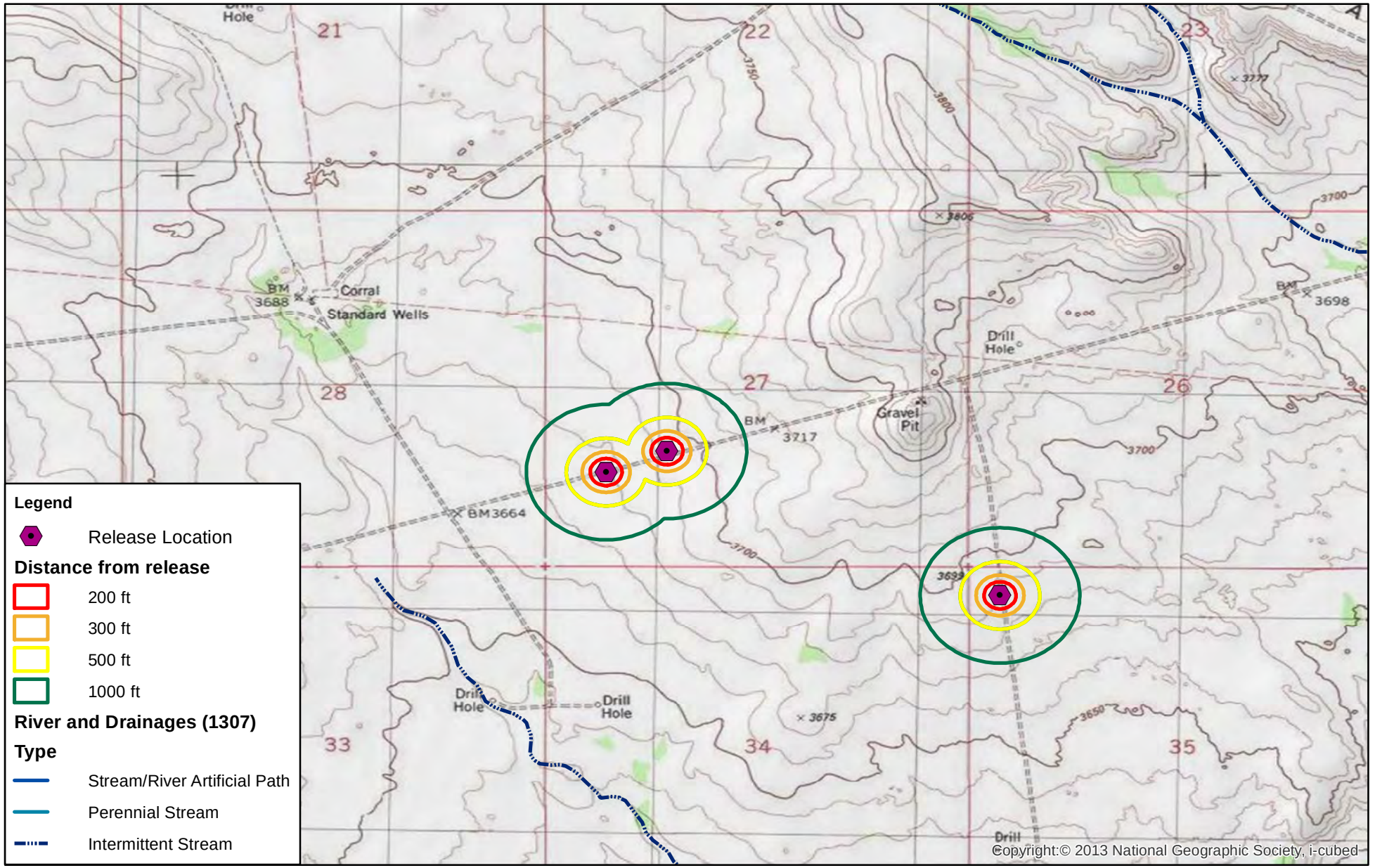

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Surface Water and Topography

Plate 3

Advanced Energy Partners Hat Mesa, LLC
Merchant Containment/Merchant State 503H Release(s)

February 2018

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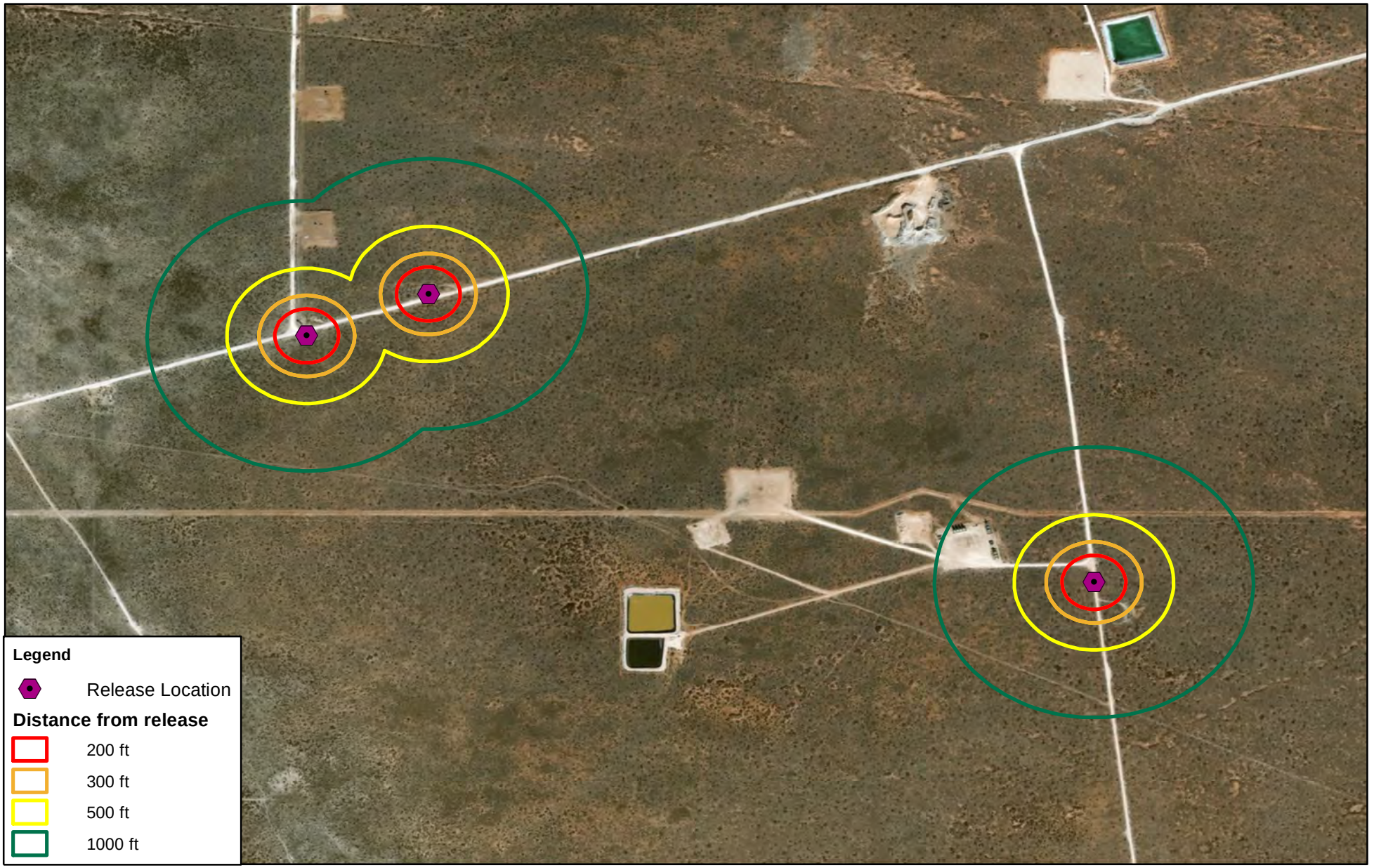

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures	Plate 4
	Advanced Energy Partners Hat Mesa, LLC Merchant Containment/Merchant State 503H Release(s)	February 2018

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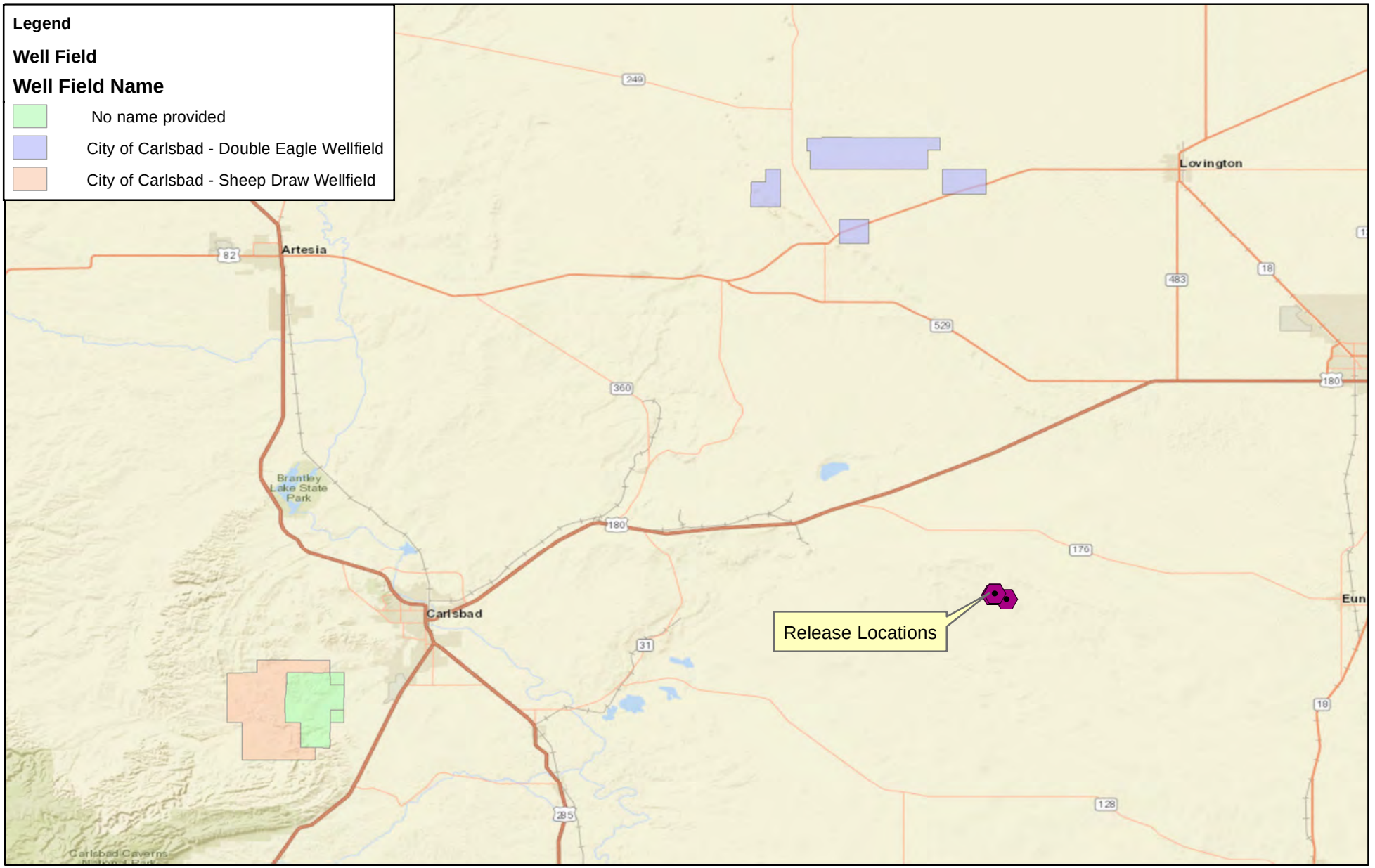

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Nearby Municipalities and Well Fields

Plate 5

Advanced Energy Partners Hat Mesa, LLC
Merchant Containment/Merchant State 503H Release(s)

February 2018

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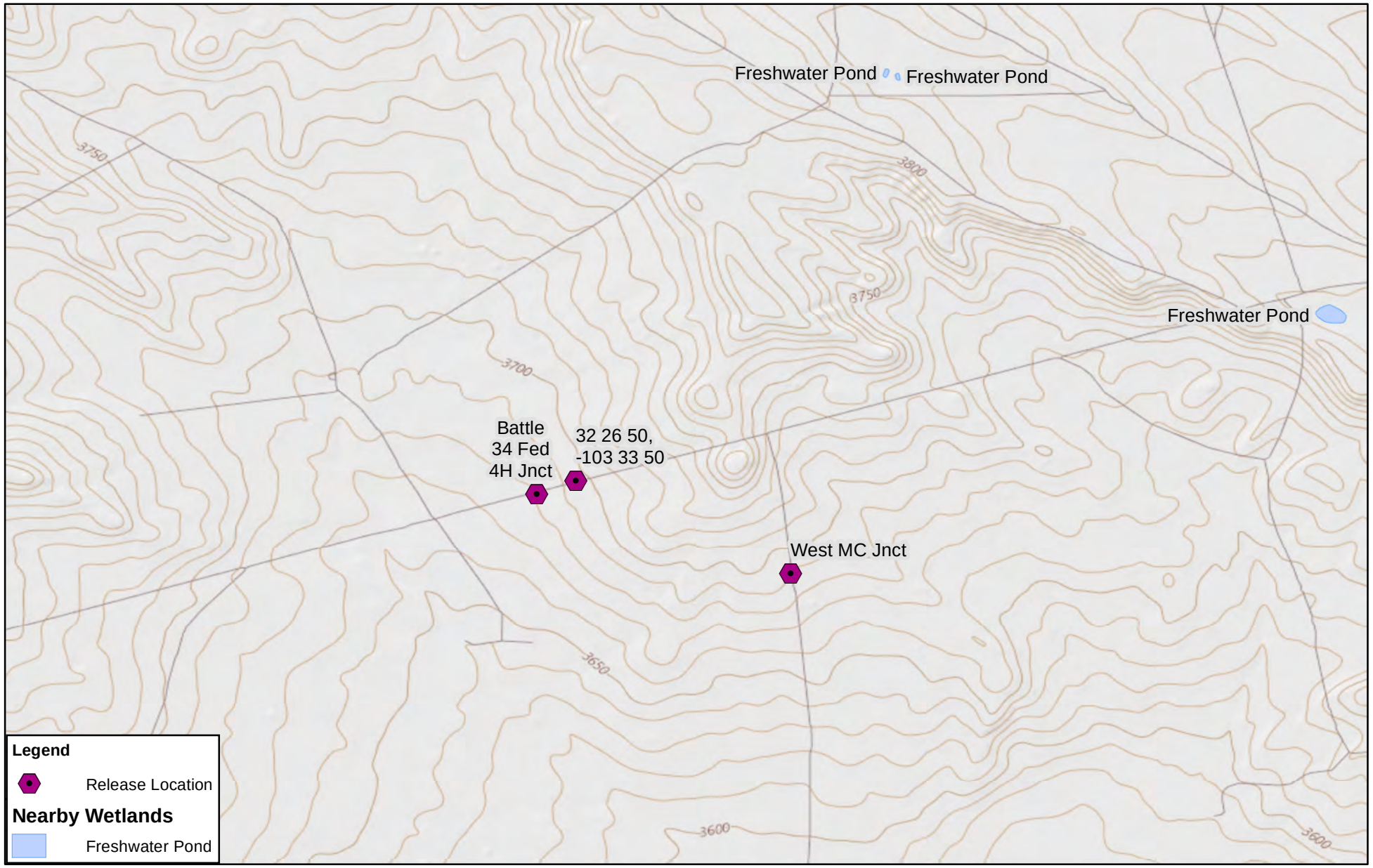

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	Advanced Energy Partners Hat Mesa, LLC Merchant Containment/Merchant State 503H Release(s)	February 2018

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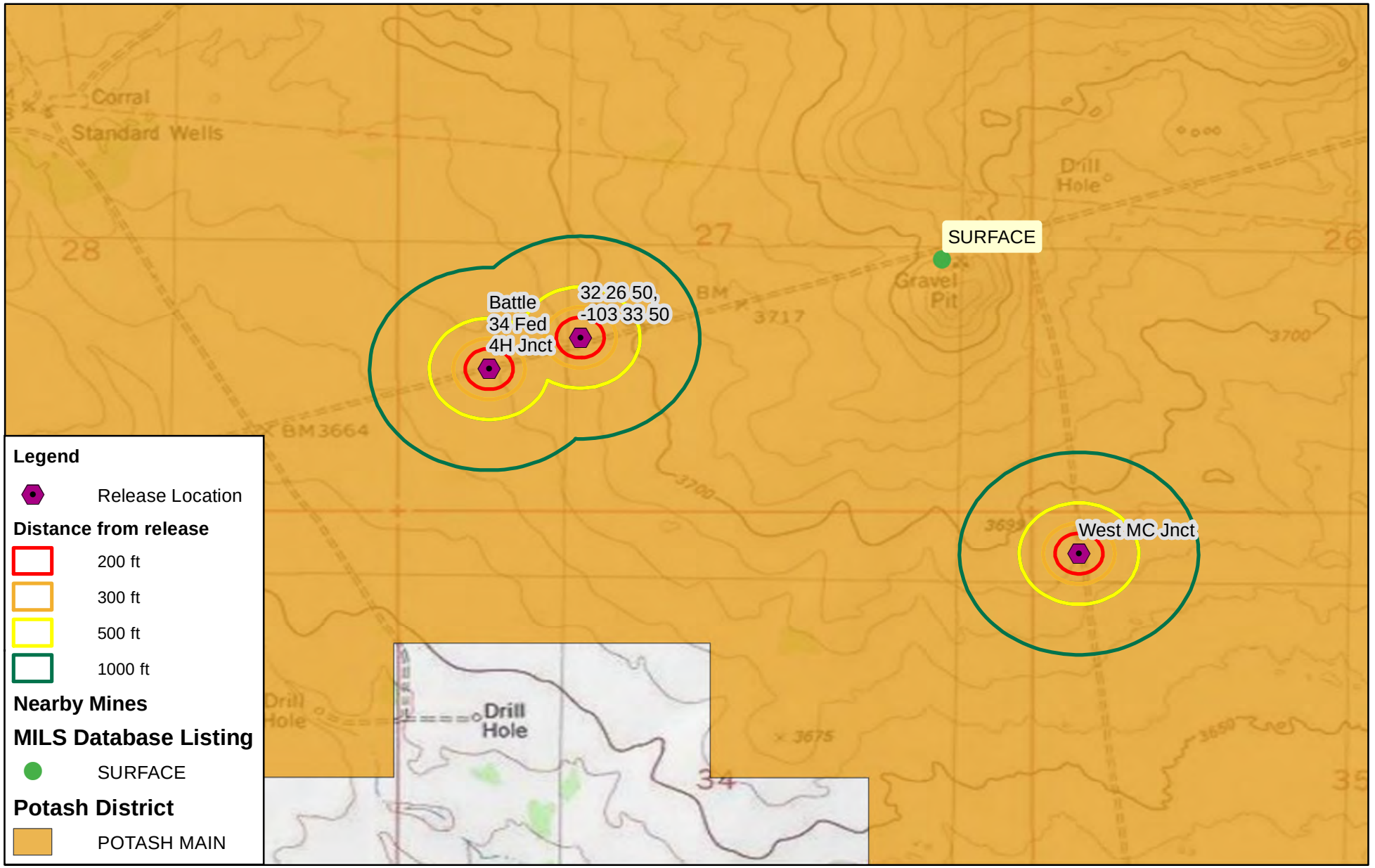

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	Advanced Energy Partners Hat Mesa, LLC Merchant Containment/Merchant State 503H Release(s)	February 2018

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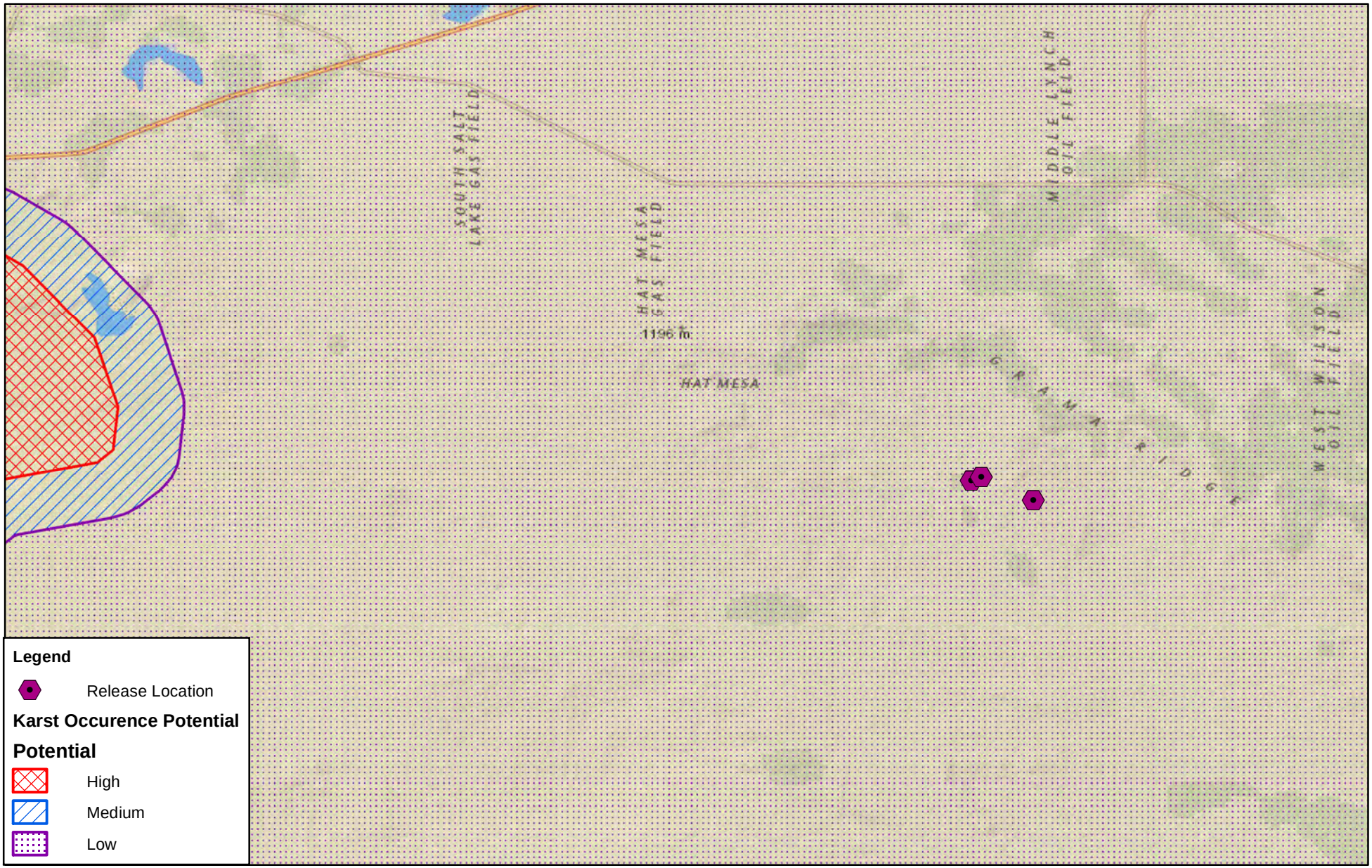

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Karst Potential

Plate 8

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Merchant Containment/Merchant State 503H Release(s)

February 2018

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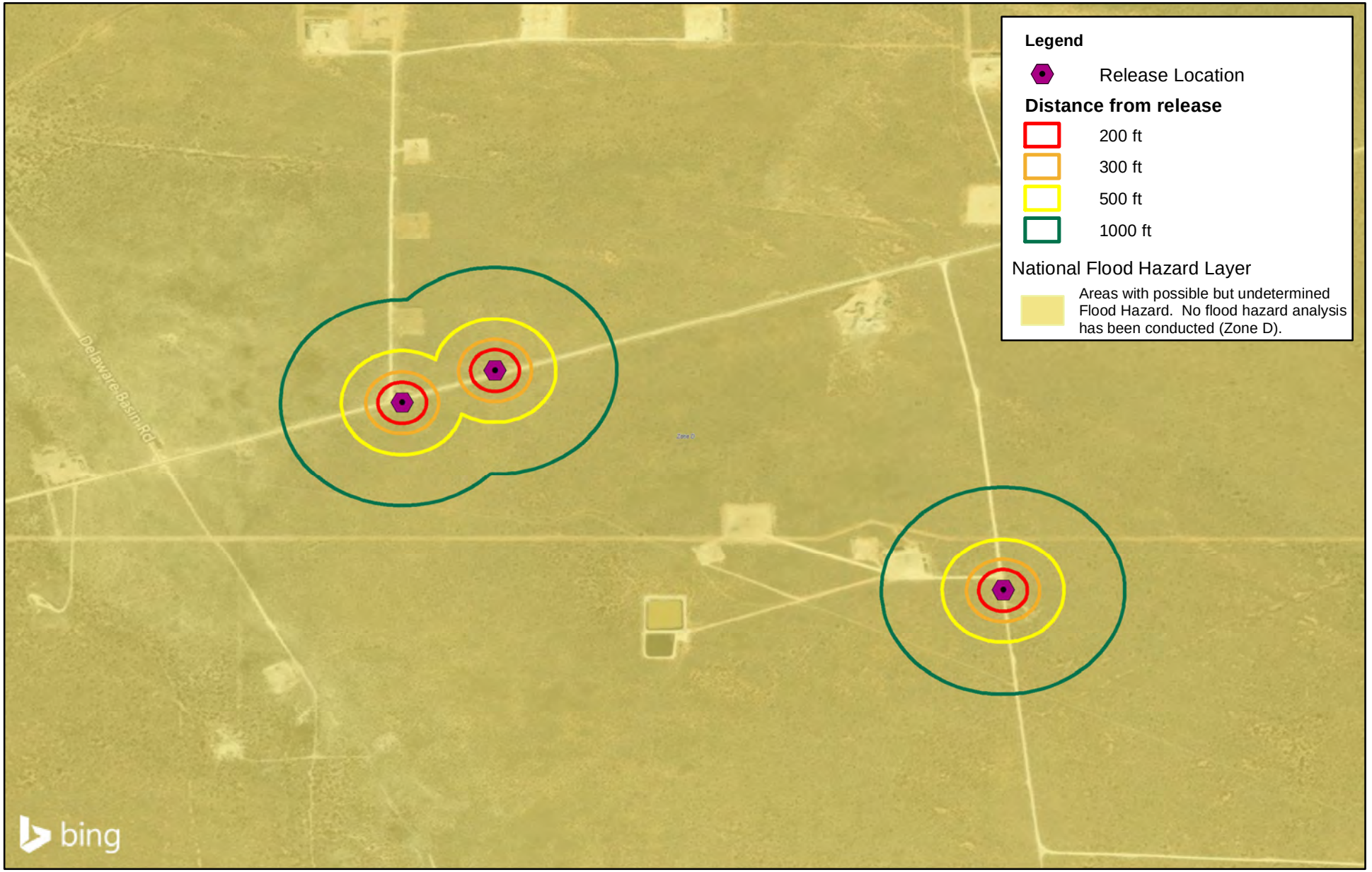

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FEMA Flood Map

Plate 9

Advanced Energy Partners Hat Mesa, LLC
Merchant Containment/Merchant State 503H Release(s)

February 2018

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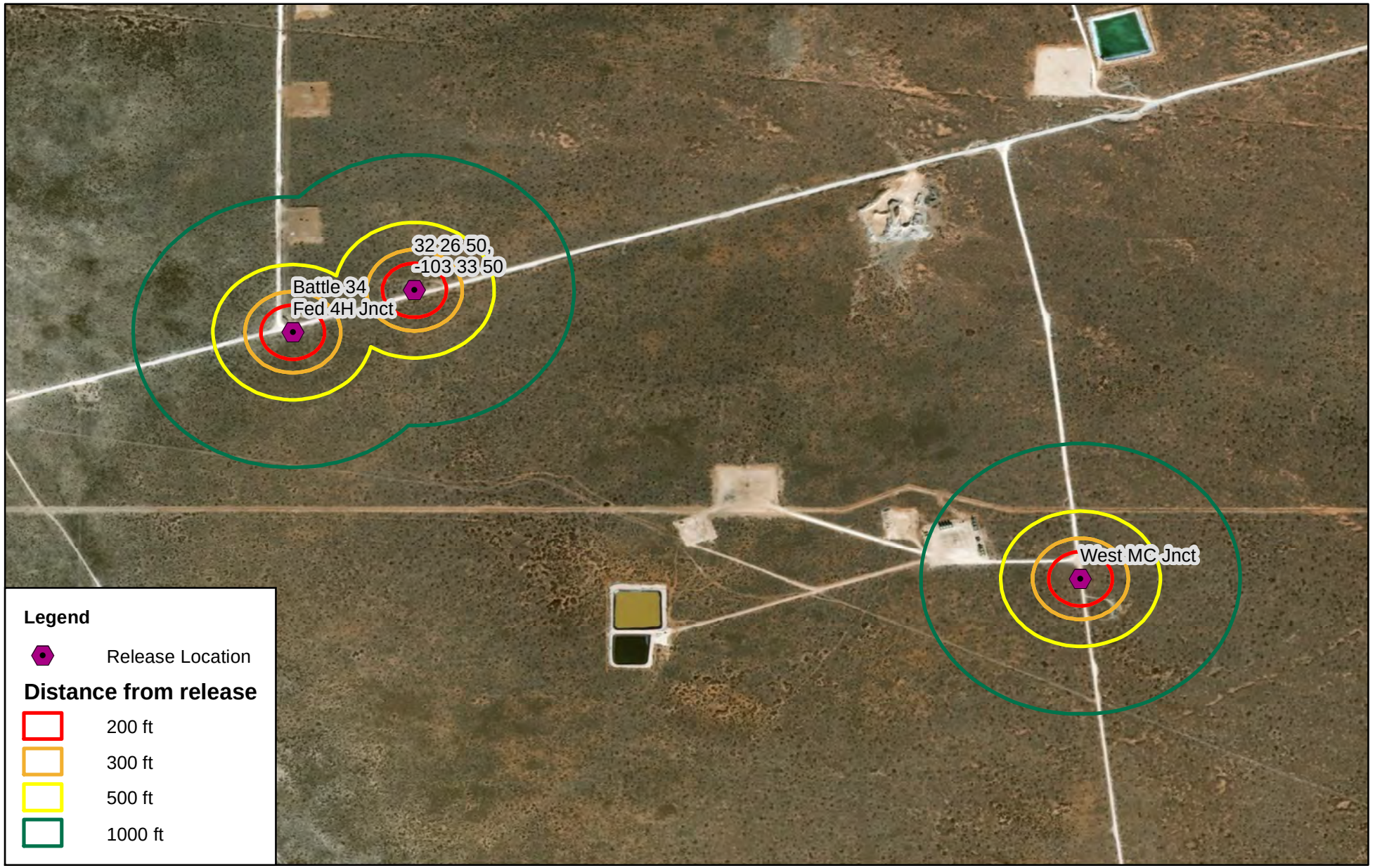


R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Location of Release Sites Relative to a Jan. 2016 Aerial Photo	Plate 10
	Advanced Energy Partners Hat Mesa, LLC Merchant Containment/Merchant State 503H Release(s)	February 2018

Attachment A

Attachment A

Characterization Results and Remediation Plan for Battle 34 Produced Water Transfer Line Site

Hydrocarbons were not detected in the initial response samples obtained in January 2018. In conformance with the proposed Rule, the Table I closure criteria (and the delineation limits) for chloride are:

Closure Criteria Depth (below ground surface)	Chloride Limit
0-4 feet	600 mg/kg
>4 feet	20,000 mg/kg

Final closure samples will include representative samples for GRO, DRO, MRO (TPH via 8015M) and BTEX as described in this plan.

To reiterate, the information presented in this Attachment meets the mandates of the existing Rule and complies with the language of the proposed Rule. The closure criteria for this site is appropriate and

- Is based upon data from numerous sites evaluated by OCD
- Agrees with testimony accepted by the Oil Conservation Commission, and
- Conforms to the Laws of Fluid Mechanics.

Figures 1-9 show that this site meets the criteria established by proposed Section 19.15.29.12.B.3 and B.4.

Table A-1, attached, presents the result of all sampling conducted at the site. Plate A-1 presents the average chloride concentration observed from ground surface and 3 to 4 feet below ground surface (bgs) at each location from either the January 2018 or March 2018 sampling event.

Site Map
Plate A-1 is a scaled map showing the locations of the samples obtained to quantify the horizontal and vertical extent of the release in compliance with Table I of the proposed Rule. The data for each sampling point is also shown on Plate A-1

Vertical and Horizontal Characterization of the Battle 34 Site
The footprint of this release and the other two releases that are the subject of 1RP-4953 were mapped by Bradley Blevins of Merchant Livestock. Hicks Consultants inspected the sites with Mr. Blevins and we believe the sketches of Merchant Livestock are accurate. The horizontal extent is defined by the spill footprint (polygon with white fill) mapped by Mr. Blevins shown on Plate A-1.

Table A-1 and Plate A-1present the results of the vertical delineation samples of March 6, 2018 as well as the samples obtained on January 30 for the initial evaluation. From these

data we conclude the following regarding the vertical extent of chloride impacts above the proposed closure/delineation criteria.

1. Samples obtained east of the road (sample points T5, T2 and T1 on Road) all encountered hard caliche at 2-feet below the road (about 3 feet below natural grade). The data show
    a. The sand above the caliche is impacted above the 600 mg/kg closure criteria
    b. The three (3) caliche samples beneath the sand meets the closure criteria for the upper 4-feet
2. Samples in the area of pooling of released water (T3, T4, B1 and B2) show
    a. From grade to 4-feet below grade
        i. Near the road (T3) chloride in sand is below closure criteria
        ii. On the east margin of the pooling area (B1) only the uppermost ½ foot of sand exceeds closure criteria
        iii. On the southern margin of the area (T4S), the uppermost 4-feet is below closure criteria
        iv. Within the pooling area (B2 and T4 N), the uppermost 4 feet exceed the closure criteria
    b. Below 4-feet and within the pooling area, the sand and caliche in T4 MID meet the closure criteria

Remediation Plan for Battle 34 Site

The proposed Rule 19.15.29.12.B.1 requires that the following information.

(a) delineation results, including laboratory analysis

Delineation results are presented in Plate A-1 and Table A-1. Laboratory reports are included in Appendix B

(b) a scaled sitemap showing release area with horizontal and vertical delineation points

Plate A-1 is the scaled map showing the mapped footprint of the release and the sample points

(c) estimated volume of impacted material to be remediated

Along the eastern edge of the access road, we estimate excavation and removal of (475 feet long x 2 feet wide x 2 feet deep = 1888 cubic feet) 70 cubic yards. This is based on

- Excavation of the road is not anticipated as infiltration of water on the packed surface will be limited to the upper 1-2 inches. This depth of penetration estimate is based upon visual observations in the road and testing of the lease road at the adjacent release site (site 32 26 50 / -103 33 50)
- Excavation and removal will be limited to the area of the eastern 1-3 foot swale between the road and the natural ground.

The mapped pooling area footprint is about 190 square yards. The sample data suggest that about 50% of the upper 4-feet exceeds the closure standard of 600 mg/kg. The maximum volume of material to be excavated and removed to approved disposal is (190 yrds x 0.5 yrds x 1.33 yrds=) 126 cubic yards.

(d) proposed remediation technique

Excavation of impacted sand and removal to an OCD permitted disposal facility and replacement of the excavated volume with four feet of non-waste material containing,

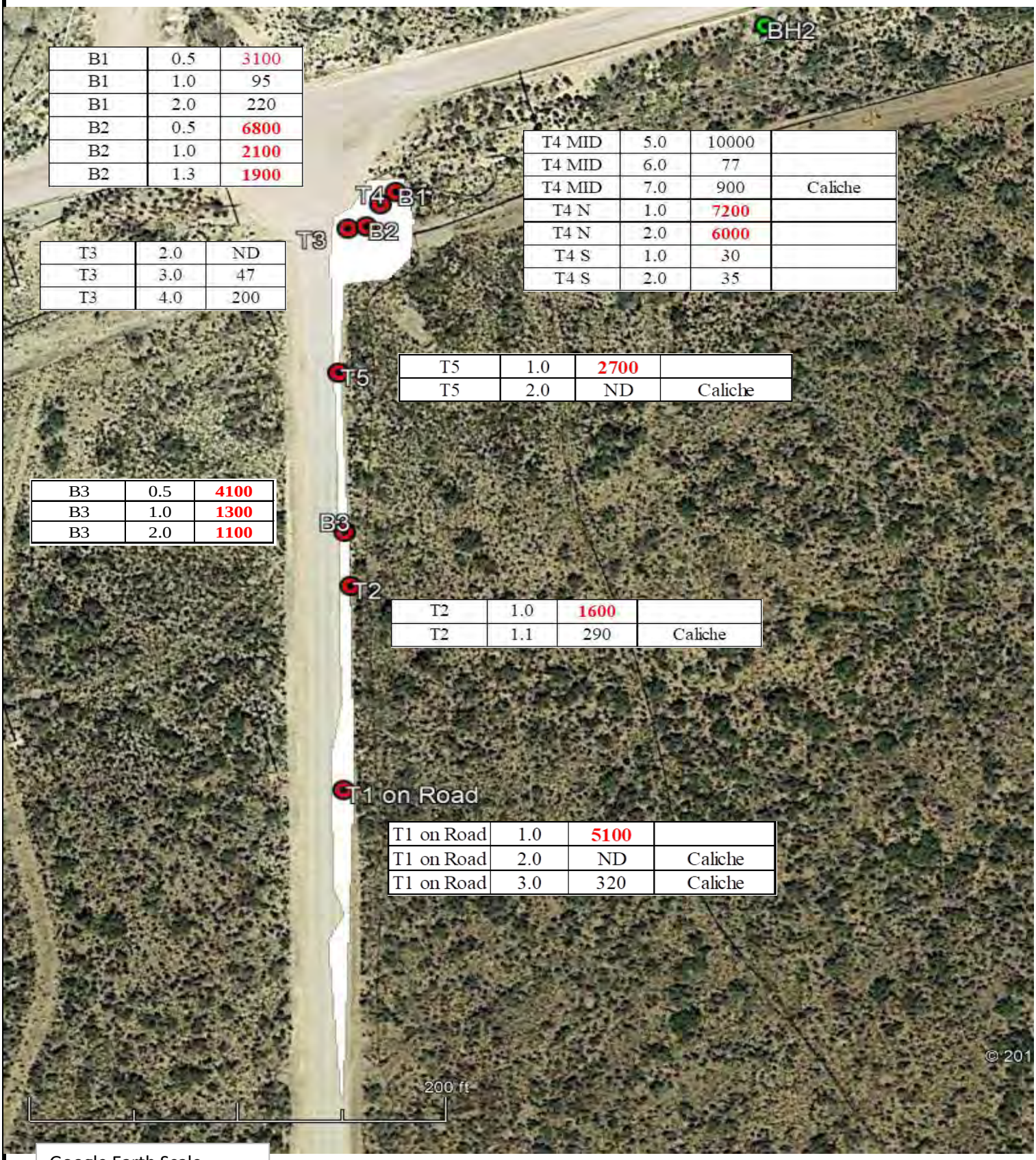
uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0. The technique for removal is

i. Excavate and remove to disposal four (4) loads or about 80 cubic yards of impacted material from the center of the pooling footprint to a depth of 4-feet. This will be an area of about 40 feet by 40 feet by 4 feet deep.
ii. Collect two samples on each sidewall of the excavation resulting in
    a. Four samples from ground level to 2-feet deep
    b. Four samples from 2 feet to 4-feet deep
iii. Use field techniques to measure the chloride concentration of each sample. Excavation extent will be adjusted in the field, as necessary, per results of field chloride testing (results > 600 mg/kg chloride). Cease excavation where the average of the two field chloride tests (0-2 feet and 2-4 feet) suggests that upper four feet of earth is below the closure criteria of 600 mg/kg chloride.
iv. While field testing of the 8 samples from the pooling area, begin excavation of the 70 cubic yards of impacted material on the east side of the lease road.
v. Collect four samples from the east and west sidewall of the trench such that the samples are about 100-feet apart resulting in
    a. Eight samples from ground level to 2-feet deep
    b. Eight samples from 2 feet to 4-feet deep
vi. Use field techniques to measure the chloride concentration of each sample. Excavation extent will be adjusted in the field, as necessary, per results of field chloride testing (results > 600 mg/kg chloride). Cease excavation where the average of the two field chloride tests (0-2 feet and 2-4 feet) suggests that upper four feet of earth is below the closure criteria of 600 mg/kg chloride.
vii. A temporary fence will be installed around the excavation area until chloride results from the laboratory confirm chloride is below 600 mg/kg in the upper 4-feet, as discussed below.
viii. Prior to backfilling the excavations, collect a minimum six (6) sidewall samples in the pooling area excavation and six (6) sidewall samples in the road trench for laboratory analysis of chloride using EPA Method 300. The samples will be collected as near as possible to the field-tested sample locations.
ix. Compare the laboratory results with the field tests.
x. If the laboratory and field testing demonstrate that average chloride concentrations of the upper four feet of earth are less than 600 mg/kg, the excavations will be backfilled with non-waste material containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0.
xi. Restore the excavated surface areas to the condition that existed prior to the release. Backfill must be replaced to the near original relative positions and contoured to achieve erosion control, long-term stability and preservation of surface water flow patterns.
xii. Retain all field notes, photographs, field analyses and laboratory results in order to submit a closure report within 90 days of Remediation Plan approval that contains:
    a. a scaled site map and sampling diagram
    b. photographs of the remediated site prior to backfill
    c. laboratory analyses of final sampling; and
    d. a description of all remedial activities.

(e) proposed timeline for remediation activities

We anticipate commencing excavation and removal within 30-days of OCD approval of this complete Remediation Plan (including Attachments B and C).

To comply with proposed Rule 19.15.29.13 Advance will cause reseeding of the release footprint in the first favorable growing season following closure of the site. Advance will consider reclamation of all disturbed areas complete when uniform vegetative cover has been established that reflects a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds. Advance will notify the OCD when reclamation and re-vegetation are complete.



B1	0.5	3100
B1	1.0	95
B1	2.0	220
B2	0.5	6800
B2	1.0	2100
B2	1.3	1900

T4 MID	5.0	10000	
T4 MID	6.0	77	
T4 MID	7.0	900	Caliche
T4 N	1.0	7200	
T4 N	2.0	6000	
T4 S	1.0	30	
T4 S	2.0	35	

T3	2.0	ND
T3	3.0	47
T3	4.0	200

T5	1.0	2700	
T5	2.0	ND	Caliche

B3	0.5	4100
B3	1.0	1300
B3	2.0	1100

T2	1.0	1600	
T2	1.1	290	Caliche

T1 on Road	1.0	5100	
T1 on Road	2.0	ND	Caliche
T1 on Road	3.0	320	Caliche

Google Earth Scale

R.T. Hicks Consultants Albuquerque, NM	**Spill Footprint and Sample Locations**	**Plate A-1**
	Advance - Battle 34 Site	**Apr-18**

Table A-2 - Analytical Data from Sampling Battle 34 Site

Release Location	Date	Time	Sample ID	Depth (feet)	Chloride (mg/kg)	Comments
Battle 34	1/30/18	1309	B1	0.5	3100	
Battle 34	1/30/18	1311	B1	1.0	95	
Battle 34	1/30/18	1315	B1	2.0	220	
Battle 34	1/30/18	1332	B2	0.5	**6800**	
Battle 34	1/30/18	1335	B2	1.0	**2100**	
Battle 34	1/30/18	1335	B2	1.3	**1900**	
Battle 34	1/30/18	1351	B3	0.5	**4100**	
Battle 34	1/30/18	1356	B3	1.0	**1300**	
Battle 34	1/30/18	1402	B3	2.0	**1100**	
Battle 34	3/6/18	1459	T1 on Road	1.0	**5100**	
Battle 34	3/6/18	1501	T1 on Road	2.0	ND	Caliche
Battle 34	3/6/18	1503	T1 on Road	3.0	320	Caliche
Battle 34	3/6/18	1514	T2	1.0	**1600**	
Battle 34	3/6/18	1515	T2	1.1	290	Caliche
Battle 34	3/6/18	1539	T3	1.0	310	
Battle 34	3/6/18	1538	T3	2.0	ND	
Battle 34	3/6/18	1536	T3	3.0	47	
Battle 34	3/6/18	1534	T3	4.0	200	
Battle 34	3/6/18	1601	T4 MID	5.0	10000	
Battle 34	3/6/18	1606	T4 MID	6.0	77	
Battle 34	3/6/18	1608	T4 MID	7.0	900	Caliche
Battle 34	3/6/18	1558	T4 N	1.0	**7200**	
Battle 34	3/6/18	1600	T4 N	2.0	**6000**	
Battle 34	3/6/18	1556	T4 S	1.0	30	
Battle 34	3/6/18	1554	T4 S	2.0	35	
Battle 34	3/6/18	1618	T5	1.0	**2700**	
Battle 34	3/6/18	1622	T5	2.0	ND	
Closure Criteria				**0-4'**	**600**	
Closure Criteria				**>4'**	**20,000**	

Attachment B

Attachment B

Characterization Results and Remediation Plan for West of Merchant Pit (W of MP) Produced Water Transfer Line Site

Hydrocarbons were not evaluated as part of the characterization process as the release was treated produced water and evaluation of chloride only was the most appropriate to define the extent of impact. In conformance with the proposed Rule, Table I closure criteria (and the delineation limits) for chloride are:

Closure Criteria Depth (below ground surface)	Chloride Limit
0-4 feet	600 mg/kg
>4 feet	20,000 mg/kg

Final closure samples will include representative samples for GRO, DRO, MRO (TPH via 8015M) and BTEX as described in this plan.

To reiterate, the information presented in this Attachment meets the mandates of the existing Rule and complies with the language of the proposed Rule. The closure criteria for this site is appropriate and

- Is based upon data from numerous sites evaluated by OCD
- Agrees with testimony accepted by the Oil Conservation Commission, and
- Conforms to the Laws of Fluid Mechanics.

Figures 1-9 show that this site meets the criteria established by proposed Section 19.15.29.12.B.3 and B.4.

Table B-1, attached, presents the result of all sampling conducted at the site. Plate B-1 presents the location and chloride concentrations observed from the January 2018 and March 2018 sampling evens.

Site Map

Plate B-1 is a scaled map showing the locations of the samples obtained to quantify the horizontal and vertical extent of the release in compliance with Table I of the proposed Rule. The data for each sampling point is also shown on Plate B-1

Vertical and Horizontal Characterization of the West of Merchant Pit Site

The footprint of this release and the other two releases that are the subject of 1RP-4953 were mapped by Bradley Blevins of Merchant Livestock. Hicks Consultants inspected the sites with Mr. Blevins and we believe the sketches of Merchant Livestock are accurate. The horizontal extent is defined by the spill footprint mapped by Mr. Blevins shown on Plate B-1 as a transparent green polygon with red outline.

Table B-1 and Plate B-1present the results of the vertical delineation samples of January 2018 and March 2018. From these data we conclude the following regarding the vertical extent of chloride impacts above the proposed closure criteria.

1. Samples BH-1 and T-1 are at the same location, within the pooling area at the release point from the lay-flat pipe that transmitted treated produced water to the hydraulic stimulation.
    a. Beneath the pooling area, which extends north from T-1 to the northern limit of the release footprint and south to about ½ the distance to T5S & T6N, the upper four feet of earth exceeds the closure criteria of 600 mg/kg.
    b. At T-1 @ Jnct, the earth below the 4-foot depth chloride concentrations are below closure criteria (20,000 mg/kg)
        - Note the difference of laboratory results from the split sample from 6 feet (290 mg/kg v. 750 mg/kg), which demonstrate the natural variability due to the heterogeneity of soil samples.
    c. Sample T5S and T6N represent the impact of flowing produced water on the lease road. These samples were taken from the same trench – T5S on the south edge of the trench and T6N was obtained about 12 feet north., In the upper two feet, chloride concentrations were either below laboratory detection levels or significantly lower than 600 mg/kg. It is highly unlikely that chloride concentrations will exceed closure criteria for the upper 4-feet. Therefore, we conclude that the mass of infiltrated produced water was insufficient to cause a material impact and remediation of the lease road is not required. All of the flow from the pooling area to the area of T2 and T3 was on the road surface, there was no ditch on the road edges as sometimes will occur.
    d. Pooling of produced water occurred in the area of T2. In this sample, chloride concentrations exceed the closure criteria of 600 mg/kg for the uppermost 4 feet.
    e. Although evidence of surface flow was obvious in the area of T3 and T4, the laboratory did not detect chloride in these samples within the upper 2-feet. We conclude that the infiltration of produced water did not cause sufficient mass of salt to generate impairment of the soil.

Remediation Plan for West of Merchant Pit Site

The proposed Rule 19.15.29.12.B.1 requires that the following information.

(a) delineation results, including laboratory analysis

Delineation results are presented in Plate B-1 and Table B-1. Laboratory reports are included in Appendix B

(b) a scaled sitemap showing release area with horizontal and vertical delineation points

Plate B-1 is the scaled map showing the mapped footprint of the release and the sample points

(c) estimated volume of impacted material to be remediated

The pooling area is defined as a triangular area about 80 feet north/south along the west edge of the lease road that is about 15 feet wide at the road junction (see Plate B-1). The

pooling area footprint is about 75 square yards and given the 4-foot depth of impact, results in a volume of slightly less than 100 cubic yards that require remediation.

Around sampling trench T4, the area requiring remediation is due east of the lease road and comprises about 40 square yards (about 50 cubic yards). The dimensions of this area is about 6-feet (east/west) and 50 feet (north/south).

Remediation of the north/south lease road and the abandoned east/west road (See Plate B-1) is not anticipated as infiltration of water on the packed surface was limited to the upper 1-2 inches. This depth of penetration estimate is based upon visual observations in the roads and testing of T5S, T5N, T3 and T4.

(d) proposed remediation technique

Excavation of impacted sand and removal to an OCD permitted disposal facility and replacement of the excavated volume with four feet of non-waste material containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0. The technique for removal is

i. Excavate and remove to disposal five (5) loads or about 100 cubic yards of impacted material from the pooling footprint near the intersection of the lease roads to a depth of 4-feet.
ii. Collect two samples on each sidewall of the excavation resulting in
    a. Four samples from ground level to 2-feet deep
    b. Four samples from 2 feet to 4-feet deep
iii. Use field techniques to measure the chloride concentration of each sample. Excavation extent will be adjusted in the field, as necessary, per results of field chloride testing (results > 600 mg/kg chloride). Cease excavation where the average of the two field chloride tests (0-2 feet and 2-4 feet) suggests that upper four feet of earth is below the closure criteria of 600 mg/kg chloride.
iv. While field testing of the 8 samples from the pooling area, begin excavation of the 50 cubic yards of impacted material on the east side of the north/south lease road
v. Collect one samples from each sidewall of the trench resulting in
    a. Four samples from ground level to 2-feet deep
    b. Four samples from 2 feet to 4-feet deep
vi. Use field techniques to measure the chloride concentration of each sample. Excavation extent will be adjusted in the field, as necessary, per results of field chloride testing (results > 600 mg/kg chloride). Cease excavation where the average of the two field chloride tests (0-2 feet and 2-4 feet) suggests that upper four feet of earth is below the closure criteria of 600 mg/kg chloride.
vii. A temporary fence will be installed around the excavation area until chloride results from the laboratory confirm chloride is below 600 mg/kg in the upper 4-feet, as discussed below.
viii. Prior to backfilling the excavations, collect a minimum six (6) sidewall samples in each pooling area excavation for laboratory analysis of chloride using EPA Method 300. The samples will be collected as near as possible to the field-tested sample locations.
ix. Compare the laboratory results with the field tests
x. If the laboratory and field testing demonstrate that average chloride concentrations of the upper four feet of earth are less than 600 mg/kg, the

excavations will be backfilled with non-waste material containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0.

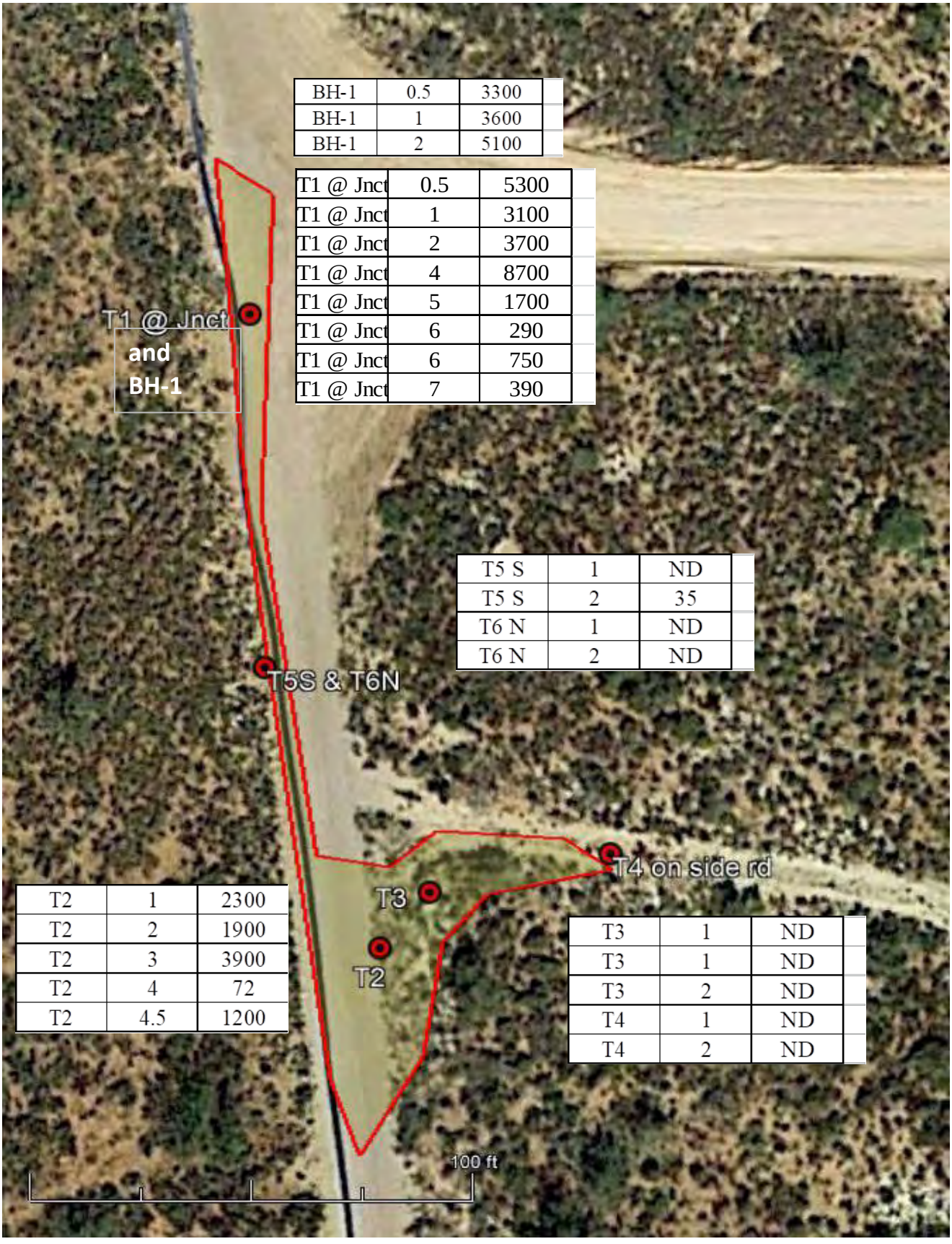
xi. Restore the excavated surface areas to the condition that existed prior to the release. Backfill must be replaced to the near original relative positions and contoured to achieve erosion control, long-term stability and preservation of surface water flow patterns.

xii. Retain all field notes, photographs, field analyses and laboratory results in order to submit a closure report within 90 days of Remediation Plan approval that contains:
   a. a scaled site map and sampling diagram
   b. photographs of the remediated site prior to backfill
   c. laboratory analyses of final sampling; and
   d. a description of all remedial activities.

(e) proposed timeline for remediation activities

We anticipate commencing excavation and removal within 30-days of OCD approval of this complete Remediation Plan (including Attachments A and C).

To comply with proposed Rule 19.15.29.13 Advance will cause reseeding of the release footprint in the first favorable growing season following closure of the site. Advance will consider reclamation of all disturbed areas complete when uniform vegetative cover has been established that reflects a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds. Advance will notify the OCD when reclamation and re-vegetation are complete.



Hicks Consultants Albuquerque, NM	**Spill Footprint and Laboratory Data**	**Apr-18**
	Advance Energy West of Merchant Pit Release	**Plate B-1**

Table B-1 - Analytical Data from Sampling West of MP

Sample ID	Date	Depth (feet)	Chloride (mg/kg)	Comments
BH-1	1/30/2018	0.5	3,300	
BH-1	1/30/2018	1	3,600	
BH-1	1/30/2018	2	5,100	
T1 @ Jnct	3/6/2018	0.5	5,300	
T1 @ Jnct	3/6/2018	1	3,100	
T1 @ Jnct	3/6/2018	2	3,700	
T1 @ Jnct	3/6/2018	4	8,700	
T1 @ Jnct	3/6/2018	5	1,700	Caliche
T1 @ Jnct	3/6/2018	6	290	
T1 @ Jnct	3/6/2018	6	750	Merchant
T1 @ Jnct	3/6/2018	7	390	
T2	3/6/2018	1	2,300	
T2	3/6/2018	2	1,900	
T2	3/6/2018	3	3,900	
T2	3/6/2018	4	72	
T2	3/6/2018	4.5	1,200	Caliche
T3	3/6/2018	1	ND	
T3	3/6/2018	1	ND	Merchant
T3	3/6/2018	2	ND	
T4 on side rd	3/6/2018	1	ND	
T4 on side rd	3/6/2018	2	ND	
T5 S	3/6/2018	1	ND	
T5 S	3/6/2018	2	35	
T6 N	3/6/2018	1	ND	
T6 N	3/6/2018	2	ND	

Attachment C

Attachment C

Characterization Results and Remediation Plan for Latitude 32 26 50 Produced Water Transfer Line Site

Hydrocarbons were not evaluated as part of the characterization process as the release was treated produced water and evaluation of chloride only was the most appropriate to define the extent of impact. In conformance with the proposed Rule, Table I closure criteria (and the delineation limits) for chloride are:

Closure Criteria Depth (below ground surface)	Chloride Limit
0-4 feet	600 mg/kg
>4 feet	20,000 mg/kg

Final closure samples will include representative samples for GRO, DRO, MRO (TPH via 8015M) and BTEX as described in this plan.

To reiterate, the information presented in this Attachment meets the mandates of the existing Rule and complies with the language of the proposed Rule. The closure criteria for this site is appropriate and

- Is based upon data from numerous sites evaluated by OCD
- Agrees with testimony accepted by the Oil Conservation Commission, and
- Conforms to the Laws of Fluid Mechanics.

Figures 1-9 show that this site meets the criteria established by proposed Section 19.15.29.12.B.3 and B.4.

Table C-1, attached, presents the result of all sampling conducted at the site. Plates C-1 presents the location and chloride concentrations observed from the January 2018 and March 2018 sampling evens.

Site Map

Plates C-1 and C-2 are scaled maps showing the locations of the samples obtained to quantify the horizontal and vertical extent of the release in compliance with Table I of the proposed Rule. The data for each sampling point is also shown on the Plates.

Vertical and Horizontal Characterization of the Latitude 32 26 50 Site

The footprint of this release and the other two releases (Battle 34 and W of MP) that are the subject of 1RP-4953 were mapped by Bradley Blevins of Merchant Livestock. Hicks Consultants inspected the sites with Mr. Blevins and we believe the sketches of Merchant Livestock are accurate. The horizontal extent is defined by the spill footprint mapped by Mr. Blevins shown on Plate C-1 as transparent yellow and green polygons with red outline.

Table C-1 and Plates C-1 and C-2 present the results of the vertical delineation samples of January 2018 and March 2018. From these data we conclude the following regarding the vertical extent of chloride impacts above the proposed closure criteria.

1. Samples BH1 and "Release Pt" are at the same location, taken at the point of release from the lay-flat pipe that transmitted treated produced water to the hydraulic stimulation.
    a. Beneath the release point, the upper four feet of earth exceeds the closure criteria of 600 mg/kg
    b. Samples from "S of Release Pt" below 4-feet meet the proposed closure criteria.
2. The sample "Flowpath Dune" lies about 4 horizontal feet and 2 vertical feet north of Release Pt. The upper 1-foot of soil tested at 720 mg/kg chloride and the two underlying samples did not detect chloride above 30 mg/kg. Given the steep slope of the dune, the small depth of penetration is not surprising.
3. Samples Road #1 and Road NW were obtained within the flow path of the release and, as the sample name suggests, within the road. Much of the road between these two samples is constructed on exposed caliche; hence penetration with a backhoe was not possible below 6-inches (0.5 feet). Given the data showing chloride concentrations varying by an order of magnitude between samples obtained at 0.2 and 0.5 feet and the lack of penetration due to caliche, it is impossible to determine if the upper 4-feet (road and underlying caliche) exceed 600 mg/kg chloride. However, it is highly unlikely, based upon the Laws of Fluid Mechanics and other data, that the caliche below 4-feet will exceed 20,000 mg/kg chloride.
4. "S of Release Pt" and BH2 are at the same location and are within the flow path shown by the yellow highlighted area of the footprint mapped by Merchant Livestock. Chloride data from the upper 2-feet of sand at this location are about the same as that observed at "Release Pt" and BH1.
5. From these data, we conclude that
    a. flow to the north of the release point followed a steep downward gradient and did not penetrate below 2 feet.
    b. Flow south of the release point was in dune sand and a vertical profile with chloride above the 600 mg/kg closure criteria in the upper 4-feet soil horizon.

Remediation Plan for Latitude 32 26 50 Site

The proposed Rule 19.15.29.12.B.1 requires that the following information.

(a) delineation results, including laboratory analysis

Delineation results are presented in Plate C-1 and Table C-1. Laboratory reports are included in Appendix B

(b) a scaled sitemap showing release area with horizontal and vertical delineation points

Plate C-1 is the scaled map showing the mapped footprint of the release and the sample points. It is important to note that the flow path north of the release point was restricted to the road. The flow followed the road, westward and downhill. The road is excavated into the surrounding dunes and there are no drainage ditches to capture flow.

(c) estimated volume of impacted material to be remediated

The spill footprint shown in the yellow highlight in the Plates is slightly more than 75 square yards and given the 4-foot depth of impact, results in a volume of slightly less than 100 cubic yards that require remediation. However, we believe that this area would benefit by additional sampling during the proposed excavation and removal process to better define the volume of material requiring remediation.

We believe that the data from samples north of the release point (Flowpath Dune and Road #1) and extending west to the Road NW location permit a conclusion that excavation and removal would cause more environmental harm than benefit. Moreover, after one rainfall event, the chloride in the upper 1-foot at the Flowpath Dune sample will disperse and re-vegetation will be possible. Additionally, because vegetation within the road is obviously not warranted and the release does not endanger fresh water, remediation of this area of the road is not necessary at this time.

(d) proposed remediation technique

Within the 75 square yard area shown by the yellow highlight, we propose excavation of impacted sand and removal to an OCD permitted disposal facility and replacement of the excavated volume with four feet of non-waste material containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0. The technique for removal is

i. Excavate and remove to disposal five (5) loads or about 100 cubic yards of impacted material from the footprint north of the release point
ii. Near the release point, collect one sample from 0-2 feet deep and one from 2-4 feet deep and submit the sample to the laboratory for analysis of hydrocarbons (GRO+DRO+MRO and BTEX) using appropriate EPA Methods.
iii. Collect two samples on each sidewall of the excavation resulting in
    a. Four samples from ground level to 2-feet deep
    b. Four samples from 2 feet to 4-feet deep – or the depth of hard caliche
    c. Within the excavation footprint, collect samples of caliche below the sand if the excavation is not 4-feet deep. Use a sample density for caliche samples of one for every 25 square yards.
iv. Use field techniques to measure the chloride concentration of each sample. Excavation extent will be adjusted in the field, as necessary, per results of field chloride testing (results > 600 mg/kg chloride). Cease excavation
    a. where the average of the two field chloride tests (0-2 feet and 2-4 feet) suggests that upper four feet of earth is below the closure criteria of 600 mg/kg chloride, or
    b. where hard caliche prevents excavation to a depth of 4-feet.
v. A temporary fence will be installed around the excavation area until chloride results from the laboratory confirm chloride is below 600 mg/kg in the upper 4-feet of sand, as discussed below.
vi. Prior to backfilling the excavations, collect a minimum six (6) sidewall samples and bottom samples from parts of the excavation that are shallower than 4-feet.. Submit these samples for laboratory analysis of chloride using EPA Method 300. The samples will be collected as near as possible to the field-tested sample locations.
vii. Compare the laboratory results with the field tests
viii. If the laboratory and field testing demonstrate that average chloride concentrations of the upper four feet of earth are less than 600 mg/kg, the excavations will be backfilled with non-waste material containing,

uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0.

ix. If the excavation is not 4-feet deep and the samples of caliche suggest chloride impact above 600 mg/kg, provide the data to OCD and the surface owner. Also provide a justification to cease excavation in a manner outlined as a "variance" in the proposed Rule.

x. Upon completion of excavation and replacement with clean sand, restore the excavated surface areas to the condition that existed prior to the release. Backfill must be replaced to the near original relative positions and contoured to achieve erosion control, long-term stability and preservation of surface water flow patterns.

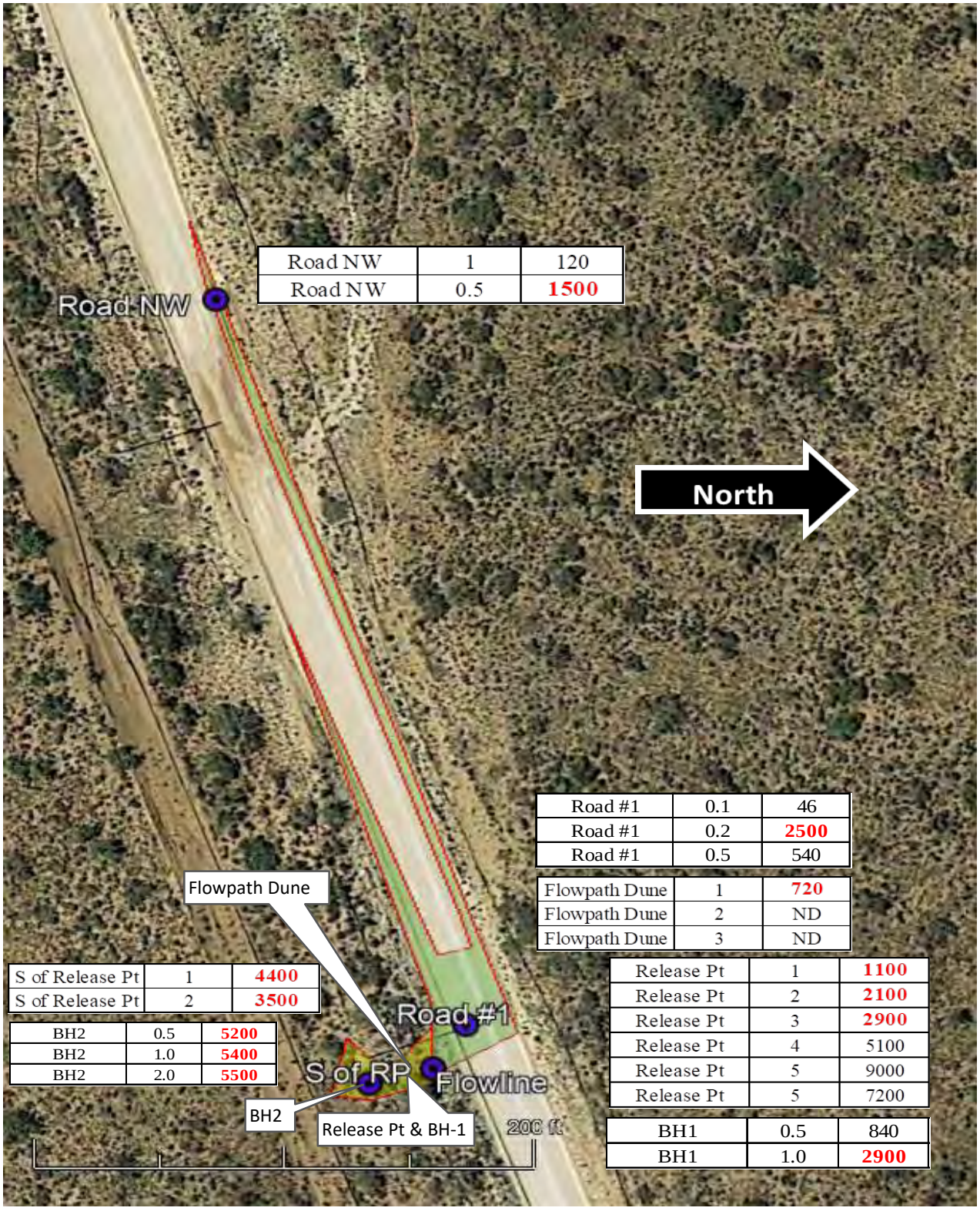
xi. Retain all field notes, photographs, field analyses and laboratory results in order to submit a closure report within 90 days of Remediation Plan approval that contains:
   a. a scaled site map and sampling diagram
   b. photographs of the remediated site prior to backfill
   c. laboratory analyses of final sampling; and
   d. a description of all remedial activities.

(e) proposed timeline for remediation activities

We anticipate commencing excavation and removal within 30-days of OCD approval of this proposed Remediation Plan (including Attachments A and B).

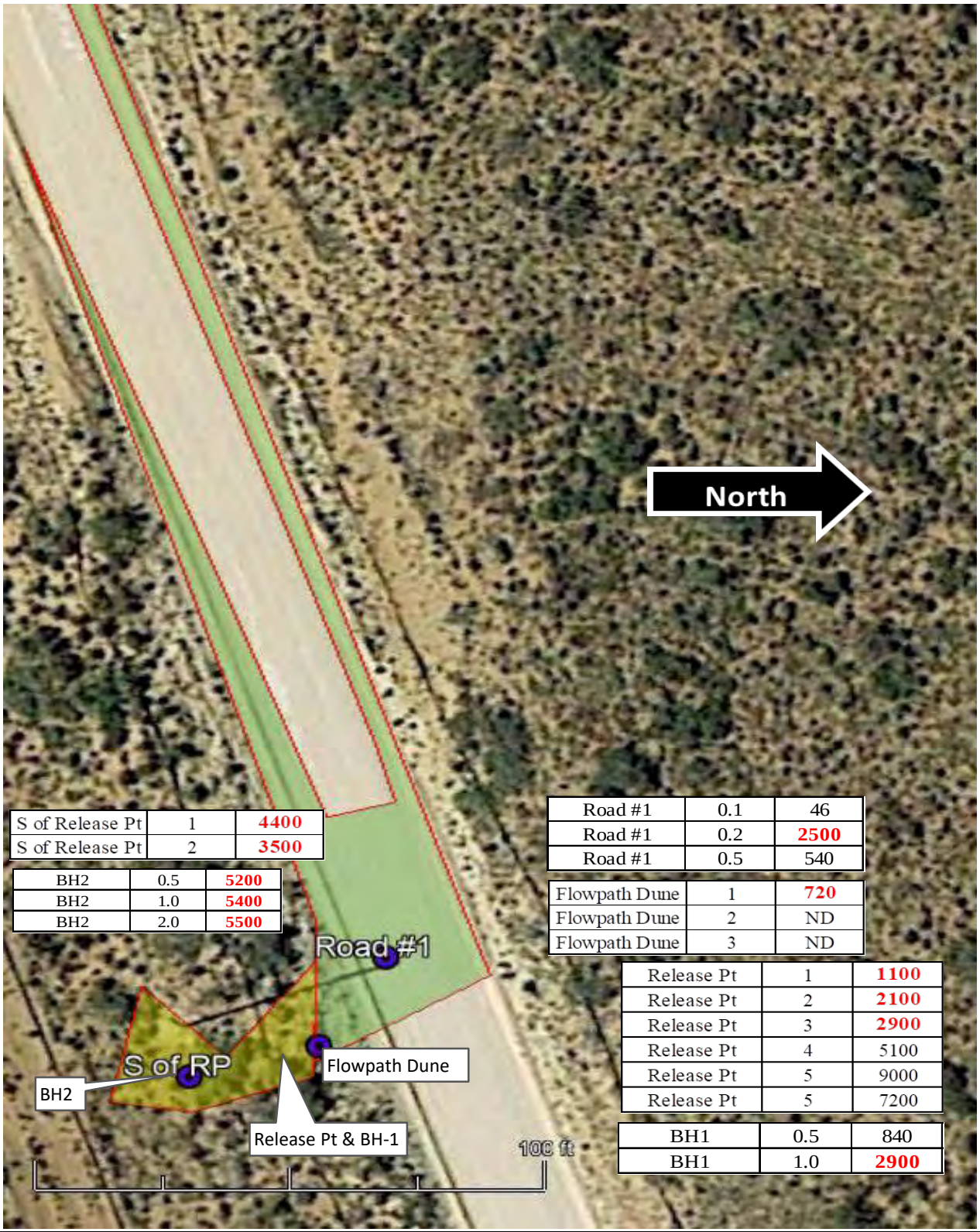
To comply with proposed Rule 19.15.29.13 Advance will cause reseeding of the release footprint in the first favorable growing season following closure of the site. Advance will consider reclamation of all disturbed areas complete when uniform vegetative cover has been established that reflects a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds. Advance will notify the OCD when reclamation and re-vegetation are complete.

Table C-1



Hicks Consultants Albuquerque, NM	Spill Footprint and Laboratory Data	Apr-18
	Advance Energy Latitude 32 26 50	Plate C-1

Table C-1



S of Release Pt	1	4400
S of Release Pt	2	3500

BH2	0.5	5200
BH2	1.0	5400
BH2	2.0	5500

Road #1	0.1	46
Road #1	0.2	2500
Road #1	0.5	540

Flowpath Dune	1	720
Flowpath Dune	2	ND
Flowpath Dune	3	ND

Release Pt	1	1100
Release Pt	2	2100
Release Pt	3	2900
Release Pt	4	5100
Release Pt	5	9000
Release Pt	5	7200

BH1	0.5	840
BH1	1.0	2900

Hicks Consultants Albuquerque, NM	Spill Footprint and Laboratory Data	Apr-18
	Advance Energy Latitude 32 26 50	Plate C-2

Table C-1

Release Location	Date	Sample ID	Depth	Chloride	Comments
			(ft)	(mg/kg)	
35 26 50	1/30/2018	BH1	0.5	840	
36 26 50	1/30/2018	BH1	1.0	**2,900**	
32 26 50	1/30/2018	BH2	0.5	**5,200**	
33 26 50	1/30/2018	BH2	1.0	**5,400**	
34 26 50	1/30/2018	BH2	2.0	**5,500**	caliche
32 26 50	3/7/2018	Flowpath Dune	1.0	**720**	caliche
32 26 50	3/7/2018	Flowpath Dune	2.0	ND	
32 26 50	3/7/2018	Flowpath Dune	3.0	ND	
32 26 50	3/7/2018	Road NW	1.0	120	
32 26 50	3/7/2018	Road NW	0.5	**1,500**	
32 26 50	3/7/2018	Release Pt	1.0	**1,100**	
32 26 50	3/7/2018	Release Pt	2.0	**2,100**	caliche
32 26 50	3/7/2018	Release Pt	3.0	**2,900**	
32 26 50	3/7/2018	Release Pt	4.0	5,100	
32 26 50	3/7/2018	Release Pt	5.0	9,000	
32 26 50	3/7/2018	Release Pt	5.0	7,200	
32 26 50	3/7/2018	Road #1	0.1	46	
32 26 50	3/7/2018	Road #1	0.2	**2,500**	
32 26 50	3/7/2018	Road #1	0.5	540	caliche
32 26 50	3/7/2018	S of Release Pt	1.0	**4,400**	
32 26 50	3/7/2018	S of Release Pt	2.0	**3,500**	caliche
Closure Criteria			**0-4**	**600**	
Closure Criteria			**>4**	**20,000**	

APPENDIX A

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2014 SEP 10 PM 2:15

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): CP-1355 (East Standard South) *** Revised 09/09/14 ***	OSE FILE NUMBER(S):
WELL OWNER NAME(S): Merchants/Glenn's Water Well Service, Inc.	PHONE (OPTIONAL): 575-398-2424
WELL OWNER MAILING ADDRESS: P. O. Box 692	CITY: Tatum STATE: NM ZIP: 88267

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	26	54.8	N
LONGITUDE	103	33	58.3	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

NE1/4NW1/4SW1/4 Section 27, Township 21 South, Range 33 East on Merchants Livestock Land

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD 421	Corky Glenn	Glenn's Water Well Service, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
07/22/14	07/29/14	1,192'	1,192'	925'

COMPLETED WELL IS: (•) ARTESIAN ( ) DRY HOLE ( ) SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 582'

DRILLING FLUID: (•) AIR ( ) MUD ADDITIVES – SPECIFY:

DRILLING METHOD: (•) ROTARY ( ) HAMMER ( ) CABLE TOOL ( ) OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0'	40'	20"	16"	None	15 1/2"	.250	
0'	757'	14 3/4"	9 5/8"	Thread & Collar	8.921"	36 lbs.	none
690'	1,192'	8 3/4"	7" (502.14' Total)	Thread & Collar	6.366"	23 lbs.	1/8"
			317.96 perforated				
			on bottom of liner				

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	40'	20"	Cemented	2 yds.	Top Pour
0	757'	14 3/4"	Float and shoe cemented to surface	962	Circulated

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1355	POD NUMBER	1	TRN NUMBER	549450
LOCATION	Exp1	21S.33E.27.312			PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	4'	4'	Sand	○ Y ◉ N	
4'	28'	24'	Caliche	○ Y ◉ N	
28'	120'	92'	Sand & Clay	○ Y ◉ N	
120'	260'	140'	Red Clay	○ Y ◉ N	
260'	757'	497'	Red & Brown Shale, and Clay (some blue)	○ Y ◉ N	
757'	815'	58'	Red & Brown Shale	○ Y ◉ N	
815'	840'	25'	Blue Clay & Shale	○ Y ◉ N	
840'	925'	85'	Red and Brown Shale (some sandrock)	○ Y ◉ N	
925'	975'	50'	Watersand and Gravel	◉ Y ○ N	
975'	1,185'	210'	Watersand (brown sandrock)	◉ Y ○ N	
1,185'	1,192'	7'	Red Shale	○ Y ◉ N	
				○ Y ◉ N	
				○ Y ◉ N	
				○ Y ◉ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ◉ PUMP ○ AIR LIFT ○ BAILER ○ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

0' to 757' drilled with mud.
757' to 1192' drilled with air and foam.

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Corky Glenn — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

9/9/14 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1355	POD NUMBER	1	TRN NUMBER	549450
LOCATION	21S.33E.27.312				PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE RECEIVED 2014 AUG 18 AM 8:53

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): CP - 1355 East Standard (South)	OSE FILE NUMBER(S):
WELL OWNER NAME(S): Merchants Livestock/Glenn's Water Well Service, Inc.	PHONE (OPTIONAL): (575)398-2424
WELL OWNER MAILING ADDRESS: P.O. Box 692	CITY: Tatum STATE: NM ZIP: 88267

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	26	54.8	N
LONGITUDE	103	33	58.3	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

NE/NW/SW Sec. 27, T21S, R33E on Merchants Livestock Land

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD 421	Corky Glenn	Glenn's Water Well Service, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
7/29/14	8/2/14	1192'	1192'	925'

COMPLETED WELL IS: (•) ARTESIAN ( ) DRY HOLE ( ) SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 582'

DRILLING FLUID: ( ) AIR ( ) MUD ADDITIVES – SPECIFY:

DRILLING METHOD: (•) ROTARY ( ) HAMMER ( ) CABLE TOOL ( ) OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0'	40'	20"	16"	None	15 1/2"	.250	
0'	757'	14 3/4"	9 5/8"	Thread and Collar	.352	36 lbs.	none
757'	1192'	8 3/4'	7"	Thread and Collar	6.5"	23 lbs.	1/8"

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0'	40'	20"	Cemented	2 yds	Top Pour
0'	757'	14 3/4"	Float and Shoe Cemented to Surface	1034	Circulated

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1355	POD NUMBER	1	TRN NUMBER	549450
LOCATION	Exp1	21S.33E.27.312			PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0'	4'	4'	Soil	○ Y ◉ N	
4'	28'	24'	Caleche	○ Y ◉ N	
28'	120'	92'	Sand and Clay	○ Y ◉ N	
120'	260'	140'	Red Clay	○ Y ◉ N	
260'	757'	497'	Red and Brown Shale and Clay(some blue)	○ Y ◉ N	
757'	815'	58'	Red and Brown Shale	○ Y ◉ N	
815'	840'	25'	Blue Clay and Shale	○ Y ◉ N	
840'	925'	85'	Red and Brown Shale(some sandrock)	○ Y ◉ N	
925'	975'	50'	Watersand and Gravel	◉ Y ○ N	
975'	1185'	210'	Watersand(brown sandrock)	◉ Y ○ N	
1185'	1192'	7'	Red Shale	○ Y ◉ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ◉ PUMP ○ AIR LIFT ○ BAILER ○ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 50

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

0' to 757' drilled with mud. 757' to 1192' drilled with air and foam.

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Corky Glenn — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

8/7/14 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1355	POD NUMBER	1	TRN NUMBER	549450
LOCATION	Exp1	21S.33E.27.312			PAGE 2 OF 2

APPENDIX B

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

February 15, 2018

Randall Hicks

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: Battle 34 Fed 4H Jnct OrderNo.: 1802028

Dear Randall Hicks:

Hall Environmental Analysis Laboratory received 9 sample(s) on 2/1/2018 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 qualifiers 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: Battle 34 Fed 4H Jnct

Lab Order: 1802028

Lab ID: 1802028-001 **Collection Date:** 1/30/2018 1:09:00 PM
Client Sample ID: BH 6" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	3100	150		mg/Kg	100	2/14/2018 3:40:31 AM	36462

Lab ID: 1802028-002 **Collection Date:** 1/30/2018 1:11:00 PM
Client Sample ID: BH 12" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	95	30		mg/Kg	20	2/12/2018 2:18:35 PM	36462

Lab ID: 1802028-003 **Collection Date:** 1/30/2018 1:15:00 PM
Client Sample ID: BH 24" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	220	30		mg/Kg	20	2/12/2018 2:30:59 PM	36462

Lab ID: 1802028-004 **Collection Date:** 1/30/2018 1:56:00 PM
Client Sample ID: BH3 12" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1300	75		mg/Kg	50	2/14/2018 3:52:55 AM	36462

Lab ID: 1802028-005 **Collection Date:** 1/30/2018 1:51:00 PM
Client Sample ID: BH3 6" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	4100	150		mg/Kg	100	2/14/2018 4:05:20 AM	36462

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: Battle 34 Fed 4H Jnct

Lab Order: 1802028

Lab ID: 1802028-006 **Collection Date:** 1/30/2018 1:35:00 PM
Client Sample ID: BH2 12" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2100	75		mg/Kg	50	2/14/2018 4:17:45 AM	36462

Lab ID: 1802028-007 **Collection Date:** 1/30/2018 1:32:00 PM
Client Sample ID: BH2 6" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	6800	300		mg/Kg	200	2/14/2018 4:30:09 AM	36462

Lab ID: 1802028-008 **Collection Date:** 1/30/2018 1:35:00 PM
Client Sample ID: BH2 16" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1900	75		mg/Kg	50	2/14/2018 4:42:33 AM	36462

Lab ID: 1802028-009 **Collection Date:** 1/30/2018 2:02:00 PM
Client Sample ID: BH3 24" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1100	30		mg/Kg	20	2/12/2018 4:10:16 PM	36462

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1802028**

15-Feb-18

Client: R.T. Hicks Consultants, LTD

Project: Battle 34 Fed 4H Jnct

Sample ID	**MB-36462**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**36462**	RunNo:	**49047**					
Prep Date:	**2/12/2018**	Analysis Date:	**2/12/2018**	SeqNo:	**1579653**	Units:	**mg/Kg**			

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

Sample ID	**LCS-36462**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**36462**	RunNo:	**49047**					
Prep Date:	**2/12/2018**	Analysis Date:	**2/12/2018**	SeqNo:	**1579654**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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: RT HICKS | Work Order Number: 1802028 | RcptNo: 1

Received By: Erin Melendrez 2/1/2018 10:19:00 AM

Completed By: Erin Melendrez 2/1/2018 11:29:07 AM

Reviewed By: DDS 2/1/18

Labeled By: SRee 02/01/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. 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)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Not Present			

Chain-of-Custody Record

Client: ADVANCE FRAC
RT Hicks Consult

Mailing Address:

Phone #: 505-238-9515

email or Fax#: RC@rthicksconsult.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: BATTLE 34 FED 4H JNCT

Project #:

Project Manager: Randall Hicks

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.8-1.0(CF)=0.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1802028	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride				Air Bubbles (Y or N)
1/30	1309	Soil	BH 6"	1 GLASS		-001												X				
	1311		BH 12"			-002												X				
	1315		BH 24"			-003												X				
	1356		BH3 12"			-004												X				
	1351		BH 3 6"			-005												X				
	1335		BH2 12"			-006												X				
	1332		BH2 6"			-007												X				
	1335		BH2 16"			-008												X				
↓	1402	↓	BH 3 24"	↓		-009												X				

Date	Time	Relinquished by	Received by	Date	Time
2/1	10/19	Randall Hicks		2/1/18	1019
Date	Time	Relinquished by	Received by	Date	Time

Remarks

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

March 28, 2018

Randall Hicks

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: BATTLE OrderNo.: 1803616

Dear Randall Hicks:

Hall Environmental Analysis Laboratory received 18 sample(s) on 3/9/2018 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 qualifiers 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: BATTLE
Lab Order: 1803616

Lab ID: 1803616-001 **Collection Date:** 3/6/2018 2:59:00 PM
Client Sample ID: T1 on Rd 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	5100	300		mg/Kg	200	3/21/2018 5:11:43 AM	37103

Lab ID: 1803616-002 **Collection Date:** 3/6/2018 3:01:00 PM
Client Sample ID: T1 on Rd 2 Ft Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/20/2018 12:38:57 PM	37127

Lab ID: 1803616-003 **Collection Date:** 3/6/2018 3:03:00 PM
Client Sample ID: T1 on Rd 3 Ft Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	320	30		mg/Kg	20	3/20/2018 12:51:22 PM	37127

Lab ID: 1803616-004 **Collection Date:** 3/6/2018 3:14:00 PM
Client Sample ID: T2 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	1600	75		mg/Kg	50	3/23/2018 5:36:05 PM	37127

Lab ID: 1803616-005 **Collection Date:** 3/6/2018 3:15:00 PM
Client Sample ID: T2 1 Ft Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	290	30		mg/Kg	20	3/20/2018 2:05:49 PM	37127

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: BATTLE
Lab Order: 1803616

Lab ID: 1803616-006 **Collection Date:** 3/6/2018 3:39:00 PM
Client Sample ID: T3 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	310	30		mg/Kg	20	3/20/2018 2:18:13 PM	37127

Lab ID: 1803616-007 **Collection Date:** 3/6/2018 3:38:00 PM
Client Sample ID: T3 2 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/20/2018 2:30:38 PM	37127

Lab ID: 1803616-008 **Collection Date:** 3/6/2018 3:36:00 PM
Client Sample ID: T3 3 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	47	30		mg/Kg	20	3/20/2018 2:43:03 PM	37127

Lab ID: 1803616-009 **Collection Date:** 3/6/2018 3:34:00 PM
Client Sample ID: T3 4 Ft Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	200	30		mg/Kg	20	3/20/2018 2:55:28 PM	37127

Lab ID: 1803616-010 **Collection Date:** 3/6/2018 3:56:00 PM
Client Sample ID: T4 S 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/20/2018 3:07:53 PM	37127

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: BATTLE
Lab Order: 1803616

Lab ID: 1803616-011 **Collection Date:** 3/6/2018 3:54:00 PM
Client Sample ID: T4 S 2 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	35	30		mg/Kg	20	3/20/2018 3:20:17 PM	37127

Lab ID: 1803616-012 **Collection Date:** 3/6/2018 3:58:00 PM
Client Sample ID: T4 N 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	7200	300		mg/Kg	200	3/23/2018 5:48:30 PM	37127

Lab ID: 1803616-013 **Collection Date:** 3/6/2018 4:00:00 PM
Client Sample ID: T4 N 2 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	6000	300		mg/Kg	200	3/23/2018 6:00:54 PM	37127

Lab ID: 1803616-014 **Collection Date:** 3/6/2018 4:01:00 PM
Client Sample ID: T4 Mid 5 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	10000	750		mg/Kg	500	3/23/2018 6:13:18 PM	37127

Lab ID: 1803616-015 **Collection Date:** 3/6/2018 4:06:00 PM
Client Sample ID: T4 Mid 6 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	77	30		mg/Kg	20	3/20/2018 4:59:34 PM	37127

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: BATTLE
Lab Order: 1803616

Lab ID: 1803616-016 **Collection Date:** 3/6/2018 4:08:00 PM
Client Sample ID: T4 Mid 7 Ft Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	900	30		mg/Kg	20	3/20/2018 5:11:59 PM	37127

Lab ID: 1803616-017 **Collection Date:** 3/6/2018 4:18:00 PM
Client Sample ID: T5 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	2700	75		mg/Kg	50	3/23/2018 6:50:32 PM	37127

Lab ID: 1803616-018 **Collection Date:** 3/6/2018 4:22:00 PM
Client Sample ID: T5 2 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/20/2018 5:36:47 PM	37127

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803616**

28-Mar-18

Client: R.T. Hicks Consultants, LTD

Project: BATTLE

Sample ID	**MB-37103**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**37103**	RunNo:	**49922**				
Prep Date:	**3/19/2018**	Analysis Date:	**3/19/2018**	SeqNo:	**1616189**	Units:	**mg/Kg**		

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

Sample ID	**LCS-37103**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**37103**	RunNo:	**49922**				
Prep Date:	**3/19/2018**	Analysis Date:	**3/19/2018**	SeqNo:	**1616190**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.1	90	110			

Sample ID	**MB-37127**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**37127**	RunNo:	**49932**				
Prep Date:	**3/20/2018**	Analysis Date:	**3/20/2018**	SeqNo:	**1617478**	Units:	**mg/Kg**		

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

Sample ID	**LCS-37127**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**37127**	RunNo:	**49932**				
Prep Date:	**3/20/2018**	Analysis Date:	**3/20/2018**	SeqNo:	**1617479**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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: RT HICKS | Work Order Number: **1803616** | RcptNo: 1

Received By: **Anne Thorne** 3/9/2018 1:05:00 PM

Completed By: **Erin Melendrez** 3/12/2018 11:32:23 AM

Reviewed By: JMO 3/12/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: ____ (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

15. 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: ____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	20.9	Good	Not Present			

Chain-of-Custody Record

Client: R.T. Hicks Consultants

Mailing Address: 901 Rio Grande NW F-142
Albuquerque NM 98104

Phone #: 505 238 9515

email or Fax#: r@rthicksconsult.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☐ Rush _____

Project Name: BATTLE

Project #:

Project Manager: Randall Hicks

Sampler: RTH
On Ice: ☐ Yes ☑ No
Sample Temperature: 20.7

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1803616	Chloride	Air Bubbles (Y or N)
3/6/2018	1459	Soil	T1 on Rd 1 ft			-001	x	
3/6/2018	1501	Soil	T1 on Rd 2 ft caliche			-002	x	
3/6/2018	1503	Soil	T1 on Rd 3 ft caliche			-003	x	
3/6/2018	1514	Soil	T2 1 ft			-004	x	
3/6/2018	1515	Soil	T2 1 ft caliche			-005	x	
3/6/2018	1539	Soil	T3 1 foot			-006	x	
3/6/2018	1538	Soil	T3 2 ft			-007	x	
3/6/2018	1536	Soil	T3 3 ft			-008	x	
3/6/2018	1534	Soil	T3 4 ft caliche			-009	x	
3/6/2018	1556	Soil	T4 S 1 ft			-010	x	
3/6/2018	1554	Soil	T4 S 2 ft			-011	x	
3/6/2018	1558	Soil	T4 N 1 ft			-012	x	

Date	Time	Relinquished by	Received by	Date	Time
3/9/18	1305	Randall			
				03/09/18	1305

Remarks:

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

Chain-of-Custody Record

Client: R.T. Hicks Consultants

Mailing Address: 901 Rio Grande NW F-142
Albuquerque NM 98104

Phone #: 505 238 9515

email or Fax#: r@rthicksconsult.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: BATTLE

Project #:

Project Manager: Randall Hicks

Sampler: RTH
On Ice: ☐ Yes ☒ No
Sample Temperature: 20.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1803616	Chloride	Air Bubbles (Y or N)
3/6/2018	1600	Soil	T4 N 2 ft			-013	x	
3/6/2018	1601	Soil	T4 Mid 5 ft			-014	x	
3/6/2018	1606	Soil	T4 Mid 6 ft			-015	x	
3/6/2018	1608	Soil	T4 mid 7 ft caliche			-016	x	
3/6/2018	1618	Soil	T5 1 ft			-017	x	
3/6/2018	1622	Soil	T5 2 ft			-018	x	
3/6/2018		Soil					x	
3/6/2018		Soil					x	
3/6/2018		Soil					x	
3/6/2018		Soil					x	
3/6/2018		Soil					x	
3/6/2018		Soil					x	
3/6/2018		Soil					x	

Date	Time	Relinquished by:	Received by:	Date	Time
3/9/18	1305	Randall Hicks		03/07/18	1305

Remarks:

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

February 19, 2018

Randall Hicks

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: West of MP Jnct OrderNo.: 1802042

Dear Randall Hicks:

Hall Environmental Analysis Laboratory received 3 sample(s) on 2/1/2018 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 qualifiers 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: **1802042**
Date Reported: **2/19/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: West of MP Jnct
Lab Order: 1802042

Lab ID: 1802042-001 **Collection Date:** 1/30/2018 3:19:00 PM
Client Sample ID: BH1 6" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	3300	150		mg/Kg	100	2/14/2018 4:54:58 AM	36462

Lab ID: 1802042-002 **Collection Date:** 1/30/2018 3:23:00 PM
Client Sample ID: BH1 12" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	3600	150		mg/Kg	100	2/14/2018 5:07:23 AM	36462

Lab ID: 1802042-003 **Collection Date:** 1/30/2018 3:27:00 PM
Client Sample ID: BH1 24" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	5100	300		mg/Kg	200	2/16/2018 5:27:47 PM	36495

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1802042**

19-Feb-18

Client: R.T. Hicks Consultants, LTD

Project: West of MP Jnct

Sample ID	**MB-36462**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**36462**		RunNo:	**49047**				
Prep Date:	**2/12/2018**	Analysis Date:	**2/12/2018**		SeqNo:	**1579653**	Units:	**mg/Kg**		

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

Sample ID	**LCS-36462**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**36462**		RunNo:	**49047**				
Prep Date:	**2/12/2018**	Analysis Date:	**2/12/2018**		SeqNo:	**1579654**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.9	90	110			

Sample ID	**MB-36495**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**36495**		RunNo:	**49085**				
Prep Date:	**2/13/2018**	Analysis Date:	**2/13/2018**		SeqNo:	**1583564**	Units:	**mg/Kg**		

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

Sample ID	**LCS-36495**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**36495**		RunNo:	**49085**				
Prep Date:	**2/13/2018**	Analysis Date:	**2/13/2018**		SeqNo:	**1583565**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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: RT HICKS | Work Order Number: 1802042 | RcptNo: 1

Received By: **Erin Melendrez** 2/1/2018 10:25:00 AM

Completed By: **Erin Melendrez** 2/1/2018 1:35:55 PM

Reviewed By: BRE 02/01/18

Labelled By: PDS

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: ____ (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: ____

Special Handling (if applicable)

15. 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: ____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.8	Good	Not Present			

Chain-of-Custody Record

Client: ADVANCE FRAC

R THICKS Consulting

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: West of MP Jnct

Project #:

Project Manager: Randall Hicks

Sampler:

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.8-1.0(cf) = 0.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1802042	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	chloride				Air Bubbles (Y or N)
1/30	1519	Soil	BH 1 6"	1 Glass		-001												X				
"	1523	"	BH #1 12"	"		-002												X				
"	1527	"	~~BH 2~~ 24"	"		-003												X				
			BH 1 DDS as per RH 2/1/18																			

Date	Time	Relinquished by	Received by	Date	Time
1/31	1025			2/1/18	1025
Date	Time	Relinquished by	Received by	Date	Time

Remarks:

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

March 26, 2018

Randall Hicks

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: W OF MP OrderNo.: 1803589

Dear Randall Hicks:

Hall Environmental Analysis Laboratory received 22 sample(s) on 3/9/2018 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 qualifiers 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: W OF MP
Lab Order: 1803589

Lab ID: 1803589-001 **Collection Date:** 3/6/2018 1:21:00 PM
Client Sample ID: T1 @ Jnct 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	3100	150		mg/Kg	100	3/21/2018 2:55:12 AM	37083

Lab ID: 1803589-002 **Collection Date:** 3/6/2018 1:24:00 PM
Client Sample ID: T1 @ Jnct 2 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	3700	150		mg/Kg	100	3/21/2018 3:07:37 AM	37083

Lab ID: 1803589-003 **Collection Date:** 3/6/2018 1:26:00 PM
Client Sample ID: T1 @ Jnct 3 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	5300	150		mg/Kg	100	3/21/2018 3:20:02 AM	37083

Lab ID: 1803589-004 **Collection Date:** 3/6/2018 1:28:00 PM
Client Sample ID: T1 @ Jnct 4 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	8700	750		mg/Kg	500	3/21/2018 3:32:26 AM	37085

Lab ID: 1803589-005 **Collection Date:** 3/6/2018 1:31:00 PM
Client Sample ID: T1 @ Jnct 5 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1700	75		mg/Kg	50	3/21/2018 3:44:50 AM	37085

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: W OF MP
Lab Order: 1803589

Lab ID: 1803589-006 **Collection Date:** 3/6/2018 1:33:00 PM
Client Sample ID: T1 @ Jnct 6 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	290	30		mg/Kg	20	3/18/2018 6:29:47 PM	37085

Lab ID: 1803589-007 **Collection Date:** 3/6/2018 1:38:00 PM
Client Sample ID: T1 @ Jnct 6 Ft Merchant **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	750	30		mg/Kg	20	3/18/2018 6:42:12 PM	37085

Lab ID: 1803589-008 **Collection Date:** 3/6/2018 1:40:00 PM
Client Sample ID: T1 @ Jnct 7 Ft Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	390	30		mg/Kg	20	3/18/2018 6:54:37 PM	37085

Lab ID: 1803589-009 **Collection Date:** 3/6/2018 1:58:00 PM
Client Sample ID: T2 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2300	150		mg/Kg	100	3/21/2018 3:57:15 AM	37085

Lab ID: 1803589-010 **Collection Date:** 3/6/2018 1:56:00 PM
Client Sample ID: T2 2 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1900	75		mg/Kg	50	3/21/2018 4:34:28 AM	37085

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: W OF MP
Lab Order: 1803589

Lab ID: 1803589-011 **Collection Date:** 3/6/2018 1:54:00 PM
Client Sample ID: T2 3 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	3900	150		mg/Kg	100	3/21/2018 4:46:53 AM	37085

Lab ID: 1803589-012 **Collection Date:** 3/6/2018 1:52:00 PM
Client Sample ID: T2 4 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	72	30		mg/Kg	20	3/18/2018 8:33:52 PM	37085

Lab ID: 1803589-013 **Collection Date:** 3/6/2018 2:03:00 PM
Client Sample ID: T2 4.5 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1200	30		mg/Kg	20	3/18/2018 8:46:16 PM	37085

Lab ID: 1803589-014 **Collection Date:** 3/6/2018 2:28:00 PM
Client Sample ID: T3 1 Ft Merchant **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/18/2018 8:58:41 PM	37085

Lab ID: 1803589-015 **Collection Date:** 3/6/2018 2:13:00 PM
Client Sample ID: T3 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/18/2018 9:11:06 PM	37085

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: W OF MP
Lab Order: 1803589

Lab ID: 1803589-016 **Collection Date:** 3/6/2018 2:15:00 PM
Client Sample ID: T3 2 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/18/2018 9:23:31 PM	37085

Lab ID: 1803589-017 **Collection Date:** 3/6/2018 2:18:00 PM
Client Sample ID: T4 1 Ft on Side Rd **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/18/2018 9:35:56 PM	37085

Lab ID: 1803589-018 **Collection Date:** 3/6/2018 2:20:00 PM
Client Sample ID: T4 2 Ft on Side Rd **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/18/2018 9:48:21 PM	37085

Lab ID: 1803589-019 **Collection Date:** 3/6/2018 2:36:00 PM
Client Sample ID: T5 1 Ft S **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/18/2018 10:00:45 PM	37085

Lab ID: 1803589-020 **Collection Date:** 3/6/2018 2:37:00 PM
Client Sample ID: T5 2 Ft S **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	35	30		mg/Kg	20	3/18/2018 10:13:10 PM	37085

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: W OF MP

Lab Order: 1803589

Lab ID: 1803589-021 **Collection Date:** 3/6/2018 1:41:00 PM
Client Sample ID: T6 1 Ft N **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/18/2018 10:25:35 PM	37085

Lab ID: 1803589-022 **Collection Date:** 3/6/2018 1:42:00 PM
Client Sample ID: T6 2 Ft N **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/18/2018 11:02:49 PM	37085

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803589**

26-Mar-18

Client: R.T. Hicks Consultants, LTD

Project: W OF MP

Sample ID	**MB-37085**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**37085**	RunNo:	**49914**					
Prep Date:	**3/18/2018**	Analysis Date:	**3/18/2018**	SeqNo:	**1615651**	Units:	**mg/Kg**			

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

Sample ID	**LCS-37085**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**37085**	RunNo:	**49914**					
Prep Date:	**3/18/2018**	Analysis Date:	**3/18/2018**	SeqNo:	**1615652**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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: RT HICKS | Work Order Number: 1803589 | RcptNo: 1

Received By: Anne Thorne 3/9/2018 1:05:00 PM

Completed By: Erin Melendrez 3/12/2018 8:21:22 AM

Reviewed By: JMO 3/12/18 labeled by: ERY

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

15. 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:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	20.9	Good	Not Present			

Chain-of-Custody Record

Client:	R.T. Hicks Consultants
Mailing Address	901 Rio Grande NW F-142 Albuquerque NM 98104
Phone #:	505 238 9515
email or Fax#:	r@rthicksconsult.com
QA/QC Package:	☒ Standard ☐ Level 4 (Full Validation)
Accreditation:	☐ NELAP ☐ Other _____
☐ EDD (Type)	_____

Turn-Around Time: ☐ Standard ☐ Rush _____

Project Name: W OF MP

Project #:

Project Manager: Randall Hicks

Sampler:

On Ice: ☐ Yes ☒ No

Sample Temperature: 20.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1803589	Chloride	Air Bubbles (Y or N)
3/5/2018	1321	Soil	T1 @ Jnct 1 ft	1 glass		-001	x	
3/5/2018	1324	Soil	T1 @ Jnct 2 ft	1 glass		-002	x	
3/5/2018	1326	Soil	T1 @ Junct 3 ft	1 glass		-003	x	
3/5/2018	1328	Soil	T1 @ Jnct 4 ft	1 glass		-004	x	
3/5/2018	1331	Soil	T1 @ Jnct 5 ft	1 glass		-005	x	
3/5/2018	1333	Soil	T1 @ Jnct 6 ft	1 glass		-006	x	
3/5/2018	1338	Soil	T1 @ Jnct 6 ft Merchant	1 glass		-007	x	
3/5/2018	1340	Soil	T1 @ Jnct 7 ft caliche	1 glass		-008	x	
3/6/2018	1358	Soil	T2 1 ft	1 glass		-009	x	
3/6/2018	1356	Soil	T2 2 ft	1 glass		-010	x	
3/6/2018	1354	Soil	T2 3 ft	1 glass		-011	x	
3/6/2018	1352	Soil	T2 4 ft	1 glass		-012	x	

Date	Time	Relinquished by	Received by	Date	Time	Remarks:
3/9/18	1305			03/09/18	1305	
Date:	Time:	Relinquished by:	Received by:	Date	Time	

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

t

Client:	R.T. Hicks Consultants
Mailing Address	901 Rio Grande NW F-142
	Albuquerque NM 98104
Phone #:	505 238 9515
email or Fax#:	r@rthicksconsult.com
QA/QC Package:	
☒ Standard	☐ Level 4 (Full Validation)
Accreditation:	
☐ NELAP	☐ Other
☐ EDD (Type)	

Turn-Around Time:	
☐ Standard	☐ Rush
Project Name:	W OF MP
Project #:	
Project Manager:	Randall Hicks
Sampler:	
On Ice:	☐ Yes ☒ No
Sample Temperature:	21.7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	Chloride	Air Bubbles (Y or N)
3/6/2018	1403	Soil	T2 4.5 ft	1 glass		-013	x	
3/6/2018	1428	Soil	T3 1 ft Merchant	1 glass		-014	x	
3/6/2018	1413	Soil	T3 1 ft	1 glass		-015	x	
3/6/2018	1415	Soil	T3 2 ft	1 glass		-016	x	
3/6/2018		Soil		1 glass			x	
3/6/2018		Soil		1 glass			x	
3/6/2018	1418	Soil	t4 1 ft on side rd	1 glass		-017	x	
3/6/2018	1420		T4 2ft on side rd	1 glass		-018	x	
3/6/2018	1436	Soil	T 5 1 ft S	1 glass		-019	x	
3/5/2018	1437	Soil	T5 2 ft S	1 glass		-020	x	
3/6/2018	1341	Soil	T6 1ft N	1 glass		-021	x	
3/5/2018	1342	Soil	T6 2 ft N	1 glass		-022	x	

Date	Time	Relinquished by	Received by	Date	Time
3/9/18	1305	Randall Hicks			
				03/09/18	1305
Date	Time	Relinquished by	Received by	Date	Time

Remarks:

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

February 15, 2018

Randall Hicks

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: 32 26 50 / 103 33 50 OrderNo.: 1802026

Dear Randall Hicks:

Hall Environmental Analysis Laboratory received 5 sample(s) on 2/1/2018 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 qualifiers 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: 32 26 50 / 103 33 50

Lab Order: 1802026

Lab ID: 1802026-001 **Collection Date:** 1/30/2018 2:51:00 PM
Client Sample ID: BH2 6" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	5200	300		mg/Kg	200	2/14/2018 2:26:03 AM	36462

Lab ID: 1802026-002 **Collection Date:** 1/30/2018 2:57:00 PM
Client Sample ID: BH2 12" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	5400	300		mg/Kg	200	2/14/2018 2:38:28 AM	36462

Lab ID: 1802026-003 **Collection Date:** 1/30/2018 3:02:00 PM
Client Sample ID: BH2 24" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	5500	300		mg/Kg	200	2/14/2018 2:50:52 AM	36462

Lab ID: 1802026-004 **Collection Date:** 1/30/2018 2:32:00 PM
Client Sample ID: BH1 6" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	840	30		mg/Kg	20	2/12/2018 1:41:21 PM	36462

Lab ID: 1802026-005 **Collection Date:** 1/30/2018 2:37:00 PM
Client Sample ID: BH1 12" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2900	75		mg/Kg	50	2/14/2018 3:03:17 AM	36462

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1802026**

15-Feb-18

Client: R.T. Hicks Consultants, LTD

Project: 32 26 50 / 103 33 50

Sample ID	**MB-36462**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**36462**	RunNo:	**49047**					
Prep Date:	**2/12/2018**	Analysis Date:	**2/12/2018**	SeqNo:	**1579653**	Units:	**mg/Kg**			

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

Sample ID	**LCS-36462**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**36462**	RunNo:	**49047**					
Prep Date:	**2/12/2018**	Analysis Date:	**2/12/2018**	SeqNo:	**1579654**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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: RT HICKS | Work Order Number: 1802026 | RcptNo: 1

Received By: Erin Melendrez 2/1/2018 10:09:00 AM

Completed By: Erin Melendrez 2/1/2018 11:10:09 AM

Reviewed By: DDS 2/1/18

Labeled By: SRE 02/01/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

15. 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:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.8	Good	Not Present			

Chain-of-Custody Record

Client: ADVANCE FRAC

Mailing Address: RT Hicks Consult

Phone #: 505-238-9515

email or Fax#: R@rthickscons.lt.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☐ Rush _____

Project Name: 32 26 50 / 103 33 50

Project #:

Project Manager: RT Hicks

Sampler:

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.8-1.0(F)=0.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1802026	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride				Air Bubbles (Y or N)
1/30	1451	Soil	BH2 6"	1 Glass	/	-001												X				
"	1457	"	BH2 12"			-002												X				
	1502		BH 24"			-003												X				
	[illegible]																	X				
	1432		BH1 6"			-004												X				
↓	1437	↓	BH1 12"	↓		-005												X				

Date	Time	Relinquished by	Received by	Date	Time
2/1	1009	[signature]	[signature]	2/1/18	1009

Remarks:

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

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

March 22, 2018

Randall Hicks

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: 32 26 50 OrderNo.: 1803615

Dear Randall Hicks:

Hall Environmental Analysis Laboratory received 16 sample(s) on 3/9/2018 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 qualifiers 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: 32 26 50
Lab Order: 1803615

Lab ID: 1803615-001 **Collection Date:** 3/7/2018 10:31:00 AM
Client Sample ID: Release Pt 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1100	75		mg/Kg	50	3/21/2018 5:36:32 AM	37103

Lab ID: 1803615-002 **Collection Date:** 3/7/2018 10:32:00 AM
Client Sample ID: Release Pt 2 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2100	75		mg/Kg	50	3/21/2018 5:48:57 AM	37103

Lab ID: 1803615-003 **Collection Date:** 3/7/2018 10:33:00 AM
Client Sample ID: Release Pt 3 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2900	150		mg/Kg	100	3/21/2018 6:01:21 AM	37103

Lab ID: 1803615-004 **Collection Date:** 3/7/2018 10:34:00 AM
Client Sample ID: Release Pt 4 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	5100	150		mg/Kg	100	3/21/2018 6:13:45 AM	37103

Lab ID: 1803615-005 **Collection Date:** 3/7/2018 10:37:00 AM
Client Sample ID: Release Pt 5 Ft Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	9000	750		mg/Kg	500	3/21/2018 6:26:10 AM	37103

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: 32 26 50
Lab Order: 1803615

Lab ID: 1803615-006 **Collection Date:** 3/7/2018 10:44:00 AM
Client Sample ID: Release Pt 5 Ft Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	7200	300		mg/Kg	200	3/21/2018 7:03:24 AM	37103

Lab ID: 1803615-007 **Collection Date:** 3/7/2018 10:55:00 AM
Client Sample ID: Flowpath Dune 1 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	720	30		mg/Kg	20	3/19/2018 9:31:56 PM	37103

Lab ID: 1803615-008 **Collection Date:** 3/7/2018 10:57:00 AM
Client Sample ID: Flowpath Dune 3 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/19/2018 9:44:20 PM	37103

Lab ID: 1803615-009 **Collection Date:** 3/7/2018 10:56:00 AM
Client Sample ID: Flowpath Dune 2 Ft **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/19/2018 9:56:44 PM	37103

Lab ID: 1803615-010 **Collection Date:** 3/7/2018 10:01:00 AM
Client Sample ID: Road #1 1 inch Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	46	30		mg/Kg	20	3/19/2018 10:09:09 PM	37103

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: 32 26 50
Lab Order: 1803615

Lab ID: 1803615-011 **Collection Date:** 3/7/2018 10:02:00 AM
Client Sample ID: Road #1 2 inch Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2500	75		mg/Kg	50	3/21/2018 7:15:48 AM	37103

Lab ID: 1803615-012 **Collection Date:** 3/7/2018 10:04:00 AM
Client Sample ID: Road #1 6 inch Caliche **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	540	30		mg/Kg	20	3/19/2018 11:23:38 PM	37103

Lab ID: 1803615-013 **Collection Date:** 3/7/2018 11:52:00 AM
Client Sample ID: Rd NW 1' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	120	30		mg/Kg	20	3/19/2018 11:36:03 PM	37103

Lab ID: 1803615-014 **Collection Date:** 3/7/2018 11:51:00 AM
Client Sample ID: Rd NW 6" **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1500	75		mg/Kg	50	3/21/2018 7:28:13 AM	37103

Lab ID: 1803615-015 **Collection Date:** 3/7/2018 12:09:00 PM
Client Sample ID: S of Release Pt 1' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	4400	300		mg/Kg	200	3/21/2018 7:40:37 AM	37103

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Project: 32 26 50

Lab Order: 1803615

Lab ID: 1803615-016
Collection Date: 3/7/2018 12:12:00 PM
Client Sample ID: S of Release Pt 2'
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	3500	150		mg/Kg	100	3/21/2018 7:53:02 AM	37103

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803615**

22-Mar-18

Client: R.T. Hicks Consultants, LTD

Project: 32 26 50

Sample ID	**MB-37103**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**37103**	RunNo:	**49922**					
Prep Date:	**3/19/2018**	Analysis Date:	**3/19/2018**	SeqNo:	**1616189**	Units:	**mg/Kg**			

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

Sample ID	**LCS-37103**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**37103**	RunNo:	**49922**					
Prep Date:	**3/19/2018**	Analysis Date:	**3/19/2018**	SeqNo:	**1616190**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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: RT HICKS | Work Order Number: **1803615** | RcptNo: 1

Received By: **Anne Thorne** 3/9/2018 1:05:00 PM

Completed By: **Erin Melendrez** 3/12/2018 11:13:25 AM

Reviewed By: IMO 3/12/18 labeled by: AR

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. 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)

15. 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: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	20.9	Good	Not Present			

Chain-of-Custody Record

Client: R.T. Hicks Consultants

Mailing Address: 901 Rio Grande NW F-142
Albuquerque NM 98104

Phone #: 505 238 9515

email or Fax#: r@rthicksconsult.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: 32 26 50

Project #:

Project Manager: Randall Hicks

Sampler: RTH
On Ice: ☐ Yes ☒ No
Sample Temperature: 20.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 803615	Chloride	Air Bubbles (Y or N)
3/7/2018	1031	Soil	Release Pt 1 ft	1 glass		-001	x	
3/7/2018	1032	Soil	Release Pt 2 ft	1 glass		-002	x	
3/7/2018	1033	Soil	Release Pt 3 ft	1 glass		-003	x	
3/7/2018	1034	Soil	Release Pt 4 ft	1 glass		-004	x	
3/7/2018	1037	Soil	Release Pt 5 ft caliche	1 glass		-005	x	
3/7/2018	1044	Soil	Release Pt 5 ft caliche	1 glass		-006	x	
3/7/2018	1055	Soil	Flowpath Dune 1 ft	1 glass		-007	x	
3/7/2018	1057	Soil	Flowpath Dune 3 ft	1 glass		-008	x	
3/7/2018	1056	Soil	Flowpath Dune 2 ft	1 glass		-009	x	
3/7/2018	1001	Soil	Road #1 1 inch caliche	1 glass		-010	x	
3/7/2018	1002	Soil	Road #1 2 inch caliche	1 glass		-011	x	
3/7/2018	1004	Soil	Road #1 6 inch caliche	1 glass		-012	x	

Date	Time	Relinquished by	Received by	Date	Time
03/08/18	1305	Randall Hicks		03/08/18	1305

Remarks:

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.

Chain-of-Custody Record

Client: R. Hicks

Mailing Address:

Phone #:

email or Fax#: R@rthicksconsult.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: 32 2650

Project #: Randall Hicks

Project Manager:

Sampler: RTH

On Ice: ☐ Yes ☒ No

Sample Temperature: 20.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1803615
3/7/18	1152	Soil	Rd NW 1'	1 glass		-013
	1151		Rd NW 6"			-014
	1209		S of Release Pt 1'			-015
	1212		S of Release Pt 2'			-016

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride				Air Bubbles (Y or N)
											X				
											X				
											X				
											X				

Date	Time	Relinquished by	Received by	Date	Time
3/8/18	1305	Randall Hicks			
				03/09/18	1305
Date	Time	Relinquished by	Received by	Date	Time

Remarks:

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