|                                |                                        | SIT                                                                                                            | E INFOR                                 | MATION                  |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | stalitiga Biritalitiga Biritaliti      | Report                                                                                                         | Type: Cl                                | osure Re                | port                                 |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| General Site Info              | rmation:                               |                                                                                                                |                                         |                         | S POS                                |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Site:                          |                                        | Willow A Sta                                                                                                   | te #3                                   |                         |                                      |                                                                                                                  |                         | an a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Company:                       |                                        | COG Operati                                                                                                    | ing LLC                                 |                         |                                      |                                                                                                                  |                         | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Section, Townsh                | ip and Range                           | Unit J                                                                                                         | Sec 3                                   | T25S                    | R28E                                 |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Lease Number:                  |                                        | API-30-015-3                                                                                                   | 3371                                    |                         |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| County:                        |                                        | Eddy County                                                                                                    | /                                       |                         | · ·                                  |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| GPS:                           |                                        |                                                                                                                | 32.15771° N                             |                         |                                      | 10                                                                                                               | 4.07320                 | )° W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Surface Owner:                 |                                        | State                                                                                                          |                                         |                         | -                                    |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Mineral Owner:                 |                                        |                                                                                                                |                                         |                         |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Directions:                    |                                        |                                                                                                                | the Texas, Never road and trave         |                         |                                      |                                                                                                                  |                         | for 11.1 miles. Turn<br>f road.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                |                                        |                                                                                                                |                                         |                         |                                      |                                                                                                                  |                         | ·····                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                | ······································ |                                                                                                                |                                         | 1                       | 1 Main Star - Mart                   | with the second second                                                                                           | THENES, M.Y.            | Prof & Prove 1. Marthan Proc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Release Data: 👔                |                                        |                                                                                                                |                                         |                         |                                      | Sec. 3.                                                                                                          |                         | tation of a second as                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Date Released:                 |                                        | 1/16/2013                                                                                                      |                                         |                         |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Type Release:                  |                                        |                                                                                                                | ter with skim o                         | oil                     |                                      | <u></u>                                                                                                          |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Source of Contar               | nination:                              | Flowline failu                                                                                                 | re                                      |                         |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Fluid Released:                |                                        | 75 bbls                                                                                                        |                                         |                         |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Fluids Recovered               |                                        | 0 bbis                                                                                                         | TON JOHNSON IN THE LASSING              | S                       | PENDENSE AN INTEL 1997               | an and a state of the second | N" THE NORMATING STREET | 1791 Harter A. Access and Static Areas and a Contractor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Official Commun                | iication:                              |                                                                                                                | ter |                         |                                      |                                                                                                                  | e- # 64.5 - 4           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Name:                          | Pat Ellis                              |                                                                                                                |                                         |                         | lke Tavai                            | rez                                                                                                              |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Company:                       | COG Operating, LL                      | C ·                                                                                                            |                                         |                         | Tetra Teo                            | ch                                                                                                               |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Address:                       | One Concho Center                      | r                                                                                                              |                                         |                         | 1910 N. I                            | Big Spring                                                                                                       |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                | 600 W. Illinois Ave.                   | •                                                                                                              |                                         |                         |                                      |                                                                                                                  |                         | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| City:                          | Midland Texas, 797                     | 01                                                                                                             |                                         |                         | Midland,                             | Toyas                                                                                                            |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Phone number:                  | (432) 686-3023                         |                                                                                                                |                                         |                         |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                |                                        |                                                                                                                |                                         |                         | (432) 682                            | 2-4009                                                                                                           | ·····                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Fax:                           | (432) 684-7137                         |                                                                                                                |                                         |                         |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Email:                         | pellis@conchoresou                     | Irces.com                                                                                                      |                                         |                         | <u>ike.tavar</u>                     | rez@tetrat                                                                                                       | tech.cor                | <u>n</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                |                                        |                                                                                                                |                                         | an River and Street and | Ador A                               |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Depth to Groundw<br><50 ft     | ater:                                  |                                                                                                                | Ranking Scol                            | e                       |                                      | <u>Site D</u><br>20                                                                                              |                         | <u></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <50 ft                         |                                        |                                                                                                                | <u>20</u>                               | <u>_</u>                | ·                                    | 20                                                                                                               |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| >100 ft.                       |                                        |                                                                                                                | 0                                       |                         |                                      | <u></u>                                                                                                          |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                |                                        |                                                                                                                | ·                                       |                         |                                      | •                                                                                                                |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| WellHead Protection            | on:                                    |                                                                                                                | Ranking Scor                            | e                       |                                      | Site D                                                                                                           | ata                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                | 00 ft., Private <200 ft                |                                                                                                                | 20                                      |                         |                                      | ·                                                                                                                |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Water Source >1,0              | 00 ft., Private >200 ft                |                                                                                                                | 0                                       |                         |                                      | 0                                                                                                                |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| Surface Body of W              | ater:                                  |                                                                                                                | Ranking Scol                            | ·e .                    |                                      | Site D                                                                                                           | ata                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <200 ft.<br>200 ft - 1,000 ft. | <u> </u>                               |                                                                                                                | 10                                      |                         |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| >1,000 ft.                     |                                        |                                                                                                                | 0                                       |                         |                                      | 0                                                                                                                |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| Tot                            | al Ranking Score:                      |                                                                                                                | 20                                      |                         | <del>; .</del>                       | 1                                                                                                                | ECEI<br>AN 24           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                |                                        | Construction of the second | ble Soil RRA                            |                         | <u>, 1</u>                           | 1                                                                                                                |                         | l                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                |                                        | Benzene                                                                                                        | Total BTE                               |                         | _                                    | ANARC                                                                                                            | )<br>)<br>)<br>)        | DTESIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1                              |                                        | 10                                                                                                             | 50                                      | 100                     |                                      |                                                                                                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



September 13, 2013

Mr. Mike Bratcher Environmental Engineer Specialist Oil Conservation Division, District 2 811 S. First Street Artesia, New Mexico 88210

# Re: Closure Report for the COG Operating LLC., Willow A State #3 Flow Line Leak, Unit J, Section 3, Township 25 South, Range 28 East, Eddy County, New Mexico.

#### Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Willow A State #3 Flow Line Leak located in Unit J, Section 3, Township 25 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.15771°, W 104.07320°. The site location is shown on Figures 1 and 2.

#### Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on January 16, 2013, and released approximately seventy five (75) barrels of produced fluid from a flow line. To alleviate the problem, COG personnel repaired the flow line. Zero (0) barrels of standing fluids were recovered. The spill initiated west of the lease road affecting an area approximately 15' X 40' in the pasture. The initial C-141 form is enclosed in Appendix A.

#### Groundwater

One water well was listed within Section 3, with an approximate depth to groundwater of 32' below surface. According to the NMOCD groundwater map, the average depth to groundwater in this area is less than 50' below surface. The groundwater data is shown in Figure B.



#### Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 100 mg/kg.

#### Soil Assessment and Analytical Results

On January 8, 2013, Tetra Tech personnel inspected and sampled the spill area. Two (2) auger holes (AH-1 and AH-2) and a background auger hole were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, AH-1 exceeded the TPH RRAL of 163 mg/kg, but declined at 1.5' below RRAL. None of the auger holes exceeded the RRAL for benzene or total BTEX. Elevated chloride concentrations were detected in both auger holes (AH-1 and AH-2). Auger holes (AH-1) showed declining chloride concentrations, but was not vertically defined. AH-1 detected a chloride high of 19,400 mg/kg at 0-1' and declined to 1,980 mg/kg at 9-9.5' below surface. The chloride impact in the area of AH-2 showed a shallow impact and vertically defined at approximately 3.0' below surface.

The background samples showed a chloride high of 76.5 mg/kg at 0-1' below surface.

#### **Closure Activities**

Prior to excavating the impacted areas, one (1) backhoe trench (T-1) was installed in the area of AH-1 to attempt to vertically define the chloride impact. The sampling results are shown in Table 1. Referring to Table 1, the area of AH-1 showed a significant chloride impact down to 12.0' below grade surface, with a chloride concentration of 4,450 mg/kg. Deeper samples were not collected due to the backhoe depth limitation. The excavation areas and depths are highlighted in Table 1 and shown on Figure 4.



Based on the field data, the impacted areas (AH-1 and AH-2) were excavated to depth of 4.0' below surface. For safety concerns, deeper excavation could not be achieved due to the sandy subsurface formation and lines in the area of AH-1. As such, Tetra Tech excavated the soils to the maximum extent practicable. Due to deeper extent, the excavation bottom was lined with a 40 mil liner to cap the remaining impact. Approximately 110 cubic yards were transported offsite for proper disposal. The site was backfilled with clean material and brought to grade.

On July 23, 2013, Tetra Tech installed one (1) soil boring in the area of AH-1 to define chloride extents. The SB-1 results are shown in Table 2. Referring to Table 2, the soil sampling began at 4-5' below surface, where it showed a chloride high of 13,500 mg/kg. The chloride concentrations fluctuated with depth declining at 14-15' (511 mg/kg) and 24-25' (939 mg/kg). Overall, the chlorides declined with depth down to 1,470 mg/kg at 39-40' below surface, which was not vertically defined. However, the area is limited (15' x 20'), chlorides declined with depth and the area was capped with a liner to prevent vertical migration.

The fluctuating chloride concentrations may be possibly crosscontamination from the upper soil or from the natural gypsum formation encountered at 15' and deeper. A trend chart of the chloride concentrations (Figure 6) is included in the Figures section.

Based on the remedial activities performed, COG requests closure of the site. A copy of the C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

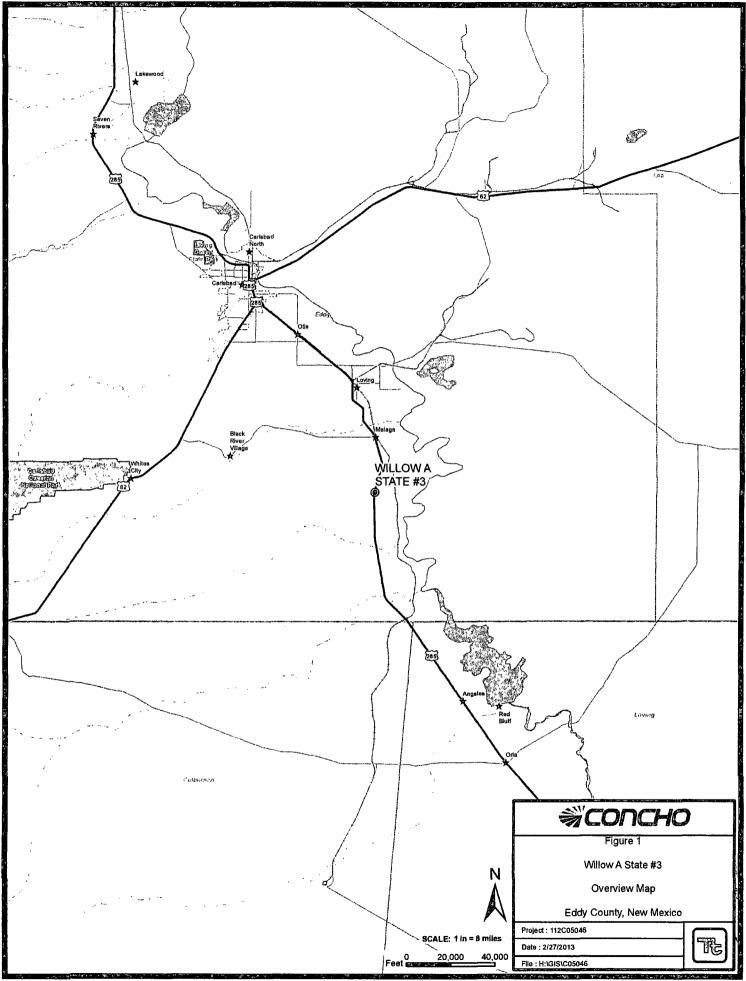
Respectfully submitted, TEPRA TECH

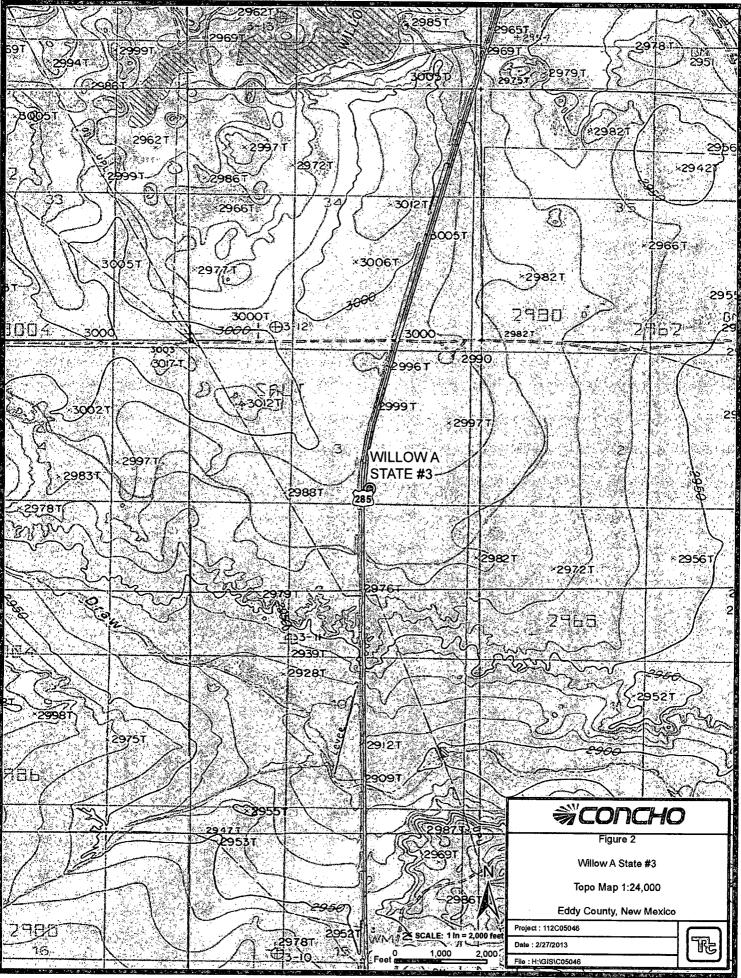
Ike Tavarez, PG Senior Project Manager

cc: Pat Ellis - COG

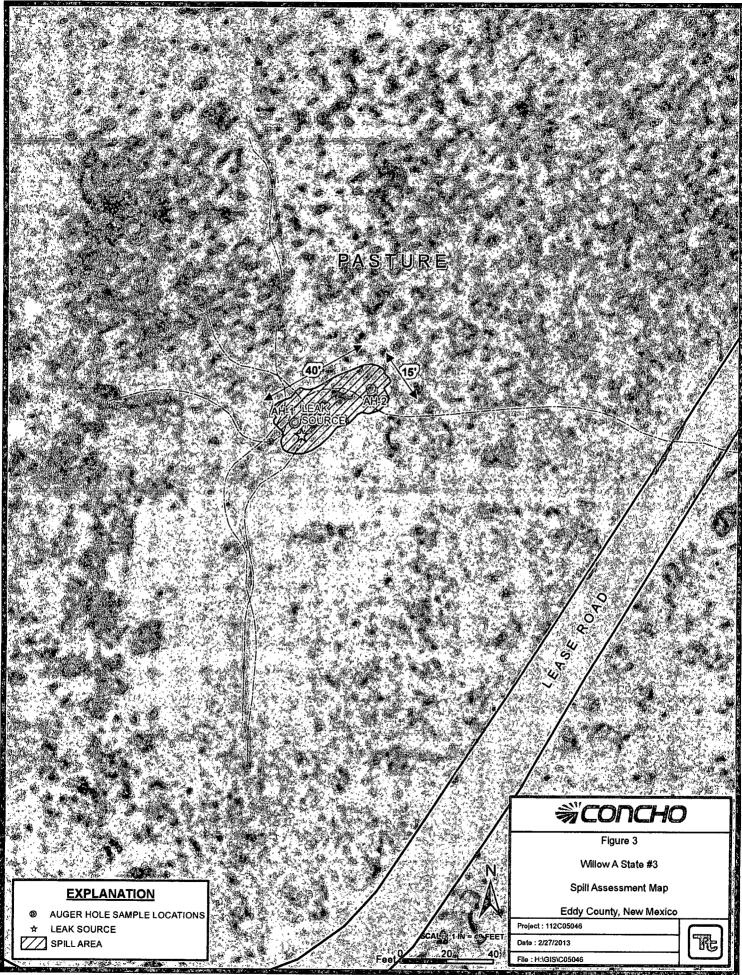
# Figures

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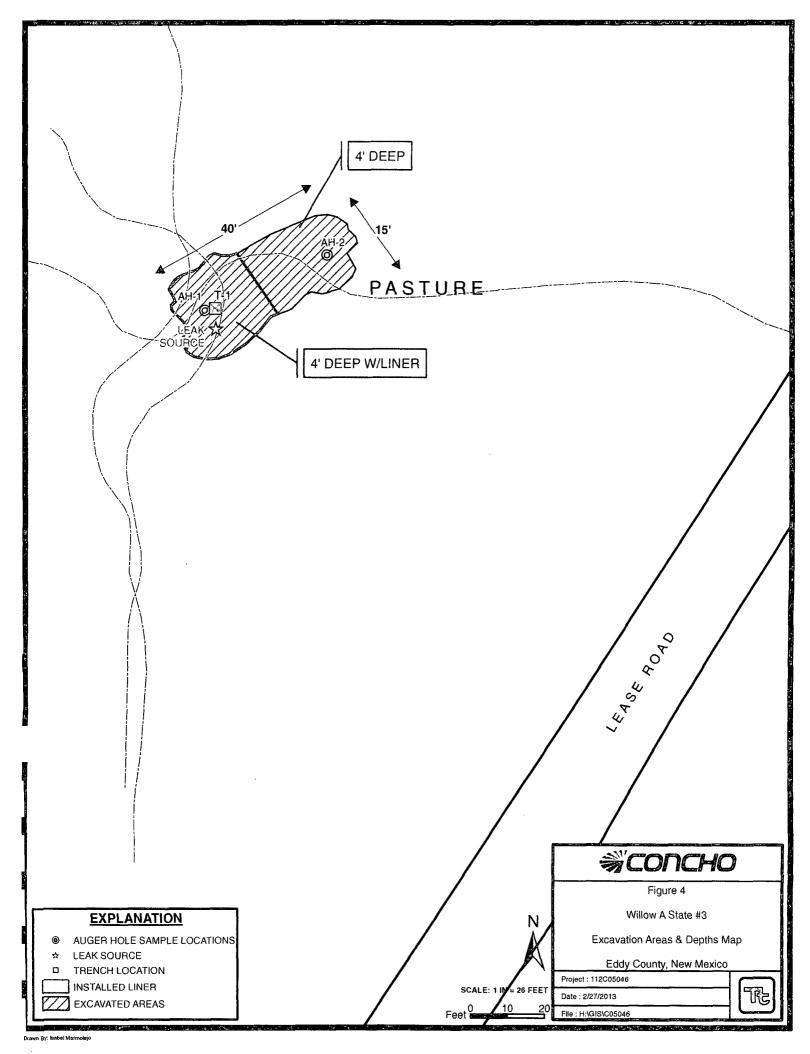


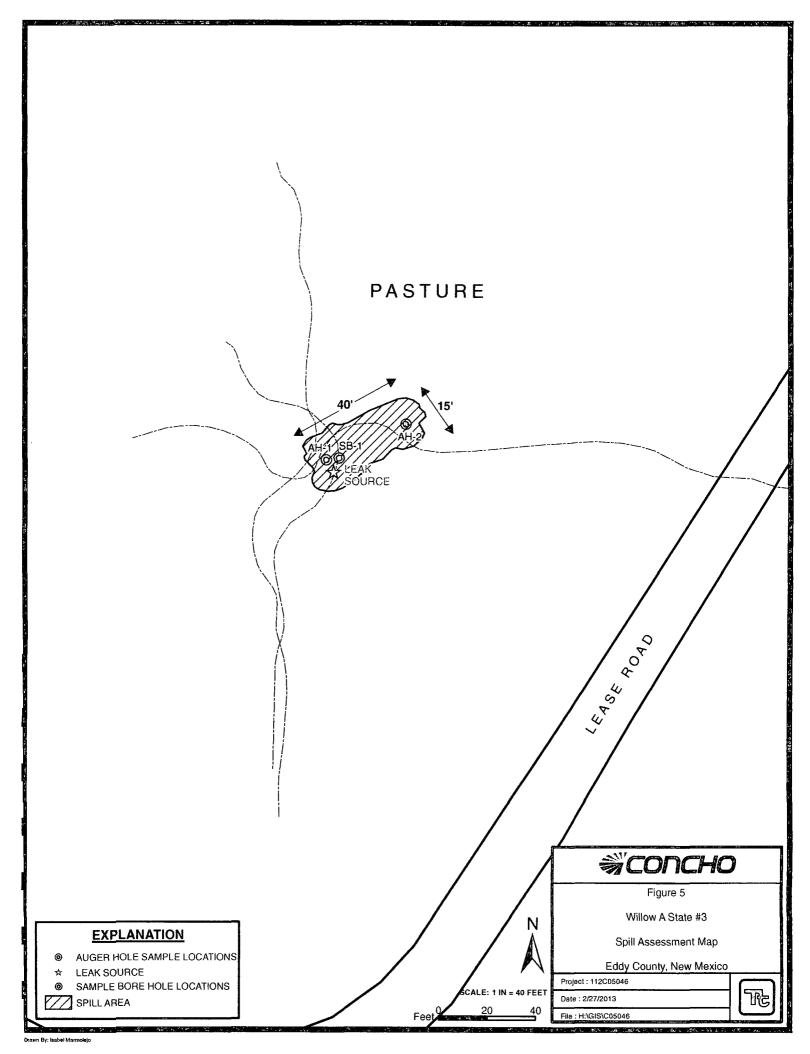


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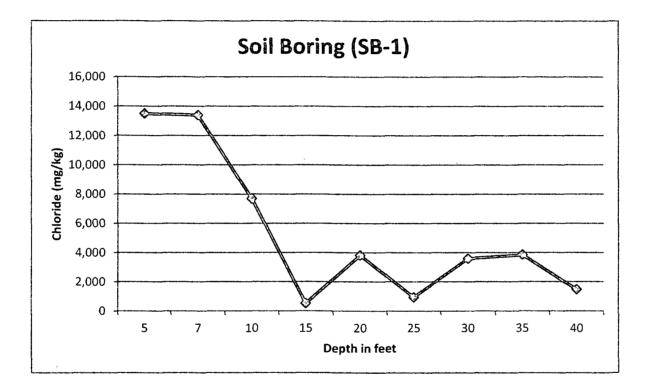


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#### Figure 6 COG Operating LLC. Willow State #3 Tank Battery Eddy County, New Mexico



# Tables

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#### Table 1 COG Operating LLC. Willow A State #3 Eddy County, New Mexico

| 0         | Sample   | Sample     | Soil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Status     | -            | FPH (mg/k    | g)            | Benzene                                                                                                                                                                                                                                                          | Toluene                                  | Ethlybenzene | Xylene BTEX |         | Chloride |
|-----------|----------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|--------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------|-------------|---------|----------|
| Sample ID | Date     | Depth (ft) | In-Situ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Removed    | GRO          | DRO          | Total         | (mg/kg)                                                                                                                                                                                                                                                          | (mg/kg)                                  | (mg/kg)      | (mg/kg)     | (mg/kg) | (mg/kg)  |
| AH-1      | 2/8/2013 | 0-1        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>X</b> - | 51.7         | <b>这时间</b> 通 | 163           | -s<0.100¢                                                                                                                                                                                                                                                        | <0.100                                   | <0.100       | 1.67        | C 1.67  | 19,400   |
|           | 0        | 1-1-5      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | X          | 4.89         | <50.0        | 4.89          |                                                                                                                                                                                                                                                                  |                                          |              | NO ANT      |         | 13,200   |
|           |          | 2-2.5      | Sec. Starten and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |              |              |               |                                                                                                                                                                                                                                                                  |                                          |              |             |         | 16,300   |
|           | 1        | 3-3.5      | S Same                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | × .        | N 69 - 2 - 3 |              |               | der der                                                                                                                                                                                                                                                          |                                          |              |             | 法的情况    | 17,800-  |
|           |          | 4-4.5      | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | - <b>X</b> |              | 11.0         |               | an an an                                                                                                                                                                                                                                                         |                                          |              |             |         | 18,300   |
|           | \$1      | 5-5.5      | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | -            | -            | -             | -                                                                                                                                                                                                                                                                | -                                        | -            | -           | -       | 14,700   |
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|           | 11       | 8          | Х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |              | -            | -             | -                                                                                                                                                                                                                                                                | -                                        | -            | -           | -       | 15,800   |
|           | 11       | 10         | Х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | -            | -            | -             | -                                                                                                                                                                                                                                                                | -                                        | -            | -           | -       | 3,330    |
|           | Ð        | 12         | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | -            | -            | -             | -                                                                                                                                                                                                                                                                | -                                        | -            | -           | -       | 4,450    |

# Table 1COG Operating LLC.Willow A State #3Eddy County, New Mexico

|            | Sample                                     | Sample     | Soil                                           | Status  | -                                              | TPH (mg/k                                                                                                | <u>g)</u> | Benzene | Toluene | Ethlybenzene                     | Xylene  | Total           | Chloride |
|------------|--------------------------------------------|------------|------------------------------------------------|---------|------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------|---------|---------|----------------------------------|---------|-----------------|----------|
| Sample ID  | Date                                       | Depth (ft) | In-Situ                                        | Removed | GRO                                            | DRO                                                                                                      | Total     | (mg/kg) | (mg/kg) | (mg/kg)                          | (mg/kg) | BTEX<br>(mg/kg) | (mg/kg)  |
| AH-2       | 2/8/2013                                   | 0-1        | 17                                             | X       | _<4.00∽                                        | <50.0                                                                                                    | <50.0     | <0.0200 | <0.0200 | <0.0200                          | <0.0200 | <0.0200         | ≈1,030 - |
|            |                                            | 1-1.5      | t silen y V.<br>av i Vilence<br>concelet south | X       | الله بر الله الله الله الله الله الله الله الل |                                                                                                          |           |         |         |                                  |         |                 | 408      |
|            |                                            | 2-2.5      |                                                | X       |                                                |                                                                                                          |           |         |         |                                  |         |                 | 946      |
|            | 1                                          | 3-3.5      |                                                | X       |                                                |                                                                                                          |           |         |         | Contraction of the second in the |         |                 | 282      |
|            | i ze i u i i i i i i i i i i i i i i i i i |            | 1                                              |         |                                                | کور کی در در در در می از می وارد.<br>اور کی در در می می می ورد در در<br>اهر در می می می ورد بی می ورد در |           |         | 22.5    |                                  | 7 CAMER |                 | 220      |
|            | 11                                         | 5-5.5      | Х                                              |         | -                                              | -                                                                                                        | -         | -       | -       | -                                | -       | -               | 205      |
|            | υ                                          | 6-6.5      | X                                              |         | +                                              | -                                                                                                        | -         | -       | -       | -                                | -       | -               | 440      |
|            | U                                          | 7-7.5      | Х                                              |         | -                                              | -                                                                                                        | -         | -       | -       | -                                | -       | -               | 186      |
|            |                                            | 8-8.5      | Х                                              |         |                                                | -                                                                                                        | -         | -       | -       | -                                | -       | -               | 119      |
|            |                                            | 9-9.5      | Х                                              |         | -                                              | -                                                                                                        | -         | -       | -       | -                                | -       | -               | 444      |
| Background | 2/8/2013                                   | 0-1        | x                                              |         | -                                              | -                                                                                                        | -         | -       | -       | -                                | -       | -               | 76.5     |
|            | 11                                         | 1.5-2      | X                                              |         | -                                              | -                                                                                                        | -         | -       | -       | -                                | -       | -               | <20.0    |
|            | u                                          | 3.5-4      | Х                                              |         | -                                              | -                                                                                                        | -         | -       | -       | -                                | -       | -               | <20.0    |
|            | 11                                         | 5.5-6      | Х                                              |         | -                                              | -                                                                                                        | -         | -       | -       | -                                |         | -               | <20.0    |

.



Not Analyzed

Excavated Depths Liner Installed

#### Table 2 COG Operating LLC. Willow State #3 Tank Battery Eddy County, New Mexico

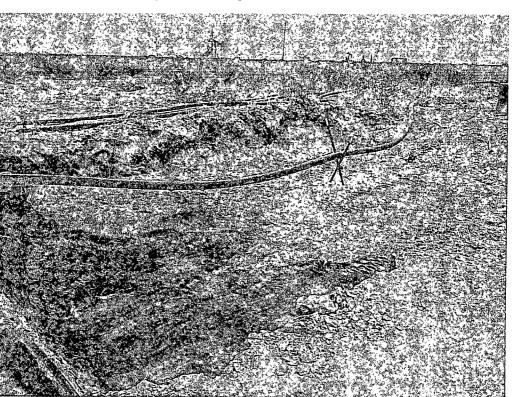
|           | Sample    | Sample BEB<br>Date Depth (ft) | Excavation | Soil    | Status  | -   | TPH (mg/k | g)    | Benzene | Toluene | Ethlybenzene | Xylene  | Total           | Chloride |
|-----------|-----------|-------------------------------|------------|---------|---------|-----|-----------|-------|---------|---------|--------------|---------|-----------------|----------|
| Sample ID |           |                               |            | In-Situ | Removed | GRO | DRO       | Total | (mg/kg) | (mg/kg) | (mg/kg)      | (mg/kg) | BTEX<br>(mg/kg) | (mg/kg)  |
| BH-1      | 7/23/2013 | 4-5                           | 0          | Х       |         | -   | -         | -     | -       | -       | -            | -       | -               | 13,500   |
|           | u         | 6-7                           | n          | Х       |         | -   | -         | -     | -       | -       | -            | -       | -               | 13,400   |
|           | n         | 9-10                          | u          | Х       |         | -   | -         | -     | -       | -       | -            | -       | -               | 7,690    |
|           | n         | 14-15                         | μ          | Х       |         | -   | -         | -     | -       | -       | -            | -       | -               | 511      |
|           | n         | 19-20                         | u          | Х       |         | -   | -         | -     | -       | -       | -            | -       | -               | 3,820    |
|           | "         | 24-25                         | u          | Х       |         | -   | -         | -     | -       | -       | -            | -       | -               | 939      |
|           | "         | 29-30                         | "          | Х       |         | -   | -         | -     | -       | -       |              | -       | -               | 3,590    |
|           | u         | 34-35                         | n          | Х       |         | -   | -         | -     | -       | -       | -            | -       | -               | 3,850    |
|           | n         | 39-40                         | n          | Х       |         | -   | -         | -     | -       | -       |              | -       | -               | 1,470    |

(-) Not Analyzed

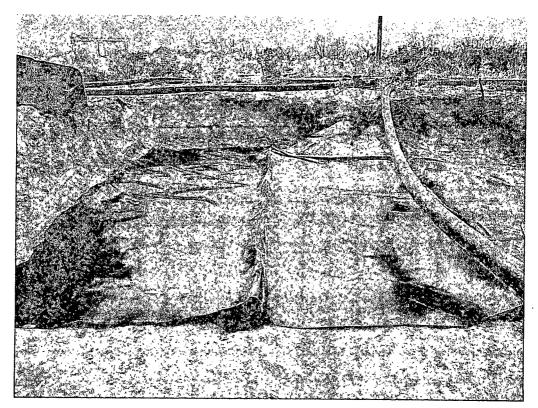
(BEB) Below Excavation Bottom

# Photos

### COG Operating LLC Willow A State #3 Eddy County, New Mexico

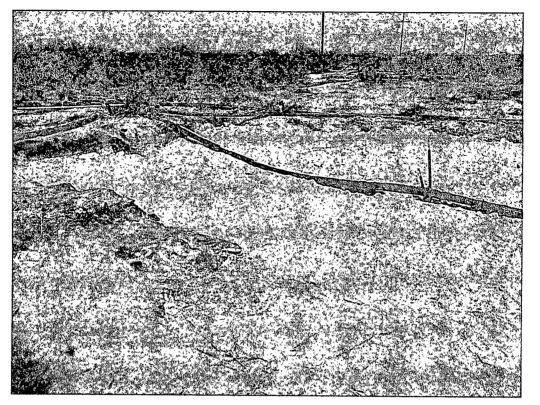


View North – Areas of AH-1 and AH-2

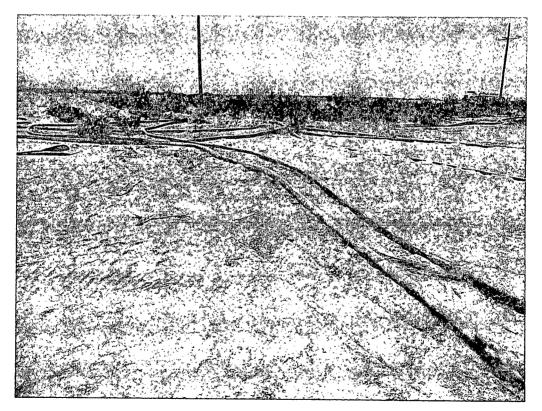


View West - Liner installed at AH-1

COG Operating LLC Willow A State #3 Eddy County, New Mexico



View North - Backfill



View West - Backfill

# Appendix A

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

> Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

JAN **24** 2014

RECEIVED

Form C-141 Revised October 10, 2003

NMOCD ARTES In the 2 Copies to appropriate strict Office in accordance with Rule 116 on back side of form

#### **Release Notification and Corrective Action**

|                                   | · · · · · · · · · · · · · · · · · · · | <b>OPERATOR</b> | 🗌 Initial Report 🛛 🛛   | Final Report |
|-----------------------------------|---------------------------------------|-----------------|------------------------|--------------|
| Name of Company                   | COG Operating LLC                     | Contact         | Pat Ellis              |              |
| Address 600 W. I                  | llinois Ave. Midland, Texas 79701     | Telephone No.   | (432) 230-0077         |              |
| Facility Name   Willow A State #3 |                                       | Facility Type   | 3" Poly water line     |              |
| Surface Owner: Federal            | Mineral Owner                         | •               | Lease No. (API#) 300-0 | 15-33371     |

#### LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |      |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|------|
| J           | 3       | 25S      | 28E   |               |                  |               |                |        | Eddy |
|             |         |          | 1     |               |                  |               |                |        |      |

Latitude N 32.15771° Longitude W 104.07320°

#### NATURE OF RELEASE

| Type of Release: Produced water with skim oil                                                                                                         | Volume of Release 75 bbls Volume Recovered 0 bbls |                 |                                        |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------|----------------------------------------|--|--|--|--|
| Source of Release: 3" poly water line                                                                                                                 | Date and Hour of Occurrence                       | Date and H      | Hour of Discovery                      |  |  |  |  |
|                                                                                                                                                       | 01/16/2013                                        | 01/16/201       | 3                                      |  |  |  |  |
| Was Immediate Notice Given?                                                                                                                           | If YES, To Whom?                                  |                 | ······································ |  |  |  |  |
| 🛛 Yes 🗌 No 🗋 Not Required                                                                                                                             | Mike                                              | e Bratcher-OC   | D                                      |  |  |  |  |
| By Whom? Michelle Mullins                                                                                                                             | Date and Hour 01/17/2013 3:49                     | p.m.            |                                        |  |  |  |  |
| Was a Watercourse Reached?                                                                                                                            | If YES, Volume Impacting the Wa                   | atercourse.     |                                        |  |  |  |  |
| 🗌 Yes 🖾 No                                                                                                                                            | N/A                                               |                 |                                        |  |  |  |  |
| If a Watercourse was Impacted, Describe Fully.*                                                                                                       | 1                                                 |                 |                                        |  |  |  |  |
| Describe Cause of Problem and Remedial Action Taken.*                                                                                                 |                                                   |                 |                                        |  |  |  |  |
|                                                                                                                                                       |                                                   |                 |                                        |  |  |  |  |
| 3" poly water line was cracked during cold weather conditions and consta                                                                              | ntly being driven over by power line              | crews in large  | e truck. The line has been             |  |  |  |  |
| repaired and returned to service.                                                                                                                     |                                                   |                 |                                        |  |  |  |  |
| Describe Area Affected and Cleanup Action Taken.*                                                                                                     |                                                   |                 |                                        |  |  |  |  |
| Describe Area Arrected and Creanup Action Taxen.                                                                                                      |                                                   |                 |                                        |  |  |  |  |
| Tetra Tech personnel inspected the site and collected samples to define the                                                                           | e spills extent. Soil that exceeded the           | RRAL was re     | emoved and hauled away for             |  |  |  |  |
| proper disposal. The site was then lined and brought up to surface grade w                                                                            |                                                   |                 |                                        |  |  |  |  |
| to NMOCD for review.                                                                                                                                  |                                                   |                 |                                        |  |  |  |  |
|                                                                                                                                                       |                                                   |                 |                                        |  |  |  |  |
| I hereby certify that the information given above is true and complete to the                                                                         |                                                   |                 |                                        |  |  |  |  |
| regulations all operators are required to report and/or file certain release n                                                                        |                                                   |                 |                                        |  |  |  |  |
| public health or the environment. The acceptance of a C-141 report by the should their operations have failed to adequately investigate and remediate |                                                   |                 |                                        |  |  |  |  |
| or the environment. In addition, NMOCD acceptance of a C-141 report d                                                                                 |                                                   |                 |                                        |  |  |  |  |
| federal, state, or local laws and/or regulations.                                                                                                     | bes not reneve the operator of respon             | isionity for co | inpliance with any other               |  |  |  |  |
|                                                                                                                                                       | OIL CONSER                                        | VATION          | DIVISION                               |  |  |  |  |
|                                                                                                                                                       | OIL CONSER                                        | VATION          | 011131011                              |  |  |  |  |
| Signature:                                                                                                                                            |                                                   |                 |                                        |  |  |  |  |
|                                                                                                                                                       | Approved by District Supervisor:                  |                 |                                        |  |  |  |  |
| Printed Name: Ike Tavarez                                                                                                                             |                                                   |                 |                                        |  |  |  |  |
|                                                                                                                                                       |                                                   |                 |                                        |  |  |  |  |
| Title: Project Manager                                                                                                                                | Approval Date:                                    | Expiration D    | ate:                                   |  |  |  |  |
| E-mail Address: Ike.Tavarez@TetraTech.com                                                                                                             | Conditions of Approval:                           |                 |                                        |  |  |  |  |
| _                                                                                                                                                     | conditions of Approval.                           |                 | Attached                               |  |  |  |  |
| Date: $5 - 13 - 13$ Phone: (432) 682-4559                                                                                                             |                                                   |                 |                                        |  |  |  |  |

\* Attach Additional Sheets If Necessary

#### State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

#### **Release Notification and Corrective Action**

|                                                   |                                                    |                                                                    |                                                     |                                                                   |                                    | <b>OPERA</b>                               | ſOR                                                          | Initia                                                                                                          | al Report                                         |                            | Final Report                           |
|---------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------|------------------------------------|--------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------|----------------------------------------|
| Name of Co                                        | mpany                                              | COG OP                                                             | ERATIN                                              | GLLC                                                              |                                    | Contact                                    | Pa                                                           | at Ellis                                                                                                        |                                                   |                            |                                        |
| Address                                           | 600 We                                             |                                                                    |                                                     | idland, TX 7970                                                   | 1 '                                | Telephone 1                                | No. 432-                                                     | 230-0077                                                                                                        |                                                   |                            |                                        |
| Facility Nan                                      | ne                                                 | Willow                                                             | v A State                                           | #3                                                                | 1                                  | Facility Typ                               | e <u>3" Pol</u>                                              | y water line                                                                                                    |                                                   |                            |                                        |
| Surface Own                                       | ner State                                          |                                                                    |                                                     | Mineral O                                                         | wner                               |                                            |                                                              | Lease 1                                                                                                         | lo. (API#) 3                                      | 0-01                       | 5-33371                                |
|                                                   |                                                    |                                                                    |                                                     | LOCA                                                              | TIOP                               | N OF RE                                    | LEASE                                                        |                                                                                                                 |                                                   |                            |                                        |
| Unit Letter<br>J                                  | Section<br>3                                       | Township<br>25S                                                    | Range<br>28E                                        | Feet from the                                                     |                                    | South Line                                 | Feet from the                                                | East/West Line                                                                                                  | County<br>E                                       | ddy                        | <u> </u>                               |
|                                                   |                                                    | <u></u>                                                            |                                                     | Latitude 32 09                                                    | .840                               | Longi                                      | t <b>ude</b> 104 04.319                                      | )                                                                                                               | 1                                                 |                            |                                        |
|                                                   |                                                    |                                                                    |                                                     |                                                                   |                                    | OF REL                                     |                                                              |                                                                                                                 |                                                   |                            |                                        |
| Type of Relea                                     | ase Produc                                         | ed water w/ sl                                                     | im oil                                              |                                                                   |                                    |                                            | Release 75bbls                                               | Volume I                                                                                                        | Recovered Ob                                      | bls                        |                                        |
| Source of Re                                      | lease 3" po                                        | ly water line                                                      |                                                     |                                                                   |                                    | Date and H<br>01/16/2013                   | lour of Occurrenc                                            |                                                                                                                 | Hour of Disc<br>3 3:00 p.m.                       |                            | 1                                      |
| Was Immedia                                       | ate Notice C                                       |                                                                    | Yes 🗌                                               | No 🗌 Not Re                                                       | quired                             | If YES, To                                 | Whom?                                                        | Mike Bratcher-O                                                                                                 |                                                   |                            |                                        |
| By Whom?                                          | Michelle M                                         | lullins                                                            |                                                     |                                                                   |                                    | Date and H                                 | lour 01/17/2013                                              | 3:49 p.m.                                                                                                       |                                                   |                            |                                        |
| Was a Water                                       | course Read                                        | hed?                                                               | Yes 🛛                                               | No                                                                |                                    | If YES, Vo                                 | olume Impacting t                                            | he Watercourse.                                                                                                 |                                                   |                            |                                        |
| If a Watercou                                     | irse was Im                                        | pacted, Descr                                                      | ibe Fully."                                         | ¢                                                                 |                                    | 1                                          |                                                              |                                                                                                                 |                                                   |                            |                                        |
| Describe Cau                                      | se of Probl                                        | em and Reme                                                        | dial Actio                                          | n Taken.*                                                         |                                    |                                            |                                                              | <u>,, ,, _</u> ,,, _,_,, _, _, _, _, _, _, _, _, _, _                                                           |                                                   |                            |                                        |
| 3" poly water repaired and                        |                                                    |                                                                    | cold weat                                           | her conditions and                                                | l consta                           | ntly being dri                             | ven over by powe                                             | er line crews in lar                                                                                            | ge trucks. The                                    | : line                     | has been                               |
| Describe Are                                      | a Affected                                         | and Cleanup /                                                      | Action Tak                                          | en.*                                                              |                                    |                                            |                                                              |                                                                                                                 |                                                   |                            |                                        |
| area is located                                   | d on ROW                                           | adjacent to wl                                                     | nere the lin                                        | ne was located and                                                | l along r                          | nearby fence                               | line roughly 30' x                                           | ased fluid due to h<br>10'. Tetra Tech w<br>or approval prior to                                                | ill sample the                                    | e spill                    | site area to                           |
| regulations al<br>public health<br>should their c | l operators<br>or the environmentions homent. In a | are required to<br>ronment. The<br>ave failed to a<br>ddition, NMC | o report ar<br>acceptanc<br>idequately<br>ICD accep | d/or file certain re<br>e of a C-141 report<br>investigate and re | elease no<br>rt by the<br>emediate | otifications a<br>NMOCD m<br>contamination | nd perform correc<br>arked as "Final R<br>on that pose a thr | nderstand that pur<br>tive actions for rel<br>eport" does not rel<br>eat to ground wate<br>responsibility for c | eases which r<br>ieve the opera<br>r, surface wat | may e<br>ator o<br>ter, hi | ndanger<br>If liability<br>uman health |
|                                                   |                                                    | 1.                                                                 |                                                     | ~                                                                 |                                    |                                            | OIL CON                                                      | SERVATION                                                                                                       | DIVISIO                                           | N                          |                                        |
| Signature:                                        |                                                    |                                                                    | <u> </u>                                            | <u> </u>                                                          |                                    | Annroved by                                | District Supervis                                            | or                                                                                                              |                                                   |                            |                                        |
| Printed Name                                      | : (                                                | Josh                                                               | Russo                                               |                                                                   |                                    |                                            |                                                              | ·····                                                                                                           |                                                   |                            |                                        |
| Title:                                            |                                                    | Senior Enviro                                                      | nmental C                                           | oordinator                                                        |                                    | Approval Da                                | te:                                                          | Expiration                                                                                                      | Date:                                             |                            |                                        |
| E-mail Addre                                      | SS:                                                | jrusso@c                                                           | concho.co                                           | <u>n</u>                                                          | (                                  | Conditions o                               | f Approval:                                                  |                                                                                                                 | Attached                                          |                            |                                        |

Date: 01/29/2013 Phone: 432-212-2399

\* Attach Additional Sheets If Necessary

# Appendix B

#### Water Well Data Average Depth to Groundwater (ft) COG - Willow A State #3 Flowline Eddy County, New Mexico

|                 | 24 S | outh           |          | 27 Eas | t               |
|-----------------|------|----------------|----------|--------|-----------------|
| 6               | 5    | 4              | 3        | 2      | 1               |
| 7               | 8 26 | 9<br><b>43</b> | 10       | 11     | 12<br>27        |
| 18<br><b>34</b> | 17   | 16             | 15       | 14     | 13<br><b>31</b> |
| 19              | 20   | 21             | 22<br>70 | 23     | 24              |
| 30              | 29   | 28             | 27       | 26     | 25              |
| 31              | 32   | 33             | 34       | 35     | 36              |

|    | 25 | South |    | t  |          |
|----|----|-------|----|----|----------|
| 6  | 5  | 4     | 3  | 2  | 1        |
| 7  | 8  | 9     | 10 | 11 | 12<br>92 |
| 18 | 17 | 16    | 15 | 14 | 13       |
| 19 | 20 | 21    | 22 | 23 | 24       |
| 30 | 29 | 28    | 27 | 26 | 25       |
| 31 | 32 | 33    | 34 | 35 | 36       |

|    | 26      | South | South 27 East |    |          |  |  |  |
|----|---------|-------|---------------|----|----------|--|--|--|
| 6  | 5<br>12 | 4     | 3             | 2  | 1        |  |  |  |
| 7  | 8       | 9     | 10            | 11 | 12       |  |  |  |
| 18 | 17      | 16    | 15            | 14 | 13<br>35 |  |  |  |
| 19 | 20      | 21    | 22<br>50      | 23 | 24       |  |  |  |
| 30 | 29      | 28    | 27            | 26 | 25       |  |  |  |
| 31 | 32      | 33    | 34            | 35 | 36       |  |  |  |

|         | 2        | 24 S | outh            |                 |          |    |                 |    |
|---------|----------|------|-----------------|-----------------|----------|----|-----------------|----|
| 6<br>70 | 5        | 30   | 4 30            | 3               | 2        | 65 | 1               | 60 |
| 7       | 8        | 50   | 9               | 10<br>17        | 11       |    | 12<br>73        |    |
| 18      | 17<br>42 |      | 16<br><b>29</b> | 15<br><b>18</b> | 14<br>52 |    | 13<br><b>34</b> |    |
| 19      | 20<br>48 |      | 21              | 22              | 23       |    | 24              |    |
| 30      | 29       |      | 28              | 27              | 26       |    | 25              |    |
| 31      | 32       |      | 33              | 34              | 35       |    | 36              |    |

|          | 25               | South    | 2            | 8 Eas    | t        |
|----------|------------------|----------|--------------|----------|----------|
| 6        | 5<br>59          | 4 35     | 3 32<br>SITE | 2        | 1        |
| 7        | 8                | 9        | 10           | 11       | 12       |
| 18<br>67 | 17               | 16       | 15<br>48 49  | 14       | 13       |
| 19       | 20<br>96         | 21       | 22           | 23       | 24       |
| 30       | 29<br>1 <b>5</b> | 28<br>90 | 27           | 26<br>30 | 25       |
| 31       | 32               | 33       | 34           | 35       | 36<br>40 |

|    | 26 | South |           | 28 East          |           |
|----|----|-------|-----------|------------------|-----------|
| 6  | 5  | 4     | 3         | 2<br>1 <b>20</b> | 1 ~       |
| 7  | 8  | 9     | 10        | 11               | 12<br>100 |
| 18 | 17 | 16    | 15        | 14<br>120        | 13<br>56  |
| 19 | 20 | 21    | 22<br>120 | 23               | 24        |
| 30 | 29 | 28    | 27        | 26               | 25        |
| 31 | 32 | 33    | 34        | 35               | 36        |

|          | 24 | South    |    | 29 Eas | t  |
|----------|----|----------|----|--------|----|
| 6        | 5  | 4        | 3  | 2      | 1  |
| 7<br>160 | 8  | 9        | 10 | 11     | 12 |
| 78       | 17 | 16<br>18 | 15 | 14     | 13 |
| 19       | 20 | (21      | 22 | 23     | 24 |
| 30       | 29 | 28       | 27 | 26     | 25 |
| 31       | 32 | 33       | 34 | 35     | 36 |

|                 |    | outh | 29              | 9 East |    |
|-----------------|----|------|-----------------|--------|----|
| 6<br>49         | 50 | 4    | 3               | 2      | 1  |
| Ċ-              | 8  | 9    | 10<br><b>40</b> | 11     | 12 |
| لر18            | 17 | 16   | 15<br>60        | 14     | 13 |
| 19              | 20 | 21   | 22              | 23     | 24 |
| 30<br><b>30</b> | 29 | 28   | 27              | 26     | 25 |
| <b>30</b><br>31 | 32 | 33   | 34              | 35     | 36 |

|      | 26 \$ | South | 2            | 9 Eas | t  |
|------|-------|-------|--------------|-------|----|
| 6    | 5     | 4     | 3            | 2     | 1  |
| 7    | 8     | 9     | 10           | 11    | 12 |
| 18   | 17    | 16    | 15           | 14    | 13 |
| 19   | 20    | 21    | 22 <b>57</b> | 23    | 24 |
| 30 U | 29    | 28    | 27           | 26    | 25 |
| 31   | 32    | 33    | 34           | 35    | 36 |

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

### **Summary Report**

Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX 79705

Report Date: April 17, 2013

Work Order: 13041026

Project Location:Eddy Co., NMProject Name:COG/Willow A State #3Project Number:112C05046

|        |                |        | Date       | Time  | Date       |
|--------|----------------|--------|------------|-------|------------|
| Sample | Description    | Matrix | Taken      | Taken | Received   |
| 325792 | T-1 (AH-1) 0'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325793 | T-1 (AH-1) 2'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325794 | T-1 (AH-1) 4'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325795 | T-1 (AH-1) 6'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325796 | T-1 (AH-1) 8'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325797 | T-1 (AH-1) 10' | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325798 | T-1 (AH-1) 12' | soil   | 2013-04-01 | 00:00 | 2013-04-10 |

#### Sample: 325792 - T-1 (AH-1) 0'

| Param    | Flag | Result | Units | $\mathbf{RL}$ |
|----------|------|--------|-------|---------------|
| Chloride |      | 10400  | mg/Kg | 4             |

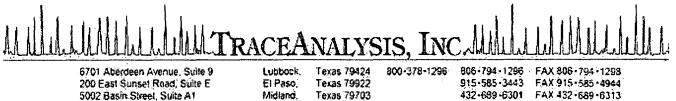
#### Sample: 325793 - T-1 (AH-1) 2'

| Param    | Flag | Result | Units | $\mathbf{RL}$ |
|----------|------|--------|-------|---------------|
| Chloride |      | 12000  | mg/Kg | 4             |

#### Sample: 325794 - T-1 (AH-1) 4'

| Param    | $\mathbf{Flag}$ | Result | Units | $\mathbf{RL}$ |
|----------|-----------------|--------|-------|---------------|
| Chloride |                 | 18100  | mg/Kg | 4             |

| Report Date: April 17, 2013 |                    | Work Order: 13041026    |       | Page Number: 2 of 2 |
|-----------------------------|--------------------|-------------------------|-------|---------------------|
| Sample: 325795              | 5 - T-1 (AH-1) 6'  |                         |       |                     |
| Param                       | Flag               | Result                  | Units | $\operatorname{RL}$ |
| Chloride                    |                    | 16800                   | mg/Kg | 4                   |
| Sample: 325796              | 6 - T-1 (AH-1) 8'  |                         |       |                     |
| Param                       | Flag               | Result                  | Units | $\operatorname{RL}$ |
| Chloride                    |                    | 15800                   | mg/Kg | 4                   |
| Sample: 325797              | 7 - T-1 (AH-1) 10' |                         |       |                     |
| Param                       | Flag               | $\mathbf{Result}$       | Units | $\operatorname{RL}$ |
| Chloride                    |                    | 3330                    | mg/Kg | 4                   |
| Sample: 325798              | 8 - T-1 (AH-1) 12' |                         |       |                     |
| Param                       | Flag               | $\operatorname{Result}$ | Units | $\operatorname{RL}$ |
| Chloride                    |                    | 4450                    | mg/Kg | 4                   |



(BioAquatic) 2501 Mayes Rd., Suite 100 E-Mail: lat El Paso, Texas 79922 Midland, Texas 79703 Carroliton, Texas 75006 @traceanalysis.com WE

E-Mail: lab@traceanalysis.com WE8: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

## Analytical and Quality Control Report

Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX, 79705

Report Date: April 17, 2013

Work Order: 13041026

972-242-7750

Project Location:Eddy Co., NMProject Name:COG/Willow A State #3Project Number:112C05046

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

|        |                |        | Date       | Time  | Date       |
|--------|----------------|--------|------------|-------|------------|
| Sample | Description    | Matrix | Taken      | Taken | Received   |
| 325792 | T-1 (AH-1) 0'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325793 | T-1 (AH-1) 2'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325794 | T-1 (AH-1) 4'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325795 | T-1 (AH-1) 6'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325796 | T-1 (AH-1) 8'  | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325797 | T-1 (AH-1) 10' | soil   | 2013-04-01 | 00:00 | 2013-04-10 |
| 325798 | T-1 (AH-1) 12' | soil   | 2013-04-01 | 00:00 | 2013-04-10 |

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 12 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael april

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

# **Report Contents**

#### Case Narrative

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| Sample 325794 (T-1 (AH-1) 4')      |
| Sample 325795 (T-1 (AH-1) 6')      |
| Sample 325796 (T-1 (AH-1) 8')      |
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### **Case Narrative**

Samples for project COG/Willow A State #3 were received by TraceAnalysis, Inc. on 2013-04-10 and assigned to work order 13041026. Samples for work order 13041026 were received intact at a temperature of 4.0 C.

Samples were analyzed for the following tests using their respective methods.

|                      |              | Prep  | Prep                | $\mathbf{QC}$ | Analysis            |
|----------------------|--------------|-------|---------------------|---------------|---------------------|
| Test                 | Method       | Batch | Date                | Batch         | Date                |
| Chloride (Titration) | SM 4500-Cl B | 85158 | 2013-04-15 at 11:25 | 100556        | 2013-04-17 at 13:52 |

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13041026 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Work Order: 13041026 COG/Willow A State #3 Page Number: 5 of 12 Eddy Co., NM

# **Analytical Report**

#### Sample: 325792 - T-1 (AH-1) 0'

| Laboratory:MidlandAnalysis:Chloride (Titration)QC Batch:100556Prep Batch:85158 |      | Date A | cal Method:<br>nalyzed:<br>Preparation: | SM 4500-Cl B<br>2013-04-17<br>2013-04-15 | Prep Method:<br>Analyzed By:<br>Prepared By: | AR            |
|--------------------------------------------------------------------------------|------|--------|-----------------------------------------|------------------------------------------|----------------------------------------------|---------------|
|                                                                                |      | -      | RL                                      |                                          |                                              |               |
| Parameter                                                                      | Flag | Cert   | Result                                  | Units                                    | Dilution                                     | $\mathbf{RL}$ |
| Chloride                                                                       |      |        | 10400                                   | mg/Kg                                    | 10                                           | 4.00          |

#### Sample: 325793 - T-1 (AH-1) 2'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>100556<br>85158 | Date An | al Method:<br>alyzed:<br>Preparation: | SM 4500-Cl B<br>2013-04-17<br>2013-04-15 | Prep Method:<br>Analyzed By:<br>Prepared By: | AR            |
|------------------------------------------------------|----------------------------------------------------|---------|---------------------------------------|------------------------------------------|----------------------------------------------|---------------|
|                                                      |                                                    |         | $\mathbf{RL}$                         |                                          |                                              |               |
| Parameter                                            | Flag                                               | Cert    | Result                                | Units                                    | Dilution                                     | $\mathbf{RL}$ |
| Chloride                                             |                                                    |         | 12000                                 | mg/Kg                                    | 10                                           | 4.00          |

#### Sample: 325794 - T-1 (AH-1) 4'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Analysis: Chloride (Titration) |      | rtical Method:<br>Analyzed:<br>le Preparation: | SM 4500-Cl B<br>2013-04-17<br>2013-04-15 | Prep Method<br>Analyzed By:<br>Prepared By: | AR            |
|------------------------------------------------------|--------------------------------|------|------------------------------------------------|------------------------------------------|---------------------------------------------|---------------|
| Parameter                                            | Flag                           | Cert | RL<br>Result                                   | Units                                    | Dilution                                    | $\mathbf{RL}$ |
| Chloride                                             |                                |      | 18100                                          | mg/Kg                                    | 10                                          | 4.00          |

| Report Date: April 17, 2013<br>112C05046                                       |                     |              | Work Orde<br>COG/Willow                          |              | Page Number: 6<br>Eddy Co                |                                              |               |
|--------------------------------------------------------------------------------|---------------------|--------------|--------------------------------------------------|--------------|------------------------------------------|----------------------------------------------|---------------|
| Sample: 32                                                                     | 5795 - T-1 (AH-1) 6 | 5'           |                                                  |              |                                          |                                              |               |
| Laboratory:MidlandAnalysis:Chloride (Titration)QC Batch:100556Prep Batch:85158 |                     |              | Analytical Met<br>Date Analyzed<br>Sample Prepar | :            | SM 4500-Cl B<br>2013-04-17<br>2013-04-15 | Prep Method:<br>Analyzed By:<br>Prepared By: | '             |
| Parameter                                                                      | FL                  | а <i>р</i> ( | Cert I                                           | RL<br>Result | Units                                    | Dilution                                     | $\mathbf{RL}$ |
| Chloride                                                                       |                     | o ``         |                                                  | 6800         | mg/Kg                                    | 10                                           | 4.00          |

#### Sample: 325796 - T-1 (AH-1) 8'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Analysis: Chloride (Titration)<br>QC Batch: 100556 |                 | al Method:<br>alyzed:<br>Preparation: | SM 4500-Cl B<br>2013-04-17<br>2013-04-15 | Prep Method:<br>Analyzed By:<br>Prepared By: | ÁR   |
|------------------------------------------------------|----------------------------------------------------|-----------------|---------------------------------------|------------------------------------------|----------------------------------------------|------|
|                                                      |                                                    |                 | $\operatorname{RL}$                   |                                          |                                              |      |
| Parameter                                            | Flag                                               | $\mathbf{Cert}$ | Result                                | Units                                    | Dilution                                     | RL   |
| Chloride                                             |                                                    |                 | 15800                                 | mg/Kg                                    | 10                                           | 4.00 |

#### Sample: 325797 - T-1 (AH-1) 10'

| Chloride    |                      |          | 3330                       | mg/Kg        | 10           | 4.00          |
|-------------|----------------------|----------|----------------------------|--------------|--------------|---------------|
| Parameter   | Flag                 | Cert     | $\operatorname{RL}$ Result | Units        | Dilution     | $\mathbf{RL}$ |
| Prep Batch: | 85158                | Sample I | Preparation:               | 2013-04-15   | Prepared By: | AR            |
| QC Batch:   | 100556               | Date An  | alyzed:                    | 2013-04-17   | Analyzed By: | AR            |
| Analysis:   | Chloride (Titration) | Analytic | al Method:                 | SM 4500-Cl B | Prep Method: | N/A           |
| Laboratory: | Midland              |          |                            |              |              |               |

#### Sample: 325798 - T-1 (AH-1) 12'

| Midland              |                                |                                                            |                                                                                  |                                                                                                          |
|----------------------|--------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Chloride (Titration) | Analytical Method:             | SM 4500-Cl B                                               | Prep Method:                                                                     | N/A                                                                                                      |
| 100556               | Date Analyzed:                 | 2013-04-17                                                 | Analyzed By:                                                                     | AR                                                                                                       |
| 85158                | Sample Preparation:            | 2013-04-15                                                 | Prepared By:                                                                     | $\mathbf{AR}$                                                                                            |
|                      | Chloride (Titration)<br>100556 | Chloride (Titration)Analytical Method:100556Date Analyzed: | Chloride (Titration)Analytical Method:SM 4500-Cl B100556Date Analyzed:2013-04-17 | Chloride (Titration)Analytical Method:SM 4500-Cl BPrep Method:100556Date Analyzed:2013-04-17Analyzed By: |

| Report Date: April 17, 201<br>112C05046 |                 | Gorder: 1304102<br>Willow A State 7 | Page Number: 7 of 12<br>Eddy Co., NM |       |          |                     |
|-----------------------------------------|-----------------|-------------------------------------|--------------------------------------|-------|----------|---------------------|
|                                         |                 |                                     | $\operatorname{RL}$                  |       |          |                     |
| Parameter                               | $\mathbf{Flag}$ | $\operatorname{Cert}$               | $\mathbf{Result}$                    | Units | Dilution | $\operatorname{RL}$ |
| Chloride                                |                 |                                     | 4450                                 | mg/Kg | 10       | 4.00                |

Work Order: 13041026 COG/Willow A State #3

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Page Number: 8 of 12 Eddy Co., NM

### Method Blanks

| Chloride                              |                  |                                   | <3.85                    | mg/Kg                        | 4  |
|---------------------------------------|------------------|-----------------------------------|--------------------------|------------------------------|----|
| Parameter                             | Flag             | Cert                              | MDL<br>Result            | Units                        | RL |
| QC Batch: 100556<br>Prep Batch: 85158 |                  | Date Analyzed:<br>QC Preparation: | 2013-04-17<br>2013-04-15 | Analyzed By:<br>Prepared By: |    |
| Method Blank (1)                      | QC Batch: 100556 |                                   |                          |                              |    |

Work Order: 13041026 COG/Willow A State #3 Page Number: 9 of 12 Eddy Co., NM

## Laboratory Control Spikes

#### Laboratory Control Spike (LCS-1)

| QC Batch: 100556<br>Prep Batch: 85158  |        |         | e Analyzed:<br>Preparation |        | 3-04-17<br>3-04-15 |                   |          |            | yzed By<br>ared By |         |
|----------------------------------------|--------|---------|----------------------------|--------|--------------------|-------------------|----------|------------|--------------------|---------|
|                                        |        |         | LCS                        |        |                    | Spike             | Ma       | atrix      |                    | Rec.    |
| Param                                  | F      | C       |                            | Units  | Dil.               | Amount            |          |            | ec                 | Limit   |
| Chloride                               |        |         | 2630 n                     | ng/Kg  | 1                  | 2500              | <:       | 3.85 1     | 05 8               | 5 - 115 |
| Percent recovery is based on the spik  | e resu | lt. RPD | ) is based on              | the sp | ike and sj         | pike duplic       | ate resu | ılt.       |                    |         |
|                                        |        | LCSD    | I                          |        | Spike              | Matrix            |          | Rec.       |                    | RPD     |
| Param F                                | С      | Result  | Units                      | Dil.   | Amount             | Result            | Rec.     | Limit      | RPD                | Limit   |
| Chloride                               |        | 2770    | mg/Kg                      | 1      | 2500               | <3.85             | 111      | 85 - 115   | 5                  | 20      |
| Percent recovery is based on the spik  | e resu | lt. RPD | ) is based on              | the sp | ike and s          | oike duplic       | ate resu | ılt.       |                    |         |
| Matrix Spike (MS-1) Spiked Sa          | mple:  | 325801  |                            |        |                    |                   |          |            |                    |         |
| QC Batch: 100556                       |        | Dat     | e Analyzed:                | 201    | 3-04-17            |                   |          | Anal       | yzed By            | AR      |
| Prep Batch: 85158                      |        | QC      | Preparation                | : 201  | 3-04-15            |                   |          | Prepa      | ared By            | AR      |
|                                        |        |         | MS                         |        |                    | Spike             | Mat      | rix        |                    | Rec.    |
| Param                                  | F      | C I     | Result U                   | nits   | Dil.               | Amount            | Rest     | ult Rec    | . I                | limit   |
| Chloride                               |        |         | 2440 m                     | g/Kg   | 5                  | 2500              | 119      | 9 93       | 78.                | 9 - 121 |
| Percent recovery is based on the spike | e resu | lt. RPD | is based on                | the sp | ike and sp         | oike duplic       | ate resu | ılt.       |                    |         |
|                                        |        | MSD     |                            |        | Spike              | Matrix            |          | Rec.       |                    | RPD     |
| Param F                                | С      | Result  | Units ]                    | Dil. 1 | Amount             | $\mathbf{Result}$ | Rec.     | Limit      | RPD                | Limit   |
| Chloride                               |        | 2570    | mg/Kg                      | 5      | 2500               | 119               | 98       | 78.9 - 121 | 5                  | 20      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Work Order: 13041026 COG/Willow A State #3 Page Number: 10 of 12 Eddy Co., NM

### **Calibration Standards**

Standard (CCV-1)

| QC Batch: 100556 |  |      |                       | Date Analyzed:   |              |               |                 | Analy               | Analyzed By: AR |  |  |
|------------------|--|------|-----------------------|------------------|--------------|---------------|-----------------|---------------------|-----------------|--|--|
|                  |  |      |                       |                  | CCVs<br>True | CCVs<br>Found | CCVs<br>Percent | Percent<br>Recovery | Date            |  |  |
| Param            |  | Flag | $\operatorname{Cert}$ | $\mathbf{Units}$ | Conc.        | Conc.         | Recovery        | Limits              | Analyzed        |  |  |
| Chloride         |  |      |                       | mg/Kg            | 100          | 101           | 101             | 85 - 115            | 2013-04-17      |  |  |

#### Standard (CCV-2)

| QC Batch: | 100556 |      |      | Date Analyzed: |              | 2013-04-17    |                       | Analyzed By: AR     |            |
|-----------|--------|------|------|----------------|--------------|---------------|-----------------------|---------------------|------------|
|           |        |      |      |                | CCVs<br>True | CCVs<br>Found | $\operatorname{CCVs}$ | Percent<br>Recovery | Date       |
| Param     |        | Flag | Cert | Units          | Conc.        | Conc.         | Recovery              | Limits              | Analyzed   |
| Chloride  |        |      |      | mg/Kg          | 100          | 99.3          | 99                    | 85 - 115            | 2013-04-17 |

Work Order: 13041026 COG/Willow A State #3 Page Number: 11 of 12 Eddy Co., NM

# Appendix

#### **Report Definitions**

| Name | Definition                 |
|------|----------------------------|
| MDL  | Method Detection Limit     |
| MQL  | Minimum Quantitation Limit |
| SDL  | Sample Detection Limit     |
|      |                            |

#### Laboratory Certifications

| С | Certifying<br>Authority | Certification<br>Number | Laboratory<br>Location |
|---|-------------------------|-------------------------|------------------------|
| - | NCTRCA                  | WFWB384444Y0909         | TraceAnalysis          |
| - | DBE                     | VN 20657                | TraceAnalysis          |
| - | HUB                     | 1752439743100-86536     | TraceAnalysis          |
| - | WBE                     | 237019                  | TraceAnalysis          |

#### Standard Flags

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
- U The analyte is not detected above the SDL

#### Attachments

Report Date: April 17, 2013 112C05046 Work Order: 13041026 COG/Willow A State #3 Page Number: 12 of 12 Eddy Co., NM

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.

13041026

| Ar                                                  | alva         | sis F              | 20               | 0       |      | est of Cha                                | ain of Custo                                                                                                                             | dv F                 | 26             | <b>`</b> |             | rr  | 4     |            |                 |           |             |                |                     |                |               | PAG                                          | iE:           |             |             |                                     | OF:                     |              |           |   |
|-----------------------------------------------------|--------------|--------------------|------------------|---------|------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|----------|-------------|-----|-------|------------|-----------------|-----------|-------------|----------------|---------------------|----------------|---------------|----------------------------------------------|---------------|-------------|-------------|-------------------------------------|-------------------------|--------------|-----------|---|
|                                                     | icai y o     |                    | <u> </u>         |         |      | 7                                         |                                                                                                                                          | <u> </u>             |                |          |             |     |       | -          |                 |           |             |                | (Cire               | -              |               |                                              |               | QUE<br>leth |             | lo.)                                |                         |              |           |   |
|                                                     |              |                    |                  |         | R    | Midland, Tex                              | Spring St.                                                                                                                               |                      |                |          |             |     |       |            | 5 (Ext. to C35) |           | ล<br>2      |                |                     |                |               |                                              |               |             |             | -                                   | TDS                     |              |           |   |
| CLIENT NA                                           | ME: CO       | <br>د              |                  |         |      | SITE MANAGE                               | R:<br>Taywer                                                                                                                             | VERS                 | Π              | P        |             | ERV | ATIVE | 1          | TX1005          |           | Ba          | 8              |                     |                | 60/624        | 1/0/625                                      |               |             |             |                                     | Ξ                       |              |           |   |
| PROJECT                                             | 10.:         |                    |                  |         |      | NAME:                                     |                                                                                                                                          | ONTAIL               | 9              | 7        |             |     |       | 1          | MOD.            |           | Ag As       |                | latiles             |                | 40/82         |                                              |               |             |             | E                                   | o,<br>Cations,          |              |           |   |
| <u>/11.Cosc</u><br>LAB I.D.<br>NUMBER               | DATE         | TIME               | MATRIX           | COMP: N | GRAB | SAMPL                                     | د المرابع الم<br>A DENTIFICATION | NUMBER OF CONTAINERS | FILTERED (Y/N) | HCL      | HN03        | ICE | NONE  | BTEX 8021B | TPH 8015 N      | PAH 8270  | RCRA Metals | TCLP Volatiles | TCLP Semi Volatiles | RCI            | GC.MS Vol. 82 | GC.MS Semi.<br>PCB's 8080/60                 | Pest. 808/608 | Chloride    | Gamma Spec. | Alpha Beta (Air)<br>Pl M (Achostoc) | Major Anions/C          |              |           |   |
| 325792                                              | 4/1          |                    | 5                |         | ×    | T-1 (AH-1) O'                             |                                                                                                                                          | 1                    |                |          |             |     | X     | T          |                 |           | 1           |                |                     |                |               |                                              |               | X           |             |                                     |                         |              | $\square$ |   |
| 793                                                 |              |                    | $\left[ \right]$ |         |      | T-1 (AH-1) 2'                             |                                                                                                                                          |                      |                |          |             |     | X     |            |                 |           |             |                |                     |                |               |                                              |               | X           |             |                                     |                         |              |           |   |
| 794                                                 |              |                    |                  |         |      | T-1 (AH-1) 4'                             |                                                                                                                                          | 1                    |                |          |             |     | X     |            |                 |           |             |                |                     |                |               |                                              |               | X           |             |                                     |                         |              |           |   |
| 195                                                 |              |                    |                  |         |      | T-1 (AH-1) 6'                             |                                                                                                                                          | ١                    |                |          |             |     | X     |            | Τ               |           |             | T              |                     |                |               |                                              |               | Х           |             |                                     |                         |              |           |   |
| 796                                                 |              |                    |                  |         |      | T-1 (AH-1) 8'                             |                                                                                                                                          | 1                    |                |          |             |     | Х     |            |                 |           |             | T              |                     |                |               | Γ                                            |               | X           |             |                                     |                         |              |           |   |
| 797                                                 |              |                    |                  |         |      | T-1 (AH-1) 10'                            |                                                                                                                                          | 1                    |                |          |             |     | X     |            | Τ               |           | Τ           | T              |                     |                |               |                                              |               | X           |             |                                     |                         |              | $\square$ |   |
| 798                                                 |              |                    | ľ                |         | Ŀ    | T-1 (AH-1) 12'                            |                                                                                                                                          | ,                    |                |          |             |     | X     |            |                 |           |             | T              | Π                   |                | Τ             | T                                            |               | X           |             | T                                   |                         |              | T         |   |
|                                                     |              |                    |                  |         |      |                                           |                                                                                                                                          |                      |                |          |             |     |       |            |                 |           |             |                |                     |                |               |                                              |               |             |             |                                     |                         |              |           |   |
|                                                     |              |                    |                  |         |      |                                           |                                                                                                                                          |                      |                |          |             | _   |       |            |                 |           |             |                |                     |                |               |                                              |               |             |             |                                     |                         |              |           |   |
|                                                     |              |                    |                  |         |      |                                           |                                                                                                                                          |                      |                |          |             |     |       |            |                 |           |             |                |                     |                |               |                                              |               |             |             |                                     |                         |              |           |   |
| RELINQUISHED                                        | BY: Signati  | 1 <sup>(1)</sup> - | -                | _       |      | Date:                                     | RECEIVED BY: (Signature)                                                                                                                 | L                    | 7              | 77       | ate:<br>me: | 4   | 11.71 | 5          |                 | SAD<br>Ma | APLEI       | J BY:          | Rint                | & Init<br>دربع | ial)<br>SKi   | <u>/                                    </u> | K             |             |             | Date<br>Time                        |                         |              |           | _ |
| RELINGUIGHED                                        | BY: (Signatu | Jre)               |                  |         |      | Date: <u>1/11/15</u><br>Time: <u>1/35</u> | RECEIVED BY: (Signature)                                                                                                                 |                      |                |          | ate:<br>me: | 4   | D 12  |            |                 | FI        | DEX         |                | EDB                 | ં વ            | 3US           |                                              |               |             |             | RBIL                                |                         |              |           | - |
| RELINCUISHED                                        |              |                    |                  |         |      | Date:                                     | RECEIVED BY: (Signature)                                                                                                                 |                      |                |          | ate:<br>me: |     |       |            |                 |           |             |                | ONTA                |                | JPS<br>ERS    | ON:                                          |               |             |             | THER                                | esults i                | by:          |           | - |
| RECEIVING LAE<br>ADDRESS:<br>CITY: MIDL<br>CONTACT: |              | TRAC<br>STATE:     |                  |         | HONE | ZIP:                                      | RECEIVED BY: (Signature)                                                                                                                 | <br>IT               | ME:            |          |             |     |       |            |                 | I         | he          | 10             | ~<br>2V6            | re             | r             |                                              |               |             |             | RI<br>Al                            | USH C<br>uthoriz<br>Yes | harge<br>ed: | 25<br>No  | _ |
| SAMPLE COND                                         | ITION WHEN   | RECEIVED:          |                  |         |      | REMARKS:<br>MUHANI                        |                                                                                                                                          |                      |                |          |             |     |       |            |                 |           |             |                |                     |                |               |                                              |               |             |             |                                     |                         | 2            | 12        |   |

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

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## **Summary Report**

Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX 79705

Report Date: February 15, 2013

Work Order: 13021102

Project Location:Eddy Co., NMProject Name:COG/Willow A State #3Project Number:112C05046

|        |                   |        | Date       | Time  | Date       |
|--------|-------------------|--------|------------|-------|------------|
| Sample | Description       | Matrix | Taken      | Taken | Received   |
| 320672 | AH-1 0-1'         | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320673 | AH-1 1-1.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320674 | AH-1 2-2.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320675 | AH-1 3-3.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320676 | AH-1 4-4.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320677 | AH-1 5-5.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320678 | AH-1 6-6.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320679 | AH-1 7-7.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320680 | AH-1 8-8.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320681 | AH-1 9-9.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320682 | AH-2 0-1'         | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320683 | AH-2 1-1.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320684 | AH-2 2-2.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320685 | AH-2 3-3.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320686 | AH-2 4-4.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320687 | AH-2 5-5.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320688 | AH-2 6-6.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320689 | AH-2 7-7.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320690 | AH-2 8-8.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320691 | AH-2 9-9.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320692 | Background 0-1'   | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320693 | Background 1.5-2' | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320694 | Background 3.5-4' | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320695 | Background 5.5-6' | soil   | 2013-02-08 | 00:00 | 2013-02-08 |

### Report Date: February 15, 2013

Work Order: 13021102

|                   | I                                                                                                                                                | BTEX                                                                                   |                                                                                                       | TPH DRO - NEW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TPH GRO                                                                                                                                               |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Benzene           | Toluene                                                                                                                                          | Ethylbenzene                                                                           | Xylene                                                                                                | DRO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | GRO                                                                                                                                                   |
| (mg/Kg)           | (mg/Kg)                                                                                                                                          | (mg/Kg)                                                                                | (mg/Kg)                                                                                               | (mg/Kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | (mg/Kg)                                                                                                                                               |
| <0.100 1          | <0.100                                                                                                                                           | <0.100                                                                                 | 1.67                                                                                                  | 111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 51.7                                                                                                                                                  |
|                   |                                                                                                                                                  |                                                                                        |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4.89                                                                                                                                                  |
| <0.0200           | < 0.0200                                                                                                                                         | <0.0200                                                                                | <0.0200                                                                                               | <50.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <4.00 <sup>2</sup>                                                                                                                                    |
| -1 0-1'           |                                                                                                                                                  |                                                                                        |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                       |
| Flag              |                                                                                                                                                  | Result                                                                                 |                                                                                                       | Units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | RI                                                                                                                                                    |
|                   |                                                                                                                                                  | 19400                                                                                  |                                                                                                       | mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                       |
| -1 1-1.5'<br>Flag |                                                                                                                                                  | Result                                                                                 |                                                                                                       | Units<br>mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RI                                                                                                                                                    |
| -1 2-2.5'         |                                                                                                                                                  |                                                                                        |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                       |
| Flag              |                                                                                                                                                  | Result                                                                                 |                                                                                                       | Units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | RJ                                                                                                                                                    |
|                   |                                                                                                                                                  | 16300                                                                                  |                                                                                                       | mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                       |
| -1 3-3.5'         |                                                                                                                                                  |                                                                                        |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                       |
| Flag              |                                                                                                                                                  | Result                                                                                 |                                                                                                       | Units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | RI                                                                                                                                                    |
|                   |                                                                                                                                                  | 17800                                                                                  |                                                                                                       | mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4                                                                                                                                                     |
| -1 4-4.5'         |                                                                                                                                                  |                                                                                        |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                       |
| Flag              |                                                                                                                                                  | Result                                                                                 |                                                                                                       | Units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | RI                                                                                                                                                    |
|                   |                                                                                                                                                  | 18300                                                                                  |                                                                                                       | mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4                                                                                                                                                     |
| 1 5-5.5'          |                                                                                                                                                  |                                                                                        |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                       |
|                   | (mg/Kg)<br><0.100 <sup>1</sup><br><0.0200<br>•1 0-1'<br>Flag<br>•1 1-1.5'<br>Flag<br>•1 2-2.5'<br>Flag<br>•1 3-3.5'<br>Flag<br>•1 4-4.5'<br>Flag | Benzene       Toluene         (mg/Kg)       (mg/Kg)         <0.100 <sup>1</sup> <0.100 | Benzene         Toluene         Ethylbenzene $(mg/Kg)$ $(mg/Kg)$ $(mg/Kg)$ <0.100 <sup>1</sup> <0.100 | Benzene         Toluene         Ethylbenzene         Xylene $(mg/Kg)$ $(mg/Kg)$ $(mg/Kg)$ $(mg/Kg)$ $<0.100^{-1}$ $<0.100$ $<0.100$ $1.67$ $<0.0200$ $<0.0200$ $<0.0200$ $<0.0200$ $<10-1'$ Flag         Result $19400$ $<11-1.5'$ Flag         Result $13200$ $<112-2.5'$ Flag         Result $13200$ $<12-2.5'$ Flag         Result $13200$ $<12-2.5'$ Flag         Result $13200$ $<12-2.5'$ Flag         Result $16300$ $<13-3.5'$ Flag         Result $16300$ $<13-3.5'$ Flag         Result $17800$ | Benzene         Toluene         Ethylbenzene         Xylene         DRO $(mg/Kg)$ $(mg/Kg)$ $(mg/Kg)$ $(mg/Kg)$ $(mg/Kg)$ <0.100 <sup>-1</sup> <0.100 |

### Sample: 320678 - AH-1 6-6.5'

<sup>&</sup>lt;sup>1</sup>Dilution due to surfactant. <sup>2</sup>Dilution due to surfactant.

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.

| Report Date: Februa | ary 15, 2013                           | Work Order: 13021102 | Page 1 | Number: 3 of 5 |
|---------------------|----------------------------------------|----------------------|--------|----------------|
| Param               | Flag                                   | Result               | Units  | RL             |
| Chloride            | ······································ | 14000                | mg/Kg  | 4              |
| Sample: 320679 -    | AH-1 7-7.5'                            |                      |        |                |
| Param               | Flag                                   | Result               | Units  | $\mathbf{RL}$  |
| Chloride            |                                        | 8030                 | mg/Kg  | . 4            |
| Sample: 320680 -    | AH-1 8-8.5'                            |                      |        |                |
| Param               | Flag                                   | Result               | Units  | RL             |
| Chloride            |                                        | 3820                 | mg/Kg  | 4              |
| Sample: 320681 -    | AH-1 9-9.5'                            |                      |        |                |
| Param               | $\mathbf{F}\mathbf{lag}$               | Result               | Units  | RL             |
| Chloride            |                                        | 1980                 | mg/Kg  | 4              |
| Sample: 320682 -    | AH-2 0-1'                              |                      |        |                |
| Param               | Flag                                   | Result               | Units  | RL             |
| Chloride            |                                        | 1030                 | mg/Kg  | 4              |
| Sample: 320683 -    | AH-2 1-1.5'                            |                      |        |                |
| Param               | Flag                                   | Result               | Units  | $\mathbf{RL}$  |
| Chloride            |                                        | 408                  | mg/Kg  | 4              |
| Sample: 320684 -    | AH-2 2-2.5'                            |                      |        |                |
| Param               | $\mathbf{F}$ lag                       | Result               | Units  | RL             |
| Chloride            |                                        | 946                  | mg/Kg  | 4              |
| Sample: 320685 -    | AH-2 3-3.5'                            |                      |        |                |
| Param               | Flag                                   | Result               | Units  | $\mathbf{RL}$  |
| Chloride            |                                        | 282                  | mg/Kg  | 4              |

| Report Date: February 15, 2013     | Work Order: 13021102 | Pag   | e Number: 4 of 5 |
|------------------------------------|----------------------|-------|------------------|
| Sample: 320686 - AH-2 4-4.5'       |                      |       |                  |
| Param Flag                         | Result               | Units | RL               |
| Chloride                           | 220                  | mg/Kg | 4                |
| Sample: 320687 - AH-2 5-5.5'       |                      |       |                  |
| Param Flag                         | Result               | Units | RL               |
| Chloride                           | 205                  | mg/Kg | 4                |
| Sample: 320688 - AH-2 6-6.5'       |                      |       |                  |
| Param Flag                         | Result               | Units | RL               |
| Chloride                           | 440                  | mg/Kg | 4                |
| Sample: 320689 - AH-2 7-7.5'       |                      |       |                  |
| Param Flag                         | Result               | Units | RL               |
| Chloride                           | 186                  | mg/Kg | 4                |
| Sample: 320690 - AH-2 8-8.5'       |                      |       |                  |
| Param Flag                         | Result               | Units | RL               |
| Chloride                           | 119                  | mg/Kg | 4                |
| Sample: 320691 - AH-2 9-9.5'       |                      |       |                  |
| Param Flag                         | Result               | Units | $\mathbf{RL}$    |
| Chloride                           | 444                  | mg/Kg | 4                |
| Sample: 320692 - Background 0-1'   |                      |       |                  |
| Param Flag                         | Result               | Units | $\mathbf{RL}$    |
| Chloride                           | 76.5                 | mg/Kg | 4                |
| Sample: 320693 - Background 1.5-2' |                      |       |                  |
| Param Flag                         | Result               | Units | RL               |
| Chloride                           | <20.0                | mg/Kg | • 4              |

| Report Date: Febru | uary 15, 2013            | Work Order: 13021102 | Page  | Number: 5 of 5 |
|--------------------|--------------------------|----------------------|-------|----------------|
| Sample: 320694     | - Background 3.5-4'      |                      |       |                |
| Param              | $\mathbf{F}\mathbf{lag}$ | Result               | Units | $\mathbf{RL}$  |
| Chloride           |                          | <20.0                | mg/Kg | 4              |
| Sample: 320695     | - Background 5.5-6'      |                      |       |                |
| Param              | Flag                     | Result               | Units | RL             |
| Chloride           |                          | <20.0                | mg/Kg | 4              |



6701 Aberdeen Avenue: Suite 9 200 East Sünset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100.

Lubbock. Texas 79424 800-378-1296 El Paso; Texas 79922 Texas 79703 Midland, Carroliton Texas 75006

432-689-6301 972-242-7750 E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

915-585-3443.

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

## Analytical and Quality Control Report

Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX, 79705

Report Date: February 15, 2013

FAX:806-794-1298

FAX 915-585-4944

FAX 432-689-6313

## Work Order: 13021102

Project Location: Eddy Co., NM **Project Name:** COG/Willow A State #3 Project Number: 112C05046

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

|        | and sharp of the s |        | Date       | Time  | Date       |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|-------|------------|
| Sample | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Matrix | Taken      | Taken | Received   |
| 320672 | AH-1 0-1'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320673 | AH-1 1-1.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320674 | AH-1 2-2.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320675 | AH-1 3-3.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320676 | AH-1 4-4.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320677 | AH-1 5-5.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320678 | AH-1 6-6.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320679 | AH-1 7-7.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320680 | AH-1 8-8.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320681 | AH-1 9-9.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320682 | AH-2 0-1'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320683 | AH-2 1-1.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320684 | AH-2 2-2.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320685 | AH-2 3-3.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320686 | AH-2 4-4.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320687 | AH-2 5-5.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320688 | AH-2 6-6.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320689 | AH-2 7-7.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | soil   | 2013-02-08 | 00:00 | 2013-02-08 |

|        |                   |        | Date       | Time  | , Date     |
|--------|-------------------|--------|------------|-------|------------|
| Sample | Description       | Matrix | Taken      | Taken | Received   |
| 320690 | AH-2 8-8.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320691 | AH-2 9-9.5'       | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320692 | Background 0-1'   | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320693 | Background 1.5-2' | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320694 | Background 3.5-4' | soil   | 2013-02-08 | 00:00 | 2013-02-08 |
| 320695 | Background 5.5-6' | soil   | 2013-02-08 | 00:00 | 2013-02-08 |

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

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Michael Q

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

| QC Batch 98919 - LCS (1)                     |                                       |
|----------------------------------------------|---------------------------------------|
| QC Batch 98958 - LCS $(1)$                   |                                       |
| QC Batch 98965 - LCS $(1)$                   |                                       |
| QC Batch 98827 - MS $(1)$                    |                                       |
| $\overrightarrow{QC}$ Batch 98841 - MS $(1)$ |                                       |
| QC Batch 98887 - MS $(1)$                    |                                       |
| QC Batch 98888 - MS $(1)$                    |                                       |
| QC Batch 98917 - MS $(1)$                    |                                       |
| QC Batch 98918 - MS (1)                      |                                       |
| QC Batch 98919 - MS (1)                      |                                       |
| QC Batch 98958 - MS (1)                      |                                       |
| QC Batch 98965 - $MS(1)$                     |                                       |
|                                              |                                       |
| Calibration Standards                        | 2                                     |
| QC Batch 98827 - CCV (1)                     |                                       |
|                                              |                                       |
| QC Batch 98841 - CCV (1)                     |                                       |
|                                              |                                       |
|                                              |                                       |
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|                                              |                                       |
| QC Batch 98965 - CCV (1)                     |                                       |
| QC Batch 98965 - $CCV$ (2)                   |                                       |
|                                              |                                       |
| Appendix                                     | 3                                     |
| Report Definitions                           | -                                     |
| Laboratory Certifications                    |                                       |
| Standard Flags                               |                                       |
| Result Comments                              |                                       |
| Attachments                                  |                                       |

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# **Case Narrative**

Samples for project COG/Willow A State #3 were received by TraceAnalysis, Inc. on 2013-02-08 and assigned to work order 13021102. Samples for work order 13021102 were received intact at a temperature of 2.2 C.

Samples were analyzed for the following tests using their respective methods.

|                      |              | Prep  | Prep                | $\mathbf{QC}$ | Analysis            |
|----------------------|--------------|-------|---------------------|---------------|---------------------|
| Test                 | Method       | Batch | Date                | Batch         | Date                |
| BTEX                 | S 8021B      | 83781 | 2013-02-12 at 15:00 | 98888         | 2013-02-12 at 15:00 |
| Chloride (Titration) | SM 4500-Cl B | 83717 | 2013-02-11 at 08:44 | 98827         | 2013-02-11 at 15:36 |
| Chloride (Titration) | SM 4500-Cl B | 83717 | 2013-02-11 at 08:44 | 98917         | 2013-02-13 at 14:44 |
| Chloride (Titration) | SM 4500-Cl B | 83717 | 2013-02-11 at 08:44 | 98918         | 2013-02-13 at 14:45 |
| Chloride (Titration) | SM 4500-Cl B | 83717 | 2013-02-11 at 08:44 | 98919         | 2013-02-13 at 14:46 |
| TPH DRO - NEW        | S 8015 D     | 83748 | 2013-02-11 at 10:00 | 98841         | 2013-02-12 at 09:47 |
| TPH DRO - NEW        | S 8015 D     | 83844 | 2013-02-15 at 11:00 | 98965         | 2013-02-15 at 13:34 |
| TPH GRO              | S 8015 D     | 83781 | 2013-02-12 at 15:00 | 98887         | 2013-02-12 at 15:00 |
| TPH GRO              | S 8015 D     | 83839 | 2013-02-15 at 08:00 | 98958         | 2013-02-15 at 08:00 |

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13021102 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: February 15, 2013 112C05046

### Work Order: 13021102 COG/Willow A State #3

# **Analytical Report**

### Sample: 320672 - AH-1 0-1'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>BTEX<br>98888<br>83781 |      | Ď    | ate Anal | Method:<br>yzed:<br>eparation | 2013-02       | -12      |                 | Prep Metho<br>Analyzed B<br>Prepared By | y: YG              |
|------------------------------------------------------|-----------------------------------|------|------|----------|-------------------------------|---------------|----------|-----------------|-----------------------------------------|--------------------|
|                                                      |                                   |      |      |          |                               | $\mathbf{RL}$ |          |                 |                                         |                    |
| Parameter                                            |                                   | Flag |      | Cert     |                               | Result        | Unit     | s               | Dilution                                | $\mathbf{RL}$      |
| Benzene                                              | 1                                 | υ    |      | 1        |                               | <0.100        | mg/K     | g               | 5                                       | 0.0200             |
| Toluene                                              |                                   | υ    |      | 1        |                               | < 0.100       | mg/K     | g               | 5                                       | 0.0200             |
| Ethylbenzene                                         | 2                                 | υ    |      | 1        |                               | <0.100        | mg/K     | g               | 5                                       | 0.0200             |
| Xylene                                               |                                   |      |      | 1        |                               | 1.67          | mg/K     | g               | 5                                       | 0.0200             |
| Surrogate                                            |                                   |      | Flag | Cert     | Result                        | Units         | Dilution | Spike<br>Amount | Percent<br>Recovery                     | Recovery<br>Limits |
| Trifluorotolue                                       | ene (TFT)                         | Qar  | Qsr  |          | 11.8                          | mg/Kg         | 5        | 10.0            | 118                                     | 79.5 - 108         |
|                                                      | obenzene (4-BFB)                  | •    |      |          | 10.8                          | mg/Kg         | 5        | 10.0            | 108                                     | 71.4 - 108         |

### Sample: 320672 - AH-1 0-1'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98827<br>83717 | Date An | al Method:<br>alyzed:<br>Preparation: | SM 4500-Cl B<br>2013-02-11<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | ÁR   |  |
|------------------------------------------------------|---------------------------------------------------|---------|---------------------------------------|------------------------------------------|----------------------------------------------|------|--|
|                                                      |                                                   |         | $\mathbf{RL}$                         |                                          |                                              |      |  |
| Parameter                                            | Flag                                              | Cert    | Result                                | Units                                    | Dilution                                     | RL   |  |
| Chloride                                             |                                                   |         | 19400                                 | mg/Kg                                    | 10                                           | 4.00 |  |

### Sample: 320672 - AH-1 0-1'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>TPH DRO - NEW<br>98841<br>83748 | Date A | cal Method:<br>nalyzed:<br>Preparation: | S 8015 D<br>2013-02-12<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | N/A<br>CW<br>CW |
|------------------------------------------------------|--------------------------------------------|--------|-----------------------------------------|--------------------------------------|----------------------------------------------|-----------------|
| Parameter                                            | Flag                                       | Cert   | RL<br>Result                            | Units                                | Dilution                                     | RL              |
| DRO                                                  |                                            | 1      | 111                                     | mg/Kg                                | 1                                            | 50.0            |

| Report Date: February 15, 2013<br>112C05046 |      |      | Work Order: 13021102<br>COG/Willow A State #3 |       |          |                 | Page Number: 7 of 36<br>Eddy Co., NM |                    |  |
|---------------------------------------------|------|------|-----------------------------------------------|-------|----------|-----------------|--------------------------------------|--------------------|--|
| Surrogate                                   | Flag | Cert | Result                                        | Units | Dilution | Spike<br>Amount | Percent<br>Recovery                  | Recovery<br>Limits |  |
| n-Tricosane                                 |      |      | 111                                           | mg/Kg | 1        | 100             | 111                                  | 70 - 130           |  |

### Sample: 320672 - AH-1 0-1'

| Laboratory: Midland<br>Analysis: TPH GRO<br>QC Batch: 98887<br>Prep Batch: 83781 |      |      | Date An | al Method<br>alyzed:<br>Preparation | 2013-0        | 2-12     |        | Prep Metho<br>Analyzed B<br>Prepared B | y: YG         |
|----------------------------------------------------------------------------------|------|------|---------|-------------------------------------|---------------|----------|--------|----------------------------------------|---------------|
|                                                                                  |      |      |         |                                     | $\mathbf{RL}$ |          |        |                                        |               |
| Parameter                                                                        | Flag |      | Cert    | F                                   | Result        | Uni      | ts     | Dilution                               | $\mathbf{RL}$ |
| GRO                                                                              |      |      | 1       |                                     | 51.7          | mg/k     | g      | 5                                      | 4.00          |
|                                                                                  |      |      |         |                                     |               |          | Spike  | Percent                                | Recovery      |
| Surrogate                                                                        |      | Flag | Cert    | Result                              | Units         | Dilution | Amount | Recovery                               | Limits        |
| Trifluorotoluene (TFT)                                                           |      |      |         | 9.00                                | mg/Kg         | 5        | 10.0   | 90                                     | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB)                                                     |      |      |         | 11.4                                | mg/Kg         | 5        | 10.0   | 114                                    | 70 - 130      |

### Sample: 320673 - AH-1 1-1.5'

| Chloride    |                      |          | 13200         | mg/Kg        | 10           | 4.00 |
|-------------|----------------------|----------|---------------|--------------|--------------|------|
| Parameter   | Flag                 | Cert     | Result        | Units        | Dilution     | RL   |
|             |                      |          | $\mathbf{RL}$ |              |              |      |
| Prep Batch: | 83717                | Sample 1 | Preparation:  | 2013-02-11   | Prepared By: | AR   |
| QC Batch:   | 98827                | Date An  | alyzed:       | 2013-02-11   | Analyzed By: | AR   |
| Analysis:   | Chloride (Titration) | Analytic | al Method:    | SM 4500-Cl B | Prep Method: | N/A  |
| Laboratory: | Midland              |          |               |              |              |      |

### Sample: 320673 - AH-1 1-1.5'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>TPH DRO - NEV<br>98965<br>83844 | V    | Date A | cal Method:<br>nalyzed:<br>Preparation: | S 8015 D<br>2013-02-15<br>2013-02-15 | Prep Method:<br>Analyzed By:<br>Prepared By: | '    |
|------------------------------------------------------|--------------------------------------------|------|--------|-----------------------------------------|--------------------------------------|----------------------------------------------|------|
|                                                      |                                            |      |        | $\mathbf{RL}$                           |                                      |                                              |      |
| Parameter                                            |                                            | Flag | Cert   | Result                                  | Units                                | Dilution                                     | RL   |
| DRO                                                  |                                            | ЈЪ   | 1      | <50.0                                   | mg/Kg                                | 1                                            | 50.0 |

| Report Date: February 15, 2013<br>112C05046 |      |      | ~~~    | Work Order: 13021102<br>COG/Willow A State #3 |          |                 |                     | Page Number: 8 of 36<br>Eddy Co., NM |  |  |
|---------------------------------------------|------|------|--------|-----------------------------------------------|----------|-----------------|---------------------|--------------------------------------|--|--|
| Surrogate                                   | Flag | Cert | Result | Units                                         | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits                   |  |  |
| n-Tricosane                                 |      |      | 127    | mg/Kg                                         | 1        | 100             | 127                 | 55.1 - 135.7                         |  |  |

### Sample: 320673 - AH-1 1-1.5'

| -                                        |      |      |          |             |               |          |        |            |            |
|------------------------------------------|------|------|----------|-------------|---------------|----------|--------|------------|------------|
| Laboratory: Midland<br>Analysis: TPH GRO |      |      | Analytic | al Method   | : S 8015      | 5 D      |        | Prep Metho | od: S 5035 |
| QC Batch: 98958                          |      |      | Date An  | alyzed:     | 2013-0        | )2-15    |        | Analyzed B | y: YG      |
| Prep Batch: 83839                        |      |      | Sample   | Preparation | n: 2013-0     | )2-15    |        | Prepared B | y: YG      |
|                                          |      |      |          |             | $\mathbf{RL}$ |          |        |            |            |
| Parameter                                | Flag |      | Cert     | F           | Result        | Uni      | ts     | Dilution   | RL         |
| GRO                                      |      |      | 1        |             | 4.89          | mg/K     | g      | 1          | 4.00       |
|                                          |      |      |          |             |               |          | Spike  | Percent    | Recovery   |
| Surrogate                                |      | Flag | Cert     | Result      | Units         | Dilution | Amount | Recovery   | Limits     |
| Trifluorotoluene (TFT)                   |      |      |          | 1.70        | mg/Kg         | 1        | 2.00   | 85         | 70 - 130   |
| 4-Bromofluorobenzene (4-BFB)             |      |      |          | 2.22        | mg/Kg         | 1        | 2.00   | 111        | 70 - 130   |

### Sample: 320674 - AH-1 2-2.5'

| Parameter   | Flag                 | Cert     | Result        | Units        | Dilution     | RL  |
|-------------|----------------------|----------|---------------|--------------|--------------|-----|
|             |                      |          | $\mathbf{RL}$ |              |              |     |
| Prep Batch: | 83717                | Sample 1 | Preparation:  | 2013-02-11   | Prepared By: | AR  |
| QC Batch:   | 98917                | Date An  | alyzed:       | 2013-02-13   | Analyzed By: | AR  |
| Analysis:   | Chloride (Titration) | Analytic | al Method:    | SM 4500-Cl B | Prep Method: | N/A |
| Laboratory: |                      |          |               |              |              |     |

## Sample: 320675 - AH-1 3-3.5'

| Laboratory: | Midland              |                     |              |              |     |
|-------------|----------------------|---------------------|--------------|--------------|-----|
| Analysis:   | Chloride (Titration) | Analytical Method:  | SM 4500-Cl B | Prep Method: | N/A |
| QC Batch:   | 98917                | Date Analyzed:      | 2013-02-13   | Analyzed By: | AR  |
| Prep Batch: | 83717                | Sample Preparation: | 2013-02-11   | Prepared By: | AR  |

continued ...

| Report Date<br>112C05046                             | e: February 15, 2013                              |         | ork Order: 13<br>G/Willow A \$          | Page Number: 9 of 30<br>Eddy Co., NM     |                                              |                 |
|------------------------------------------------------|---------------------------------------------------|---------|-----------------------------------------|------------------------------------------|----------------------------------------------|-----------------|
| sample 3206                                          | 75 continued                                      |         |                                         |                                          |                                              |                 |
| Parameter                                            | Flag                                              | Cert    | RL<br>Result                            | Units                                    | Dilution                                     | RL              |
| Parameter                                            | Flag                                              | Cert    | RL<br>Result                            | Units                                    | Dilution                                     | RL              |
| Chloride                                             |                                                   |         | 17800                                   | mg/Kg                                    | 10                                           | 4.00            |
| Sample: 32                                           | 20676 - AH-1 4-4.5'                               |         |                                         |                                          |                                              |                 |
| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98917<br>83717 | Date An | cal Method:<br>aalyzed:<br>Preparation: | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | N/A<br>AR<br>AR |
| Parameter                                            | Flag                                              | Cert    | ${ m RL}$ Result                        | Units                                    | Dilution                                     | RL              |
| Chloride                                             |                                                   |         | 18300                                   | mg/Kg                                    | 10                                           | 4.00            |
| Sample: 32                                           | 20677 - AH-1 5-5.5'                               |         |                                         |                                          |                                              |                 |
| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98917<br>83717 | Date An | al Method:<br>alyzed:<br>Preparation:   | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | N/A<br>AR<br>AR |
| Parameter                                            | Flag                                              | Cert    | RL<br>Result                            | Units                                    | Dilution                                     | RL              |
| Chloride                                             | riag                                              |         | 14700                                   | mg/Kg                                    | 10                                           | 4.00            |

### Sample: 320678 - AH-1 6-6.5'

| Laboratory: |                      |                     |              |              | /   |
|-------------|----------------------|---------------------|--------------|--------------|-----|
| Analysis:   | Chloride (Titration) | Analytical Method:  | SM 4500-Cl B | Prep Method: | N/A |
| QC Batch:   | 98917                | Date Analyzed:      | 2013-02-13   | Analyzed By: | AR  |
| Prep Batch: | 83717                | Sample Preparation: | 2013-02-11   | Prepared By: | AR  |

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|---------------------------------------------|-------|------|--------------------------------------|---------------------------------------|----------|---------------|
| Denometer                                   | Ele - | Cont | RL<br>Dorwlt                         | TIn:4a                                | Dilution | DI            |
| Parameter                                   | Flag  | Cert | Result                               | Units                                 | Dilution | $\mathbf{RL}$ |
| Chloride                                    |       |      | 14000                                | mg/Kg                                 | 10       | 4.00          |

## Sample: 320679 - AH-1 7-7.5'

,

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98917<br>83717 | Date An               | al Method:<br>alyzed:<br>Preparation: | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | ÁR            |
|------------------------------------------------------|---------------------------------------------------|-----------------------|---------------------------------------|------------------------------------------|----------------------------------------------|---------------|
|                                                      |                                                   |                       | $\mathbf{RL}'$                        |                                          |                                              |               |
| Parameter                                            | Flag                                              | $\operatorname{Cert}$ | Result                                | $\mathbf{Units}$                         | Dilution                                     | $\mathbf{RL}$ |
| Chloride                                             | ······                                            |                       | 8030                                  | mg/Kg                                    | 10                                           | 4.00          |

### Sample: 320680 - AH-1 8-8.5'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98917<br>83717 | <b>v</b> . |               | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | AR   |
|------------------------------------------------------|---------------------------------------------------|------------|---------------|------------------------------------------|----------------------------------------------|------|
|                                                      |                                                   |            | $\mathbf{RL}$ |                                          |                                              |      |
| Parameter                                            | Flag                                              | Cert       | Result        | Units                                    | Dilution                                     | RL   |
| Chloride                                             |                                                   |            | 3820          | mg/Kg                                    | 10                                           | 4.00 |

## Sample: 320681 - AH-1 9-9.5'

| Chloride    |                      |                     | 1980         | mg/Kg        | 10           | 4.00 |
|-------------|----------------------|---------------------|--------------|--------------|--------------|------|
| Parameter   | Flag                 | Cert                | RL<br>Result | Units        | Dilution     | RL   |
| Prep Batch: | 83717                | Sample Preparation: |              | 2013-02-11   | Prepared By: | AR   |
| QC Batch:   | 98917                | Date Analyzed:      |              | 2013-02-13   | Analyzed By: | AR   |
| Analysis:   | Chloride (Titration) | Analytic            | al Method:   | SM 4500-Cl B | Prep Method: | N/A  |
| Laboratory: | Midland              |                     |              |              |              |      |

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| 112C05046                      | COG/Willow A State #3 | Eddy Co., NM          |
|                                |                       |                       |

## Sample: 320682 - AH-2 0-1'

| Laboratory: Midland          |      |      |                 |            |         |          |          |            |               |
|------------------------------|------|------|-----------------|------------|---------|----------|----------|------------|---------------|
| Analysis: BTEX               |      | A    | nalytical       | Method:    | S 8021E | 3        |          | Prep Metho | d: S 5035     |
| QC Batch: 98888              |      | D    | ate Anal        | yzed:      | 2013-02 | -12      |          | Analyzed B | y: YG         |
| Prep Batch: 83781            |      | Sa   | ample Pr        | eparation: | 2013-02 | -12      |          | Prepared B | y: YG         |
|                              |      |      |                 |            | RL      |          |          |            |               |
| Parameter                    | Flag |      | $\mathbf{Cert}$ | Ι          | Result  | Units    | 5        | Dilution   | $\mathbf{RL}$ |
| Benzene                      | U    |      | 1               | <(         | 0.0200  | mg/Kg    | <u> </u> | 1          | 0.0200        |
| Toluene                      | υ    |      | 1               | <(         | ).0200  | mg/Kg    | S        | 1          | 0.0200        |
| Ethylbenzene                 | U    |      | 1               | <(         | 0.0200  | mg/Kg    | 5        | 1          | 0.0200        |
| Xylene                       | U    |      | 1               | <(         | ).0200  | mg/Kg    | 5        | 1          | 0.0200        |
|                              |      |      |                 |            |         |          | Spike    | Percent    | Recovery      |
| Surrogate                    |      | Flag | Cert            | Result     | Units   | Dilution | Amount   | Recovery   | Limits        |
| Trifluorotoluene (TFT)       | Qsr  | Qar  |                 | 2.35       | mg/Kg   | 1        | 2.00     | 118        | 79.5 - 108    |
| 4-Bromofluorobenzene (4-BFB) |      |      |                 | 2.15       | mg/Kg   | 1        | 2.00     | 108        | 71.4 - 108    |

### Sample: 320682 - AH-2 0-1'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98917<br>83717 | Date An | al Method:<br>alyzed:<br>Preparation: | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | AR            |
|------------------------------------------------------|---------------------------------------------------|---------|---------------------------------------|------------------------------------------|----------------------------------------------|---------------|
|                                                      |                                                   |         | $\mathbf{RL}$                         |                                          |                                              |               |
| Parameter                                            | Flag                                              | Cert    | Result                                | Units                                    | Dilution                                     | $\mathbf{RL}$ |
| Chloride                                             |                                                   |         | 1030                                  | mg/Kg                                    | 10                                           | 4.00          |

### Sample: 320682 - AH-2 0-1'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>TPH DRO - N<br>98841<br>83748 | EW   | Dat            | lytical Meth<br>e Analyzed:<br>ple Preparat | 2013-0        | 2-12                   | Prep Me<br>Analyzee<br>Preparec | By: CW                         |
|------------------------------------------------------|------------------------------------------|------|----------------|---------------------------------------------|---------------|------------------------|---------------------------------|--------------------------------|
| Parameter                                            |                                          | Flag | Cert           |                                             | $\mathbf{RL}$ | Units                  | Dilution                        | RL                             |
| DRO                                                  |                                          | Jb   | 1              | <5                                          | 0.0           | mg/Kg                  | 1                               | 50.0                           |
| Surrogate<br>n-Tricosane                             | Flag                                     | Cert | Result<br>86.0 | Units<br>mg/Kg                              | Dilution<br>1 | Spike<br>Amount<br>100 | Percent<br>Recovery<br>86       | Recovery<br>Limits<br>70 - 130 |

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|------------------------------------------------------------------|------|-----------------------------------------------|--------|-------------------|----------|-----------------|----------------------------------------|---------------------|
| Sample: 320682 - AH-2 0-1'                                       |      |                                               |        |                   |          |                 |                                        |                     |
| Laboratory:MidlandAnalysis:TPH GROQC Batch:98887Prep Batch:83781 |      | Analytic<br>Date An<br>Sample I               | •      | 2013-0            | )2-12    |                 | Prep Metho<br>Analyzed B<br>Prepared B | y: YG               |
|                                                                  |      |                                               |        | $\mathbf{RL}$     |          |                 |                                        |                     |
| Parameter                                                        | Flag | Cert                                          |        | $\mathbf{Result}$ | Uni      | ts              | Dilution                               | $\operatorname{RL}$ |
| GRO 2                                                            | U    | 1                                             |        | <4.00             | mg/k     | ίg              | 1                                      | 4.00                |
| Surrogate                                                        | Flag | Cert                                          | Result | Units             | Dilution | Spike<br>Amount | Percent<br>Recovery                    | Recovery<br>Limits  |
| Trifluorotoluene (TFT)                                           |      |                                               | 2.03   | mg/Kg             | 1        | 2.00            | 102                                    | 70 - 130            |
| 4-Bromofluorobenzene (4-BFB)                                     |      |                                               | 2.16   | mg/Kg             | 1        | 2.00            | 108                                    | 70 - 130            |

## Sample: 320683 - AH-2 1-1.5'

| Chloride               | 1.000                         |                     | 408          | mg/Kg                      | 5                            | 4.00 |
|------------------------|-------------------------------|---------------------|--------------|----------------------------|------------------------------|------|
| Parameter              | Flag                          | Cert                | RL<br>Result | Units                      | Dilution                     | RL   |
| Prep Batch:            | 83717                         | Sample Preparation: |              | 2013-02-11                 | Prepared By:                 | AR   |
| Analysis:<br>QC Batch: | Chloride (Titration)<br>98917 | Date Analyzed:      |              | SM 4500-Cl B<br>2013-02-13 | Prep Method:<br>Analyzed By: | ,    |
| Laboratory:            | Midland                       |                     |              |                            |                              |      |

### Sample: 320684 - AH-2 2-2.5'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | alysis: Chloride (Titration) |      | al Method:<br>alyzed:<br>Preparation: | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | AR            |
|------------------------------------------------------|------------------------------|------|---------------------------------------|------------------------------------------|----------------------------------------------|---------------|
|                                                      |                              |      | $\mathbf{RL}$                         |                                          |                                              |               |
| Parameter                                            | Flag                         | Cert | $\mathbf{Result}$                     | Units                                    | Dilution                                     | $\mathbf{RL}$ |
| Chloride                                             |                              |      | 946                                   | mg/Kg                                    | 5                                            | 4.00          |

| Report Date<br>112C05046                             | : February 15, 2013                               |                                         | ork Order: 136<br>G/Willow A S          |                                          | Page Number: 13 of 36<br>Eddy Co., NM        |                          |
|------------------------------------------------------|---------------------------------------------------|-----------------------------------------|-----------------------------------------|------------------------------------------|----------------------------------------------|--------------------------|
| Sample: 32                                           | 0685 - AH-2 3-3.5'                                |                                         |                                         |                                          |                                              |                          |
| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98918<br>83717 | Date A                                  | cal Method:<br>nalyzed:<br>Preparation: | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | N/A<br>AR<br>AR          |
|                                                      |                                                   |                                         | RL                                      |                                          |                                              |                          |
| Parameter                                            | Flag                                              | Cert                                    | Result                                  | Units                                    | Dilution                                     | RL                       |
| Chloride                                             |                                                   |                                         | 282                                     | mg/Kg                                    | 5                                            | 4.00                     |
| Sample: 32                                           | 0686 - AH-2 4-4.5'                                |                                         |                                         |                                          |                                              |                          |
| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98918<br>83717 | Date A                                  | cal Method:<br>nalyzed:<br>Preparation: | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | N/A<br>AR<br>AR          |
|                                                      |                                                   |                                         | $\mathbf{RL}$                           |                                          |                                              |                          |
| Parameter                                            | Flag                                              | Cert                                    | Result                                  | Units                                    | Dilution                                     | RL                       |
| Chloride                                             |                                                   | ······································  | 220                                     | mg/Kg                                    | 5                                            | 4.00                     |
| Sample: 32                                           | 0687 - AH-2 5-5.5'                                |                                         |                                         |                                          |                                              |                          |
| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98918<br>83717 | Date A                                  | cal Method:<br>nalyzed:<br>Preparation: | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | N/A<br>AR<br>AR          |
| •                                                    | ~~~                                               | <b>a</b> .                              | RL                                      |                                          |                                              |                          |
| Parameter<br>Chloride                                | Flag                                              | Cert                                    | Result<br>205                           | Units                                    | Dilution<br>5                                | $\frac{\text{RL}}{4.00}$ |
| Chloride                                             |                                                   | • • • • • • • • • • • • • • • • • • • • | <b>4</b> 00                             | mg/Kg                                    | 0                                            | 4.00                     |

### Sample: 320688 - AH-2 6-6.5'

| Laboratory: | Midland              |                     |              |              |     |
|-------------|----------------------|---------------------|--------------|--------------|-----|
| Analysis:   | Chloride (Titration) | Analytical Method:  | SM 4500-Cl B | Prep Method: | N/A |
| QC Batch:   | 98918                | Date Analyzed:      | 2013-02-13   | Analyzed By: | AR  |
| Prep Batch: | 83717                | Sample Preparation: | 2013-02-11   | Prepared By: | AR  |

| Report Date: February 15, 2013<br>112C05046 |      |      | ork Order: 130211<br>G/Willow A State | Page Number: 14 of 3<br>Eddy Co., NM |          |               |
|---------------------------------------------|------|------|---------------------------------------|--------------------------------------|----------|---------------|
| Parameter                                   | Flag | Cert | RL<br>Result                          | Units                                | Dilution | $\mathbf{RL}$ |
| Chloride                                    | ¥    |      | 440                                   | mg/Kg                                | 5        | 4.00          |

### Sample: 320689 - AH-2 7-7.5'

| Laboratory:<br>Analysis:<br>QC Batch:<br>Prep Batch: | Midland<br>Chloride (Titration)<br>98918<br>83717 | Date An | al Method:<br>alyzed:<br>Preparation: | SM 4500-Cl B<br>2013-02-13<br>2013-02-11 | Prep Method:<br>Analyzed By:<br>Prepared By: | AR            |
|------------------------------------------------------|---------------------------------------------------|---------|---------------------------------------|------------------------------------------|----------------------------------------------|---------------|
| Parameter                                            | Flag                                              | Cert    | RL<br>Result                          | Units                                    | Dilution                                     | $\mathbf{RL}$ |
| Chloride                                             |                                                   |         | 186                                   | mg/Kg                                    | 5                                            | 4.00          |

### Sample: 320690 - AH-2 8-8.5'

| Flag             | Cert                               | RL<br>Result                           | Units                                              | Dilution                                                                 | RL                                                                                               |
|------------------|------------------------------------|----------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|                  |                                    |                                        |                                                    |                                                                          |                                                                                                  |
| 7                | Sample I                           | Preparation:                           | 2013-02-11                                         | Prepared By:                                                             | AR                                                                                               |
| ride (Titration) |                                    |                                        | SM 4500-Cl B<br>2013-02-13                         | •                                                                        |                                                                                                  |
| ,                | and<br>oride (Titration)<br>8<br>7 | ride (Titration) Analytic<br>8 Date An | oride (Titration)Analytical Method:8Date Analyzed: | oride (Titration)Analytical Method:SM 4500-Cl B8Date Analyzed:2013-02-13 | oride (Titration)Analytical Method:SM 4500-Cl BPrep Method:8Date Analyzed:2013-02-13Analyzed By: |

### Sample: 320691 - AH-2 9-9.5'

| Laboratory: | Midland              |          |                   |              |              |               |
|-------------|----------------------|----------|-------------------|--------------|--------------|---------------|
| Analysis:   | Chloride (Titration) | Analytic | al Method:        | SM 4500-Cl B | Prep Method: | N/A           |
| QC Batch:   | 98918                | Date An  | alyzed:           | 2013-02-13   | Analyzed By: | AR            |
| Prep Batch: | 83717                | Sample I | Preparation:      | 2013-02-11   | Prepared By: | AR            |
|             |                      |          | $\mathbf{RL}$     |              |              |               |
| Parameter   | Flag                 | Cert     | $\mathbf{Result}$ | Units        | Dilution     | $\mathbf{RL}$ |
| Chloride    |                      |          | 444               | mg/Kg        | 5            | 4.00          |

| Report Date<br>112C05046                                                                                                                                                                                                              | : February 15, 2013                   |         | ork Order: 130<br>G/Willow A S                                   |                                                            | Page Number: 15 of<br>Eddy Co., N                                   |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------|------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------|------|
| Sample: 32                                                                                                                                                                                                                            | 0692 - Background 0-1'                |         |                                                                  |                                                            |                                                                     |      |
| Laboratory:                                                                                                                                                                                                                           | Midland                               |         |                                                                  |                                                            |                                                                     |      |
| Analysis:                                                                                                                                                                                                                             | Chloride (Titration)                  | Analyti | cal Method:                                                      | SM 4500-Cl B                                               | Prep Method:                                                        | N/A  |
| QC Batch:                                                                                                                                                                                                                             | 98918                                 | Date A  | nalyzed:                                                         | 2013-02-13                                                 | Analyzed By:                                                        | AR   |
| Prep Batch:                                                                                                                                                                                                                           | 83717                                 | Sample  | Preparation:                                                     | 2013-02-11                                                 | Prepared By:                                                        | AR   |
|                                                                                                                                                                                                                                       |                                       |         | RL                                                               |                                                            |                                                                     |      |
| Parameter                                                                                                                                                                                                                             | Flag                                  | Cert    | Result                                                           | Units                                                      | Dilution                                                            | RL   |
| Chloride                                                                                                                                                                                                                              |                                       |         | 76.5                                                             | mg/Kg                                                      | 5                                                                   | 4.00 |
| Sample: 320693 - Background 1.5-2'         Laboratory:       Midland         Analysis:       Chloride (Titration)         QC Batch:       98918         Prep Batch:       83717         Parameter       Flag         Chloride       u |                                       | Date A  | cal Method:<br>nalyzed:<br>Preparation:<br>RL<br>Result<br><20.0 | SM 4500-Cl B<br>2013-02-13<br>2013-02-11<br>Units<br>mg/Kg | Prep Method: 1<br>Analyzed By: 2<br>Prepared By: 2<br>Dilution<br>5 |      |
| Sample: 32                                                                                                                                                                                                                            | 0694 - Background 3.5-4'              |         |                                                                  |                                                            |                                                                     |      |
| Laboratory:                                                                                                                                                                                                                           | Midland                               |         |                                                                  |                                                            |                                                                     |      |
| Analysis:                                                                                                                                                                                                                             | Chloride (Titration)                  | Analyti | cal Method:                                                      | SM 4500-Cl B                                               | Prep Method:                                                        | N/A  |
| QC Batch:                                                                                                                                                                                                                             | 98919                                 | Date A  |                                                                  | 2013-02-13                                                 | Analyzed By:                                                        | AR   |
| Prep Batch:                                                                                                                                                                                                                           | 83717                                 |         | Preparation:                                                     | 2013-02-11                                                 | Prepared By:                                                        | AR   |
|                                                                                                                                                                                                                                       |                                       |         | RL                                                               |                                                            | •                                                                   |      |
| Parameter                                                                                                                                                                                                                             | $\mathbf{Flag}$                       | Cert    | Result                                                           | Units                                                      | Dilution                                                            | RL   |
| <u>al 1 - 1 - 1</u>                                                                                                                                                                                                                   | · · · · · · · · · · · · · · · · · · · |         | .00.0                                                            | 177                                                        |                                                                     | 1 00 |

### Sample: 320695 - Background 5.5-6'

Chloride

| Laboratory: | Midland              |                     |              |              |     |
|-------------|----------------------|---------------------|--------------|--------------|-----|
| Analysis:   | Chloride (Titration) | Analytical Method:  | SM 4500-Cl B | Prep Method: | N/A |
| QC Batch:   | 98919                | Date Analyzed:      | 2013-02-13   | Analyzed By: | AR  |
| Prep Batch: | 83717                | Sample Preparation: | 2013-02-11   | Prepared By: | AR  |

<20.0

mg/Kg

4.00

5

| Report Date: February 15, 2013<br>112C05046 |      |      | ork Order: 130211<br>G/Willow A State |       | Page Numbe<br>Edd | r: 16 of 36<br>y Co., NM |
|---------------------------------------------|------|------|---------------------------------------|-------|-------------------|--------------------------|
| Parameter                                   | Flag | Cert | RL<br>Result                          | Units | Dilution          | RL                       |
| Chloride                                    | U    |      | <20.0                                 | mg/Kg | 5                 | 4.00                     |

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Report Date: February 15, 2013 112C05046 Work Order: 13021102 COG/Willow A State #3 Page Number: 17 of 36 Eddy Co., NM

# Method Blanks

| Method Blank (1)                              | QC B | atch: 98827 |        |                        |                          |                    |                        |                      |               |
|-----------------------------------------------|------|-------------|--------|------------------------|--------------------------|--------------------|------------------------|----------------------|---------------|
| QC Batch: 98827                               |      |             |        | nalyzed:               | 2013-02-11               |                    |                        | Analyzed             |               |
| Prep Batch: 83717                             |      |             | QU Pr  | eparation:             | 2013-02-11               |                    |                        | Prepared             | l By: AR      |
|                                               |      |             |        |                        |                          | MDL                |                        |                      |               |
| Parameter                                     |      | Flag        |        | Cert                   |                          | Result             |                        | Units                | RL            |
| Chloride                                      |      |             |        |                        |                          | <3.85              |                        | mg/Kg                | 4             |
|                                               |      |             |        |                        |                          |                    |                        |                      |               |
|                                               |      |             |        |                        |                          |                    |                        |                      |               |
| Method Blank (1)                              | QC B | atch: 98841 |        |                        |                          |                    |                        |                      |               |
| QC Batch: 98841                               |      |             |        | nalyzed:               | 2013-02-12               |                    |                        | Analyzed             |               |
| Prep Batch: 83748                             |      |             | QC Pre | eparation:             | 2013-02-11               |                    |                        | Prepared             | By: CW        |
|                                               |      |             |        |                        |                          | MDI                |                        |                      |               |
| Parameter                                     |      | Flag        |        | Cert                   |                          | MDL<br>Result      |                        | Units                | $\mathbf{RL}$ |
| DRO                                           |      |             |        | 1                      |                          | 8.97               |                        | mg/Kg                | 50            |
|                                               |      |             |        |                        |                          |                    | Spike                  | Percent              | Recovery      |
| Surrogate                                     | Flag | Cert        | Result | Units                  | Dilutio                  |                    | mount                  | Recovery             | Limits        |
| n-Tricosane                                   |      |             | 108    | mg/Kg                  | <u> </u>                 |                    | 100                    | 108                  | 70 - 130      |
| Method Blank (1)                              | QC B | atch: 98887 | _      |                        |                          |                    |                        |                      |               |
| QC Batch: 98887<br>Prep Batch: 83781          |      |             |        | nalyzed:<br>eparation: | 2013-02-12<br>2013-02-12 |                    |                        | Analyzed<br>Prepared |               |
|                                               |      |             | 4011   | opuration.             | 2010 02 12               |                    |                        | 11000100             | . Dj. 10      |
| Parameter                                     |      | Flag        |        | Cert                   |                          | MDL<br>Result      |                        | Units                | RL            |
| GRO                                           |      |             |        | 1                      |                          | <2.32              |                        | mg/Kg                | 4             |
|                                               |      |             |        |                        |                          |                    | Spike                  | Percent              | Recovery      |
| Surrogate                                     |      |             |        |                        |                          |                    |                        |                      |               |
|                                               |      | Flag        | Cert   | Result                 | Units                    | Dilution           | Amount                 | Recovery             | Limits        |
| Trifluorotoluene (TFT<br>4-Bromofluorobenzene |      | Flag        | Cert   | Result<br>1.94<br>1.75 | Units<br>mg/Kg<br>mg/Kg  | Dilution<br>1<br>1 | Amount<br>2.00<br>2.00 | Recovery<br>97<br>88 | •             |

| Report Date: February 15, 2013<br>112C05046 |       |        | Work Order: 13021102<br>COG/Willow A State #3 |         |           |           |           | Page Number: 18 of 36<br>Eddy Co., NM |          |               |
|---------------------------------------------|-------|--------|-----------------------------------------------|---------|-----------|-----------|-----------|---------------------------------------|----------|---------------|
| Method Blank (1)                            | QC Ba | tch: 9 | 8888                                          |         |           |           |           |                                       |          |               |
| QC Batch: 98888                             |       |        |                                               | Date Ar | nalyzed:  | 2013-02-1 | 2         |                                       | Analyze  | d By: YG      |
| Prep Batch: 83781                           |       |        |                                               | QC Prej | paration: | 2013-02-1 | .2        |                                       | Prepare  | d By: YG      |
|                                             |       |        |                                               |         |           |           | MDL       |                                       |          |               |
| Parameter                                   |       |        | Flag                                          |         | Cert      |           | Result    |                                       | Units    | $\mathbf{RL}$ |
| Benzene                                     |       |        |                                               |         | 1         |           | < 0.00810 |                                       | mg/Kg    | 0.02          |
| Toluene                                     |       |        |                                               |         | 1         |           | < 0.00750 |                                       | mg/Kg    | 0.02          |
| Ethylbenzene                                |       |        |                                               |         | 1         |           | <0.00730  |                                       | mg/Kg    | 0.02          |
| Xylene                                      |       |        |                                               |         | 1         |           | < 0.00700 |                                       | mg/Kg    | 0.02          |
|                                             |       |        |                                               |         |           |           |           | Spike                                 | Percent  | Recovery      |
| Surrogate                                   |       |        | Flag                                          | Cert    | Result    | Units     | Dilution  | Amount                                | Recovery | Limits        |
| Trifluorotoluene (TFT)                      |       | Qsr    | Qar                                           |         | 2.31      | mg/Kg     | 1         | 2.00                                  | 116      | 79.5 - 108    |
| 4-Bromofluorobenzene (4                     | -BFB) |        |                                               |         | 2.01      | mg/Kg     | 1         | 2.00                                  | 100      | 71.4 - 108    |

| Method Blank (1) | QC Batch: 98917 |
|------------------|-----------------|
|                  |                 |

| QC Batch:<br>Prep Batch: | 98917<br>83717 |      | Date Analyzed:<br>QC Preparation: |        | Analyzed By:<br>Prepared By: |               |
|--------------------------|----------------|------|-----------------------------------|--------|------------------------------|---------------|
|                          |                |      |                                   | MDL    |                              |               |
| Parameter                |                | Flag | $\operatorname{Cert}$             | Result | Units                        | $\mathbf{RL}$ |
| Chloride                 |                |      |                                   | <3.85  | mg/Kg                        | 4             |
|                          |                | _    |                                   |        |                              |               |

| Method Blank (1) | QC Batch: 98918 |
|------------------|-----------------|
|                  |                 |

| QC Batch:<br>Prep Batch: | 98918<br>83717 |      | Date Analyzed:<br>QC Preparation: |               | Analyzed By:<br>Prepared By: |    |
|--------------------------|----------------|------|-----------------------------------|---------------|------------------------------|----|
|                          |                |      |                                   | MDL           |                              |    |
| Parameter                |                | Flag | Cert                              | Result        | Units                        | RL |
| Chloride                 |                |      |                                   | <b>\$3.85</b> | mg/Kg                        | 4  |

| Method Blank (1) QC | Batch: 98919 |
|---------------------|--------------|
|---------------------|--------------|

| QC Batch:   | 98919 | Date Analyzed:  | 2013-02-13 | Analyzed By: | AR            |
|-------------|-------|-----------------|------------|--------------|---------------|
| Prep Batch: | 83717 | QC Preparation: | 2013-02-11 | Prepared By: | $\mathbf{AR}$ |

| Report Date: February 15, 2013<br>112C05046 |       | Work Order: 1<br>COG/Willow A | Page Number: 19 of 36<br>Eddy Co., NM |       |               |
|---------------------------------------------|-------|-------------------------------|---------------------------------------|-------|---------------|
| Parameter                                   | Flag  | Cert                          | MDL<br>Result                         | Units | $\mathbf{RL}$ |
|                                             | 1.166 |                               |                                       |       |               |
| Chloride                                    |       |                               | <3.85                                 | mg/Kg | 4             |

| QC Batch: 98958<br>Prep Batch: 83839                   |      |      | nalyzed:<br>paration: | 2013-02-15<br>2013-02-15 |               | Analyzed By: YG<br>Prepared By: YG        |                     |                      |  |
|--------------------------------------------------------|------|------|-----------------------|--------------------------|---------------|-------------------------------------------|---------------------|----------------------|--|
| Parameter                                              | Flag |      | Cert                  |                          | MDL<br>Result |                                           | Units               | $\operatorname{RL}$  |  |
| GRO                                                    |      |      | 1                     |                          | <2.32         | ]                                         | mg/Kg               | 4                    |  |
| Surrogate                                              | Flag | Cert | Result                | Units                    | Dilution      | Spike<br>Amount                           | Percent<br>Recovery | Recovery<br>Limits   |  |
| Trifluorotoluene (TFT)<br>4-Bromofluorobenzene (4-BFB) |      |      | 1.73<br>1.89          | mg/Kg<br>mg/Kg           | 1<br>1        | $\begin{array}{c} 2.00\\ 2.00\end{array}$ | 86<br>94            | 70 - 130<br>70 - 130 |  |

## Method Blank (1) QC Batch: 98965

| QC Batch:<br>Prep Batch: |     |      |      | nalyzed:<br>paration: | 2013-02-15<br>2013-02-15 |          | Analyzed By<br>Prepared By |                     |                    |
|--------------------------|-----|------|------|-----------------------|--------------------------|----------|----------------------------|---------------------|--------------------|
| Parameter                |     |      | Fla  | g                     | Cert                     |          | MDL<br>Result              | Units               | $\mathbf{RL}$      |
| DRO                      |     |      |      |                       | 1                        |          | 23.2                       | mg/Kg               | 50                 |
| Surrogate                |     | Flag | Cert | Result                | Units                    | Dilution | Spike<br>Amount            | Percent<br>Recovery | Recovery<br>Limits |
| n-Tricosane              | Qsr | Qur  |      | 144                   | mg/Kg                    | 1 ·      | 100                        | 144                 | 55.1 - 135.7       |

## Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

| QC Batch:<br>Prep Batch: | Date Analyzed:<br>QC Preparation: |   | Analyzed By:<br>Prepared By: |   |
|--------------------------|-----------------------------------|---|------------------------------|---|
|                          | T CO                              | a | <br>-                        | _ |

|          |              |   | LCS    |       |      | Spike  | Matrix |      | Rec.     |
|----------|--------------|---|--------|-------|------|--------|--------|------|----------|
| Param    | $\mathbf{F}$ | С | Result | Units | Dil. | Amount | Result | Rec. | Limit    |
| Chloride |              |   | 2770   | mg/Kg | 1    | 2500   | <3.85  | 111  | 85 - 115 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|          |              |   | LCSD   |       |      | Spike  | Matrix |      | Rec.     |     | RPD   |
|----------|--------------|---|--------|-------|------|--------|--------|------|----------|-----|-------|
| Param    | $\mathbf{F}$ | С | Result | Units | Dil. | Amount | Result | Rec. | Limit    | RPD | Limit |
| Chloride |              |   | 2570   | mg/Kg | 1    | 2500   | <3.85  | 103  | 85 - 115 | 8   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Laboratory Control Spike (LCS-1)

| QC Batch:<br>Prep Batch: | Date Analyzed:<br>QC Preparation: |       | Analyzed By<br>Prepared By | ,    |
|--------------------------|-----------------------------------|-------|----------------------------|------|
|                          | LCS                               | Spike | Matrix                     | Rec. |

|       |              |   | LOS    |       |      | эріке  | Wattix |      | nec.     |  |
|-------|--------------|---|--------|-------|------|--------|--------|------|----------|--|
| Param | $\mathbf{F}$ | С | Result | Units | Dil. | Amount | Result | Rec. | Limit    |  |
| DRO   |              | 1 | 292    | mg/Kg | 1    | 250    | 8.97   | 113  | 70 - 130 |  |

| Param                   | F               | С    | $\begin{array}{c} \mathrm{LCSD} \\ \mathrm{Result} \end{array}$ | Units       | Dil.    | Spike<br>Amount | Matrix<br>Result | Rec.    | Rec.<br>Limit | RPD | RPD<br>Limit |
|-------------------------|-----------------|------|-----------------------------------------------------------------|-------------|---------|-----------------|------------------|---------|---------------|-----|--------------|
| DRO                     | <b>.</b>        | 1    | 272                                                             | mg/Kg       | 1       | 250             | 8.97             | 105     | 70 - 130      | 7   | 20           |
| Percent recovery is bas | ed on the spike | resu | lt. RPD                                                         | is based or | n the s | pike and sp     | ike duplic       | ate res | ult.          |     |              |
|                         |                 |      | τC                                                              | an .        |         |                 | G 11             | 10      | 10 T CC       | רוי | Dee          |

|             |     |     | LCS    | LCSD   |       |      | Spike  | LCS  | LCSD | Rec.     |
|-------------|-----|-----|--------|--------|-------|------|--------|------|------|----------|
| Surrogate   |     |     | Result | Result | Units | Dil. | Amount | Rec. | Rec. | Limit    |
| n-Tricosane | Qør | Qor | 144    | 112    | mg/Kg | 1    | 100    | 144  | 112  | 70 - 130 |

| Report Date: February 15, 2013<br>112C05046                                                                                                                                                                          |       |             |                                                                                                    |                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | : 13021102<br>A State #                                                                             |                                                                                           |                                                                                          | P                                                                                         |                                                                               |                                                                 | 21 of 36<br>Co., NM                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Laboratory Control Spike (L                                                                                                                                                                                          | CS-   | 1)          |                                                                                                    |                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                     |                                                                                           |                                                                                          |                                                                                           |                                                                               |                                                                 |                                                                                                                                                                                         |
| QC Batch: 98887                                                                                                                                                                                                      |       |             | Da                                                                                                 | te Analyz                                                                                                       | zed: 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 013-02-12                                                                                           |                                                                                           |                                                                                          |                                                                                           | Analy                                                                         | zed By                                                          | r: YG                                                                                                                                                                                   |
| Prep Batch: 83781                                                                                                                                                                                                    |       |             |                                                                                                    | C Prepara                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 013-02-12                                                                                           |                                                                                           |                                                                                          |                                                                                           | -                                                                             | red By                                                          |                                                                                                                                                                                         |
|                                                                                                                                                                                                                      |       |             |                                                                                                    | LCS                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                     | Spil                                                                                      | ce N                                                                                     | Aatrix                                                                                    |                                                                               |                                                                 | Rec.                                                                                                                                                                                    |
| Param                                                                                                                                                                                                                |       | F           | С                                                                                                  | Result                                                                                                          | Uni                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                     |                                                                                           |                                                                                          | Result                                                                                    | Re                                                                            |                                                                 | Limit                                                                                                                                                                                   |
| GRO                                                                                                                                                                                                                  |       |             | 1                                                                                                  | 20.1                                                                                                            | mg/l                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Kg 1                                                                                                | 20.                                                                                       | 0 •                                                                                      | <2.32                                                                                     | 10                                                                            | )0 '                                                            | 70 - 130                                                                                                                                                                                |
| Percent recovery is based on the                                                                                                                                                                                     | spik  | e res       | ult. RP                                                                                            | D is base                                                                                                       | d on the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | spike and                                                                                           | spike dup                                                                                 | olicate re                                                                               | sult.                                                                                     |                                                                               |                                                                 |                                                                                                                                                                                         |
|                                                                                                                                                                                                                      |       | _           | LCS                                                                                                |                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Spike                                                                                               |                                                                                           |                                                                                          |                                                                                           | lec.                                                                          |                                                                 | RPD                                                                                                                                                                                     |
| Param                                                                                                                                                                                                                | F     | C           | Resu                                                                                               |                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                     |                                                                                           |                                                                                          |                                                                                           | mit                                                                           | RPD                                                             | Limit                                                                                                                                                                                   |
| GRO                                                                                                                                                                                                                  |       | 1           | 19.6                                                                                               | 3 mg/l                                                                                                          | Kg 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 20.0                                                                                                | <2.3                                                                                      | 2 98                                                                                     | 70                                                                                        | - 130                                                                         | 2                                                               | 20                                                                                                                                                                                      |
| Percent recovery is based on the                                                                                                                                                                                     | spik  | e res       | ult. RP                                                                                            | 'D is base                                                                                                      | d on the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | spike and                                                                                           | spike dup                                                                                 | olicate re                                                                               | sult.                                                                                     |                                                                               |                                                                 |                                                                                                                                                                                         |
|                                                                                                                                                                                                                      |       |             |                                                                                                    | LCS I                                                                                                           | LCSD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                     |                                                                                           | Spike                                                                                    | LCS                                                                                       | LC                                                                            | $\mathbf{SD}$                                                   | Rec.                                                                                                                                                                                    |
| Surrogate                                                                                                                                                                                                            |       |             | R                                                                                                  | lesult F                                                                                                        | Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Units                                                                                               | Dil. A                                                                                    | mount                                                                                    | Rec.                                                                                      | Re                                                                            | ec.                                                             | Limit                                                                                                                                                                                   |
|                                                                                                                                                                                                                      |       |             |                                                                                                    |                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                     |                                                                                           |                                                                                          |                                                                                           |                                                                               |                                                                 |                                                                                                                                                                                         |
| Trifluorotoluene (TFT)                                                                                                                                                                                               |       |             |                                                                                                    | 2.37                                                                                                            | 2.36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | mg/Kg                                                                                               | 1                                                                                         | 2.00                                                                                     | 118                                                                                       | 11                                                                            | 8 1                                                             | 70 - 130                                                                                                                                                                                |
| Trifluorotoluene (TFT)<br>4-Bromofluorobenzene (4-BFB)                                                                                                                                                               |       |             |                                                                                                    | 2.37<br>2.10                                                                                                    | 2.36<br>2.12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | mg/Kg<br>mg/Kg                                                                                      | 1<br>1                                                                                    | 2.00<br>2.00                                                                             | 118<br>105                                                                                | 11                                                                            |                                                                 | 70 - 130<br>70 - 130                                                                                                                                                                    |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888                                                                                                                                       | cs-   | 1)          | Da                                                                                                 | 2.10<br>.te Analyz<br>C Prepara                                                                                 | 2.12<br>zed: 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                     | 1                                                                                         | 2.00                                                                                     | 105                                                                                       | 1(                                                                            | 26 Zed By<br>red By                                             | 70 - 130<br>: YG<br>: YG                                                                                                                                                                |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781                                                                                                                  | CS-   |             | Da<br>QC                                                                                           | 2.10<br>.te Analyz<br>C Prepara<br>LCS                                                                          | 2.12<br>ed: 24<br>tion: 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | mg/Kg<br>013-02-12<br>013-02-12                                                                     | 1<br>Spike                                                                                | 2.00<br>Ma                                                                               | 105<br>trix                                                                               | 1(<br>Analy<br>Prepa                                                          | 26 y<br>zed By<br>red By                                        | 70 - 130<br>: YG<br>: YG<br>Rec.                                                                                                                                                        |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781<br>Param                                                                                                         | CS-   | 1)<br>F     | Da<br>QC<br>C                                                                                      | 2.10<br>.te Analyz<br>C Prepara<br>LCS<br>Result                                                                | 2.12<br>ed: 24<br>tion: 24<br>Units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.                                                             | 1<br>Spike<br>Amount                                                                      | 2.00<br>Ma<br>Res                                                                        | 105<br>trix<br>sult                                                                       | 1(<br>Analy<br>Prepa<br>Rec.                                                  | 26 y<br>zed By<br>red By                                        | 70 - 130<br>: YG<br>: YG<br>Rec.<br>Limit                                                                                                                                               |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene                                                                                              | CS-   |             | Da<br>QC<br>C                                                                                      | 2.10<br>te Analyz<br>C Prepara<br>LCS<br><u>Result</u><br>1.81                                                  | 2.12<br>zed: 2<br>tion: 2<br>Units<br>mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.<br>1                                                        | 1<br>Spike<br>Amount<br>2.00                                                              | 2.00<br>Ma<br>Res<br><0.0                                                                | 105<br>trix<br>sult<br>0810                                                               | 1(<br>Analy<br>Prepa<br>Rec.<br>90                                            | 2ed By<br>red By<br>. 1<br>72.                                  | 70 - 130<br>: YG<br>: YG<br>Rec.<br>Limit<br>4 - 120                                                                                                                                    |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene<br>Toluene                                                                                   | CS-   |             | Da<br>QC<br>C                                                                                      | 2.10<br>te Analyz<br>C Prepara<br>LCS<br><u>Result</u><br>1.81<br>1.89                                          | 2.12<br>ed: 2<br>tion: 2<br>Units<br>mg/Kg<br>mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.<br>1<br>1                                                   | 1<br>Spike<br>Amount<br>2.00<br>2.00                                                      | 2.00<br>Ma<br>Res<br><0.0<br><0.0                                                        | 105<br>trix<br>sult<br>0810<br>0750                                                       | Analy<br>Prepa<br>Rec.<br>90<br>94                                            | 2ed By<br>red By<br>. 1<br>72.<br>77                            | <ul> <li>YG</li> <li>YG</li> <li>YG</li> <li>Rec.</li> <li>Limit</li> <li>4 - 120</li> <li>7 - 120</li> </ul>                                                                           |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene<br>Toluene<br>Ethylbenzene                                                                   | CS-   |             | Da<br>QC<br><u>C</u><br>1<br>1                                                                     | 2.10<br>te Analyz<br>C Prepara<br>LCS<br>Result<br>1.81<br>1.89<br>2.06                                         | 2.12<br>ed: 2<br>tion: 2<br>Units<br>mg/Kg<br>mg/Kg<br>mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.<br>1<br>1<br>1                                              | 1<br>Spike<br><u>Amount</u><br>2.00<br>2.00<br>2.00                                       | 2.00<br>Mai<br>Res<br><0.0<br><0.0<br><0.0                                               | 105<br>trix<br>sult<br>0810<br>0750<br>0730                                               | Analy<br>Prepa<br>Rec.<br>90<br>94<br>103                                     | 2ed By<br>red By<br>. 1<br>72<br>77<br>71.                      | <ul> <li>YG</li> <li>YG</li> <li>YG</li> <li>Rec.</li> <li>Limit</li> <li>4 - 120</li> <li>7 - 120</li> <li>8 - 120</li> </ul>                                                          |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene<br>Toluene<br>Ethylbenzene<br>Xylene                                                         |       | F           |                                                                                                    | 2.10<br>te Analyz<br>C Prepara<br>LCS<br>Result<br>1.81<br>1.89<br>2.06<br>6.42                                 | 2.12<br>eed: 2<br>tion: 2<br><u>Units</u><br>mg/Kg<br>mg/Kg<br>mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.<br>1<br>1<br>1<br>1<br>1                                    | 1<br>Spike<br><u>Amount</u><br>2.00<br>2.00<br>2.00<br>6.00                               | 2.00<br>Mai<br>Res<br><0.0<br><0.0<br><0.0<br><0.0<br><0.0                               | 105<br>trix<br>sult<br>0810<br>0750<br>0730<br>0700                                       | Analy<br>Prepa<br>Rec.<br>90<br>94                                            | 2ed By<br>red By<br>. 1<br>72<br>77<br>71.                      | <ul> <li>YG</li> <li>YG</li> <li>YG</li> <li>Rec.</li> <li>Limit</li> <li>4 - 120</li> <li>7 - 120</li> </ul>                                                                           |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene<br>Toluene<br>Ethylbenzene<br>Xylene                                                         |       | F           |                                                                                                    | 2.10<br>te Analyz<br>Prepara<br>LCS<br>Result<br>1.81<br>1.89<br>2.06<br>6.42<br>D is based                     | 2.12<br>eed: 2<br>tion: 2<br><u>Units</u><br>mg/Kg<br>mg/Kg<br>mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.<br>1<br>1<br>1<br>1<br>1<br>1<br>spike and                  | 1<br>Spike<br><u>Amount</u><br>2.00<br>2.00<br>2.00<br>6.00                               | 2.00<br>Mai<br>Res<br><0.0<br><0.0<br><0.0<br><0.0<br><0.0                               | 105<br>trix<br>sult<br>0810<br>0750<br>0730<br>0730<br>0700<br>sult.                      | Analy<br>Prepa<br>Rec.<br>90<br>94<br>103                                     | 2ed By<br>red By<br>. 1<br>72<br>77<br>71.                      | <ul> <li>YG</li> <li>YG</li> <li>YG</li> <li>Rec.</li> <li>Limit</li> <li>4 - 120</li> <li>7 - 120</li> <li>8 - 120</li> </ul>                                                          |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene<br>Toluene<br>Ethylbenzene<br>Xylene<br>Percent recovery is based on the                     |       | F           | Da<br>QC<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 2.10<br>te Analyz<br>C Prepara<br>LCS<br>Result<br>1.81<br>1.89<br>2.06<br>6.42<br>D is based                   | 2.12<br>eed: 2<br>tion: 2<br><u>Units</u><br>mg/Kg<br>mg/Kg<br>mg/Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.<br>1<br>1<br>1<br>1<br>1                                    | 1<br>Spike<br>Amount<br>2.00<br>2.00<br>2.00<br>6.00<br>spike dup                         | 2.00<br>Mai<br>Res<br><0.0<br><0.0<br><0.0<br><0.0<br><0.0                               | 105<br>trix<br>sult<br>0810<br>0750<br>0730<br>0700<br>sult.                              | 1(<br>Analy<br>Prepa<br>Rec.<br>90<br>94<br>103<br>107                        | 2ed By<br>red By<br>. 1<br>72<br>77<br>71.                      | <ul> <li>YG</li> <li>YG</li> <li>YG</li> <li>Rec.</li> <li>Limit</li> <li>4 - 120</li> <li>7 - 120</li> <li>8 - 120</li> <li>3 - 120</li> </ul>                                         |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene<br>Toluene<br>Ethylbenzene<br>Xylene<br>Percent recovery is based on the<br>Param            | spike | F<br>e res  | Da<br>QC<br>1<br>1<br>1<br>1<br>1<br>1<br>LCSD                                                     | 2.10<br>te Analyz<br>C Prepara<br>LCS<br>Result<br>1.81<br>1.89<br>2.06<br>6.42<br>D is based                   | 2.12<br>eed: 2<br>tion: 2<br><u>Units</u><br>mg/Kg<br>mg/Kg<br>mg/Kg<br>mg/Kg<br>d on the<br>Dil.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.<br>1<br>1<br>1<br>spike and<br>Spike                        | 1<br>Spike<br>Amount<br>2.00<br>2.00<br>6.00<br>spike dup<br>Matrix                       | 2.00<br>Mat<br>Res<br><0.0<br><0.0<br><0.0<br><0.0<br>licate res<br>Rec.                 | 105<br>trix<br>sult<br>0810<br>0750<br>0730<br>0700<br>sult.<br>Ra<br>Lin                 | 1(<br>Analy<br>Prepa<br>Rec.<br>90<br>94<br>103<br>107<br>ec.                 | 2ed By<br>red By<br>72.<br>77.<br>71.<br>78.                    | <ul> <li>YG</li> <li>YG</li> <li>YG</li> <li>Rec.</li> <li>Limit</li> <li>4 - 120</li> <li>7 - 120</li> <li>8 - 120</li> <li>3 - 120</li> <li>RPD</li> </ul>                            |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene<br>Toluene<br>Ethylbenzene<br>Xylene<br>Percent recovery is based on the<br>Param<br>Benzene | spike | F<br>e rest | Da<br>QC<br>1<br>1<br>1<br>1<br>1<br>1<br>LCSD<br>Result                                           | 2.10<br>te Analyz<br>C Prepara<br>LCS<br>Result<br>1.81<br>1.89<br>2.06<br>6.42<br>D is based<br>Units          | 2.12<br>eed: 2<br>tion: 2<br><u>Units</u><br>mg/Kg<br>mg/Kg<br>mg/Kg<br>mg/Kg<br>d on the<br><u>Dil.</u><br>5 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.<br>1<br>1<br>1<br>1<br>spike and<br>Spike<br>Amount         | 1<br>Spike<br>Amount<br>2.00<br>2.00<br>6.00<br>spike dup<br>Matrix<br>Result             | 2.00<br>Mat<br>Res<br><0.0<br><0.0<br><0.0<br><0.0<br>licate res<br>Rec.<br>0 96         | 105<br>trix<br>sult<br>0810<br>0750<br>0730<br>0700<br>sult.<br>Ra<br>Lin<br>72.4         | 1(<br>Analy<br>Prepa<br>Rec.<br>90<br>94<br>103<br>107<br>ec.<br>mit          | 2ed By<br>red By<br>72.<br>77.<br>71.<br>78.<br>RPD             | <ul> <li>YG</li> <li>YG</li> <li>YG</li> <li>Rec.</li> <li>Limit</li> <li>4 - 120</li> <li>7 - 120</li> <li>8 - 120</li> <li>3 - 120</li> <li>RPD</li> <li>Limit</li> </ul>             |
| 4-Bromofluorobenzene (4-BFB)<br>Laboratory Control Spike (L<br>QC Batch: 98888                                                                                                                                       | spike | F<br>C<br>1 | Da<br>QC<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 2.10<br>te Analyz<br>C Prepara<br>LCS<br>Result<br>1.81<br>1.89<br>2.06<br>6.42<br>D is based<br>Units<br>mg/Kg | 2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12<br>2.12 | mg/Kg<br>013-02-12<br>013-02-12<br>Dil.<br>1<br>1<br>1<br>1<br>spike and<br>Spike<br>Amount<br>2.00 | 1<br>Spike<br>Amount<br>2.00<br>2.00<br>6.00<br>spike dup<br>Matrix<br>Result<br><0.00810 | 2.00<br>Mat<br>Res<br><0.0<br><0.0<br><0.0<br><0.0<br>licate res<br>Rec.<br>) 96<br>) 98 | 105<br>trix<br>sult<br>0810<br>0750<br>0730<br>0700<br>sult.<br>Ra<br>Lin<br>72.4<br>77 - | 10<br>Analy<br>Prepa<br>Rec.<br>90<br>94<br>103<br>107<br>ec.<br>mit<br>- 120 | 2ed By<br>red By<br>72.<br>77.<br>71.<br>78.<br><u>RPD</u><br>5 | <ul> <li>YG</li> <li>YG</li> <li>YG</li> <li>Rec.</li> <li>Limit</li> <li>4 - 120</li> <li>7 - 120</li> <li>8 - 120</li> <li>3 - 120</li> <li>RPD</li> <li>Limit</li> <li>20</li> </ul> |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result. continued ...

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| 112C05046                                                                                                                                         |            |                |                                                                                         |                                                                             |                                                         | 13021102<br>A State ≠                                                                           |                         |                                                                           |                                          | Pa                                                          |                                                 |                        | 22 of 36<br>Co., NM                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------|-------------------------------------------------|------------------------|----------------------------------------------------|
| control spikes continued                                                                                                                          |            |                |                                                                                         |                                                                             |                                                         |                                                                                                 |                         |                                                                           |                                          |                                                             |                                                 |                        |                                                    |
| Guun and a                                                                                                                                        |            |                | LC                                                                                      |                                                                             | SD                                                      | TT:4-                                                                                           | Dil                     | Spik                                                                      |                                          |                                                             | LCS                                             |                        | Rec.                                               |
| Surrogate                                                                                                                                         |            |                | Res                                                                                     | uit Re                                                                      | sult                                                    | Units                                                                                           | Dil.                    | Amou                                                                      | nt I                                     | Rec.                                                        | Rec                                             | ·                      | Limit                                              |
|                                                                                                                                                   |            |                | LC                                                                                      |                                                                             | SD                                                      |                                                                                                 |                         | Spik                                                                      |                                          | LCS                                                         | LCS                                             |                        | Rec.                                               |
| Surrogate                                                                                                                                         |            |                | Res                                                                                     |                                                                             | sult                                                    | Units                                                                                           | Dil.                    | Amou                                                                      |                                          | Rec.                                                        | Rec                                             |                        | Limit                                              |
| Trifluorotoluene (TFT)                                                                                                                            | Qar        | Qsr            | 2.3                                                                                     |                                                                             |                                                         | mg/Kg                                                                                           | 1                       | 2.00                                                                      |                                          | 118                                                         | 119                                             |                        | 9.5 - 108                                          |
| 4-Bromofluorobenzene (4-BFB)                                                                                                                      | Qør        | Qar            | 2.1                                                                                     | 19 2.                                                                       | 15                                                      | mg/Kg                                                                                           | 1                       | 2.00                                                                      |                                          | 110                                                         | 108                                             | 71                     | .4 - 108                                           |
| Laboratory Control Spike (I<br>QC Batch: 98917<br>Prep Batch: 83717                                                                               | CCS-1      | .)             |                                                                                         | Analyzed                                                                    |                                                         | .3-02-13<br>.3-02-11                                                                            |                         |                                                                           |                                          |                                                             | -                                               | vzed By<br>ared By     | y: AR<br>7: AR                                     |
| Param                                                                                                                                             |            | F              |                                                                                         | LCS<br>esult                                                                | Units                                                   | Dil.                                                                                            |                         | Spike<br>mount                                                            |                                          | atrix<br>esult                                              | Re                                              | c.                     | Rec.<br>Limit                                      |
| Chloride                                                                                                                                          |            |                |                                                                                         | 2700                                                                        | mg/Kg                                                   |                                                                                                 |                         | 2500                                                                      |                                          | 3.85                                                        | 10                                              |                        | 85 - 115                                           |
| Percent recovery is based on the                                                                                                                  | spike      | resu           | IL RED IS                                                                               | s pased o                                                                   | n the s                                                 | ріке апо                                                                                        | spike                   | dupnea                                                                    | te rest                                  |                                                             |                                                 |                        |                                                    |
| Percent recovery is based on the<br>Param                                                                                                         | spike<br>F | C              | LCSD<br>Result                                                                          | Units                                                                       | Dil.                                                    | Spike<br>Amour                                                                                  | M<br>nt R               | latrix<br>esult                                                           | Rec.                                     | Re<br>Lin                                                   | nit                                             | RPD                    | RPD<br>Limit                                       |
| Param<br>Chloride                                                                                                                                 | F          | C              | LCSD<br>Result<br>2510                                                                  | Units<br>mg/Kg                                                              | Dil.                                                    | Spike<br>Amour<br>2500                                                                          | M<br>nt R               | latrix<br>esult<br>(3.85                                                  | Rec.<br>100                              | Re<br>Lin<br>85 -                                           | nit                                             | RPD<br>7               |                                                    |
| Param                                                                                                                                             | F<br>spike | C<br>resu      | LCSD<br>Result<br>2510<br>lt. RPD is<br>Date A                                          | Units<br>mg/Kg                                                              | Dil.<br>1<br>n the s<br>: 201                           | Spike<br>Amour<br>2500                                                                          | M<br>nt R               | latrix<br>esult<br>(3.85                                                  | Rec.<br>100                              | Re<br>Lin<br>85 -<br>ılt.                                   | nit<br>115<br>Analy                             |                        | Limit<br>20                                        |
| Param<br>Chloride<br>Percent recovery is based on the<br>Laboratory Control Spike (I<br>QC Batch: 98918<br>Prep Batch: 83717                      | F<br>spike | C<br>resu      | LCSD<br>Result<br>2510<br>lt. RPD is<br>Date A<br>QC Pr                                 | Units<br>mg/Kg<br>s based o<br>Analyzed<br>reparation                       | Dil.<br>1<br>n the s<br>201<br>n: 201                   | Spike<br><u>Amour</u><br>2500<br>pike and<br>3-02-13<br>3-02-11                                 | M<br>at R<br><<br>spike | latrix<br>esult<br>3.85<br>duplicat                                       | Rec.<br>100<br>te resu                   | Re<br>Lin<br>85 -<br>ılt.                                   | nit<br>115<br>Analy<br>Prepa                    | 7<br>rzed By<br>red By | Limit<br>20<br>7: AR<br>7: AR<br>Rec.              |
| Param<br>Chloride<br>Percent recovery is based on the<br>Laboratory Control Spike (I<br>QC Batch: 98918<br>Prep Batch: 83717<br>Param             | F<br>spike | C<br>resu      | LCSD<br>Result<br>2510<br>lt. RPD is<br>Date A<br>QC Pr<br>L<br>C Re                    | Units<br>mg/Kg<br>s based o<br>Analyzed<br>reparation<br>LCS<br>esult       | Dil.<br>1<br>n the s<br>201<br>n: 201<br>Units          | Spike<br><u>Amour</u><br>2500<br>pike and<br>3-02-13<br>3-02-11<br>Dil.                         | M<br>at R<br><<br>spike | latrix<br>esult<br>3.85<br>duplicat<br>Spike<br>mount                     | Rec.<br>100<br>te resu<br>Ma<br>Re       | Re<br>Lin<br>85 -<br>ılt.                                   | nit<br>115<br>Analy<br>Prepa<br>Re              | 7<br>rzed By<br>red By | Limit<br>20<br>7: AR<br>7: AR<br>Rec.<br>Limit     |
| Param<br>Chloride<br>Percent recovery is based on the<br>Laboratory Control Spike (I<br>QC Batch: 98918<br>Prep Batch: 83717<br>Param<br>Chloride | F<br>spike | C<br>resu<br>) | LCSD<br>Result<br>2510<br>lt. RPD is<br>Date A<br>QC Pr<br>L<br>C Re<br>2               | Units<br>mg/Kg<br>s based o<br>Analyzed<br>eparation<br>LCS<br>esult<br>780 | Dil.<br>1<br>n the s<br>201<br>n: 201<br>Units<br>mg/Kg | Spike<br>Amour<br>2500<br>pike and<br>3-02-13<br>3-02-11<br>Dil.<br>5 1                         | M<br>nt R<br><<br>spike | latrix<br>esult<br>3.85<br>duplicat<br>Spike<br>mount<br>2500             | Rec.<br>100<br>te resu<br>Ma<br>Re<br><3 | Re<br>Lin<br>85 -<br>ılt.                                   | nit<br>115<br>Analy<br>Prepa                    | 7<br>rzed By<br>red By | Limit<br>20<br>7: AR<br>7: AR<br>Rec.              |
| Param<br>Chloride<br>Percent recovery is based on the<br>Laboratory Control Spike (I<br>QC Batch: 98918<br>Prep Batch: 83717<br>Param             | F<br>spike | C<br>resu<br>) | LCSD<br>Result<br>2510<br>It. RPD is<br>Date A<br>QC Pr<br>L<br>C Re<br>2<br>It. RPD is | Units<br>mg/Kg<br>s based o<br>Analyzed<br>eparation<br>LCS<br>esult<br>780 | Dil.<br>1<br>n the s<br>201<br>n: 201<br>Units<br>mg/Kg | Spike<br><u>Amour</u><br>2500<br>pike and<br>3-02-13<br>3-02-11<br>Dil.<br><u>1</u><br>pike and | M<br>at R<br><<br>spike | latrix<br>esult<br>3.85<br>duplicat<br>Spike<br>mount<br>2500<br>duplicat | Rec.<br>100<br>te resu<br>Ma<br>Re<br><3 | Re<br>Lin<br>85 -<br>ılt.<br>atrix<br>esult<br>3.85<br>ılt. | nit<br>115<br>Analy<br>Prepa<br><u>Re</u><br>11 | 7<br>rzed By<br>red By | Limit<br>20<br>7: AR<br>7: AR<br>8: AR<br>85 - 115 |
| Param<br>Chloride<br>Percent recovery is based on the<br>Laboratory Control Spike (I<br>QC Batch: 98918<br>Prep Batch: 83717<br>Param<br>Chloride | F<br>spike | C<br>resu<br>) | LCSD<br>Result<br>2510<br>lt. RPD is<br>Date A<br>QC Pr<br>L<br>C Re<br>2               | Units<br>mg/Kg<br>s based o<br>Analyzed<br>eparation<br>LCS<br>esult<br>780 | Dil.<br>1<br>n the s<br>201<br>n: 201<br>Units<br>mg/Kg | Spike<br>Amour<br>2500<br>pike and<br>3-02-13<br>3-02-11<br>Dil.<br>5 1                         | M<br>nt R<br><<br>spike | latrix<br>esult<br>3.85<br>duplicat<br>Spike<br>mount<br>2500<br>duplicat | Rec.<br>100<br>te resu<br>Ma<br>Re<br><3 | Re<br>Lin<br>85 -<br>ılt.                                   | nit<br>115<br>Analy<br>Prepa<br><u>Re</u><br>11 | 7<br>rzed By<br>red By | Limit<br>20<br>7: AR<br>7: AR<br>Rec.<br>Limit     |

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|---------------------------------------------------------------------|--------------|-------|---------|-----------------------------------------------|-------------|------------|--------------|----------|----------------|------------------|---------------------|
| Laboratory Control Spike (LC                                        | CS-1)        | )     |         |                                               |             |            |              |          |                |                  |                     |
| QC Batch: 98919                                                     |              |       | Dat     | e Analyze                                     | d: 2013     | 3-02-13    |              |          | Ana            | lyzed By         | : AR                |
| Prep Batch: 83717                                                   |              |       | QC      | Preparati                                     | on: 2013    | 3-02-11    |              |          | Prep           | bared By         | : AR                |
|                                                                     |              |       |         | LCS                                           |             |            | Spike        | Ma       | atrix          |                  | Rec.                |
| Param                                                               | ]            | F     | С       | $\mathbf{Result}$                             | Units       | Dil.       | Amount       | Re       | esult F        | lec.             | Limit               |
| Chloride                                                            |              |       |         | 2510                                          | mg/Kg       | 1          | 2500         | <        | 3.85 1         | .00 E            | 35 - 115            |
| Percent recovery is based on the s                                  | pike 1       | resu  | lt. RPI | ) is based                                    | on the sp   | ike and sp | oike duplica | ate resi | ult.           |                  |                     |
|                                                                     |              |       | LCSE    | )                                             |             | Spike      | Matrix       |          | Rec.           |                  | RPD                 |
| Param                                                               | $\mathbf{F}$ | С     | Resul   | t Units                                       | Dil.        | Amount     | Result       | Rec.     | Limit          | RPD              | Limit               |
| Chloride                                                            |              |       | 2690    | mg/Kg                                         | g 1         | 2500       | <3.85        | 108      | 85 - 115       | 7                | 20                  |
| Percent recovery is based on the sp<br>Laboratory Control Spike (LC |              |       |         |                                               | on one sp   | ine and sp |              |          |                |                  |                     |
| QC Batch: 98958                                                     |              |       | Dat     | e Analyze                                     | d · 2019    | 3-02-15    |              |          | ۸na            | lyzed By         | : YG                |
| Prep Batch: 83839                                                   |              |       |         | Preparati                                     |             | -02-15     |              |          |                | ared By          |                     |
|                                                                     |              |       |         | LCS                                           |             |            | Spike        | Ma       | atrix          |                  | Rec.                |
| Param                                                               | I            | F     | С       | Result                                        | Units       | Dil.       | Amount       | Re       | esult R        | lec.             | Limit               |
| GRO                                                                 |              |       | 1       | 21.6                                          | mg/Kg       | 1          | 20.0         | <:       | 2.32 1         | 08 7             | 0 - 130             |
| Percent recovery is based on the sp                                 | pike r       | resul | lt. RPI | ) is based                                    | on the sp   | ike and sp | ike duplica  | te resi  | ılt.           |                  |                     |
|                                                                     |              |       | LCSD    | )                                             |             | Spike      | Matrix       |          | Rec.           |                  | RPD                 |
|                                                                     | m            | ~     |         |                                               | <b>D</b> .1 |            | D 1/         | n        | <b>T</b> • • • | DDD              | <b>T</b> • • •      |

| Param                              | $\mathbf{F}$ | С    | Result  | Units       | Dil.    | Amount      | Result     | Rec.    | Limit    | RPD | Limit |
|------------------------------------|--------------|------|---------|-------------|---------|-------------|------------|---------|----------|-----|-------|
| GRO                                |              | ı    | 21.1    | mg/Kg       | 1       | 20.0        | <2.32      | 106     | 70 - 130 | 2   | 20    |
| Percent recovery is based on the s | spike        | resu | lt. RPD | is based or | n the s | pike and sp | ike duplic | ate res | ult.     |     |       |

| Surrogate                    | LCS<br>Result | $\begin{array}{c} \mathrm{LCSD} \\ \mathrm{Result} \end{array}$ | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
|------------------------------|---------------|-----------------------------------------------------------------|-------|------|-----------------|-------------|--------------|---------------|
| Trifluorotoluene (TFT)       | 2.03          | 2.03                                                            | mg/Kg | 1    | 2.00            | 102         | 102          | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 2.02          | 2.01                                                            | mg/Kg | 1    | 2.00            | 101         | 100          | 70 - 130      |

## Laboratory Control Spike (LCS-1)

| QC Batch:   | 98965 | Date Analyzed:  | 2013-02-15 | Analyzed By: | CW |
|-------------|-------|-----------------|------------|--------------|----|
| Prep Batch: | 83844 | QC Preparation: | 2013-02-15 | Prepared By: | CW |

| Param<br>DRO<br>Percent recovery is based on th<br>Param<br>DRO<br>Percent recovery is based on th<br>Burrogate<br>-Tricosane<br>Matrix Spike (MS-1) Spill<br>QC Batch: 98827 | F<br>e spik<br>L(              | C<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i. | LCSI<br>Resul<br>216                                    | )<br>t Unit<br>mg/F<br>PD is base<br>SD<br>ult          | s Dil.<br>g 1                                    | spike and<br>Spike<br>Amount<br>250                      | Matrix<br>Result<br>23.2                                                | Res<br>23<br>icate re<br>Rec.<br>77               | R.<br>Lin<br>66.9 -<br>esult.          | Rec.<br>76<br>ec.<br>mit<br>- 119.9<br>LCSD<br>Rec. | L:<br>66.9<br>RPD<br>1                | Rec.<br>imit<br>- 119.9<br>RPD<br>Limit<br>20<br>Rec.<br>imit |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------|-----------------------------------------------------|---------------------------------------|---------------------------------------------------------------|
| Percent recovery is based on th<br>Param<br>DRO<br>Percent recovery is based on th<br>Surrogate<br>-Tricosane<br>Matrix Spike (MS-1) Spil                                     | F<br>e spik<br>L(<br>Res<br>12 | C<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i. | ult. RF<br>LCSI<br>Resul<br>216<br>ult. RF<br>LC<br>Res | PD is base<br>t Unit<br>mg/F<br>PD is base<br>SD<br>ult | ed on the<br>s Dil.<br>g 1<br>ed on the<br>Units | spike and<br>Spike<br>Amount<br>250<br>spike and<br>Dil. | spike dupl<br>Matrix<br>Result<br>23.2<br>spike dupl<br>Spike<br>Amount | icate re<br>Rec.<br>77<br>icate re<br>LCS<br>Rec. | esult.<br>R<br>Lin<br>66.9 -<br>esult. | ec.<br>mit<br>- 119.9<br>LCSD                       | RPD<br>1                              | RPI<br>Limi<br>20<br>Rec.                                     |
| Param<br>DRO<br>Percent recovery is based on th<br>Surrogate<br>Tricosane<br>Matrix Spike (MS-1) Spil                                                                         | F<br>e spik<br>L(<br>Res<br>12 | C<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i.<br>i. | LCSI<br>Resul<br>216<br>ult. RF<br>LC<br>Res            | )<br>t Unit<br>mg/F<br>PD is base<br>SD<br>ult          | s Dil.<br>g 1<br>ed on the<br>Units              | Spike<br>Amount<br>250<br>spike and<br>Dil.              | Matrix<br>Result<br>23.2<br>spike dupl<br>Spike<br>Amount               | Rec.<br>77<br>icate re<br>LCS<br>Rec.             | R.<br>Lin<br>66.9 -<br>esult.          | mit<br>- 119.9<br>LCSD                              | 1<br>F                                | Limi<br>20<br>Rec.                                            |
| DRO<br>Percent recovery is based on th<br>Surrogate<br>-Tricosane<br>Matrix Spike (MS-1) Spil                                                                                 | e spik<br>L(<br>Res<br>12      | ı.<br>ce res<br>CS<br>sult<br>21                              | Resul<br>216<br>ult. RF<br>LC<br>Res                    | t Unit<br>mg/F<br>PD is base<br>SD<br>ult               | g 1<br>ed on the<br>Units                        | Amount<br>250<br>spike and<br>Dil.                       | Result<br>23.2<br>spike dupl<br>Spike<br>Amount                         | 77<br>icate re<br>LCS<br>Rec.                     | Lin<br>66.9 -<br>esult.<br>I           | mit<br>- 119.9<br>LCSD                              | 1<br>F                                | Limi<br>20<br>Rec.                                            |
| DRO<br>Percent recovery is based on th<br>Surrogate<br>-Tricosane<br>Matrix Spike (MS-1) Spil                                                                                 | e spik<br>L(<br>Res<br>12      | ı.<br>ce res<br>CS<br>sult<br>21                              | 216<br>ult. RF<br>LC<br>Res                             | mg/F<br>'D is base<br>SD<br>ult                         | g 1<br>ed on the<br>Units                        | Amount<br>250<br>spike and<br>Dil.                       | 23.2<br>spike dupl<br>Spike<br>Amount                                   | 77<br>icate re<br>LCS<br>Rec.                     | 66.9 -<br>esult.<br>I                  | - 119.9<br>LCSD                                     | 1<br>F                                | 20<br>Rec.                                                    |
| Percent recovery is based on th<br>Surrogate<br>-Tricosane<br>Matrix Spike (MS-1) Spil                                                                                        | L(<br>Res                      | ce res<br>CS<br>sult<br>21                                    | ult. RF<br>LC<br>Res                                    | PD is base<br>SD<br>ult                                 | ed on the<br>Units                               | spike and<br>Dil.                                        | spike dupl<br>Spike<br>Amount                                           | icate re<br>LCS<br>Rec.                           | esult.                                 | LCSD                                                | F                                     | lec.                                                          |
| Jurrogate<br>-Tricosane<br>Matrix Spike (MS-1) Spil                                                                                                                           | L(<br>Res                      | CS<br>sult<br>21                                              | LC<br>Res                                               | SD<br>ult                                               | Units                                            | Dil.                                                     | Spike<br>Amount                                                         | LCS<br>Rec.                                       | I                                      |                                                     |                                       |                                                               |
| -Tricosane<br>Matrix Spike (MS-1) Spil                                                                                                                                        | Res<br>12                      | sult<br>21                                                    | Res                                                     | ult                                                     |                                                  |                                                          | Amount                                                                  | Rec.                                              |                                        |                                                     |                                       |                                                               |
| -Tricosane<br>Matrix Spike (MS-1) Spil                                                                                                                                        | Res<br>12                      | sult<br>21                                                    | Res                                                     | ult                                                     |                                                  |                                                          | Amount                                                                  | Rec.                                              |                                        |                                                     |                                       |                                                               |
| -Tricosane<br>Matrix Spike (MS-1) Spil                                                                                                                                        | 12                             | 21                                                            |                                                         |                                                         |                                                  |                                                          |                                                                         |                                                   |                                        |                                                     | 1.1                                   |                                                               |
| Matrix Spike (MS-1) Spil                                                                                                                                                      | ked Sa                         |                                                               |                                                         |                                                         | <u> </u>                                         |                                                          | 100                                                                     | 121                                               |                                        | 134                                                 |                                       | - 140.                                                        |
| Param                                                                                                                                                                         |                                | F                                                             | C                                                       | MS<br>Result                                            | Units                                            | Dil.                                                     | Spike<br>Amount                                                         | R                                                 | atrix<br>esult                         | Rec.                                                | L                                     | Rec.<br>Limit                                                 |
| Chloride                                                                                                                                                                      |                                |                                                               |                                                         | 15500                                                   | mg/Kg                                            | g <u>1</u> 0                                             | 2500                                                                    | 1                                                 | 3200                                   | 92                                                  | 78.                                   | 9 - 12                                                        |
| Percent recovery is based on the                                                                                                                                              | e spik                         | e res                                                         | ult. RF                                                 | D is base                                               | ed on the                                        | spike and                                                | spike dupli                                                             | icate re                                          | esult.                                 |                                                     |                                       |                                                               |
|                                                                                                                                                                               |                                |                                                               | MSI                                                     | )                                                       |                                                  | Spike                                                    | Matrix                                                                  |                                                   | R                                      | lec.                                                |                                       | RPI                                                           |
| Param                                                                                                                                                                         | $\mathbf{F}$                   | С                                                             | Resu                                                    |                                                         | s Dil.                                           | Amount                                                   |                                                                         | Rec.                                              |                                        | mit                                                 | RPD                                   | Limi                                                          |
| Chloride                                                                                                                                                                      |                                |                                                               | 1580                                                    | ) mg/H                                                  | (g 10                                            | 2500                                                     | 13200                                                                   | 104                                               | 78.9                                   | - 121                                               | 2                                     | 20                                                            |
|                                                                                                                                                                               | -                              |                                                               | e: 3206'                                                | 72                                                      |                                                  | -                                                        | spike dupl                                                              | icate re                                          | esult.                                 |                                                     |                                       |                                                               |
| 2C Batch: 98841<br>Prep Batch: 83748                                                                                                                                          |                                |                                                               |                                                         | te Analy<br>C Prepara                                   |                                                  | 13-02-12<br>13-02-11                                     | <b>G</b> _1:1 -                                                         |                                                   | A                                      | Prepar                                              | zed By:<br>red By:                    | CW<br>CW                                                      |
| aram                                                                                                                                                                          |                                | F                                                             | С                                                       | MS<br>Result                                            | Units                                            | a Dil.                                                   | Spike<br>Amour                                                          |                                                   | Matrix<br>Result                       |                                                     |                                       | Rec.<br>Limit                                                 |
| DRO                                                                                                                                                                           |                                | т.                                                            | 1                                                       | 338                                                     | mg/K                                             |                                                          | 250                                                                     | 10                                                | $\frac{111}{111}$                      | <u></u>                                             | · · · · · · · · · · · · · · · · · · · | $\frac{1100}{0} - 130$                                        |

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|---------------------------------------------------------------------|--------------|--------------|--------------------------------------|-------------------------------------|--------------------------------------|-------------------------|------------------------|------------------------|----------------------------------|------------------------------------------------------|-----------------------------------------------------|
|                                                                     |              |              | MSD                                  |                                     |                                      | Spike                   | Matrix                 | ¢                      | Rec                              |                                                      | RPD                                                 |
| Param                                                               | $\mathbf{F}$ | $\mathbf{C}$ | $\mathbf{Result}$                    | Un                                  | its Dil                              | . Amount                | t Result               | t Rec.                 | Lim                              | it RPI                                               | ) Limit                                             |
| DRO                                                                 |              | 1            | 331                                  | mg,                                 | /Kg 1                                | 250                     | 111                    | - 88                   | 70 - 1                           | 30 2                                                 | 20                                                  |
| Percent recovery is based on the                                    | spike        | e resu       | lt. RPD                              | is bas                              | sed on the                           | spike and               | spike dup              | licate res             | ult.                             |                                                      |                                                     |
|                                                                     | 1            | MS           | MS                                   | D                                   |                                      |                         | Spike                  | M                      | IS                               | MSD                                                  | Rec.                                                |
| Surrogate                                                           |              | esult        | Res                                  |                                     | Units                                | Dil.                    | Amour                  |                        |                                  | Rec.                                                 | Limit                                               |
| n-Tricosane                                                         |              | 17           | 11                                   |                                     | mg/Kg                                | 1                       | 100                    |                        | 17                               | 118                                                  | 70 - 130                                            |
| Matrix Spike (MS-1) Spike                                           | 4 50         | mplo         | : 320696                             |                                     |                                      |                         |                        |                        |                                  |                                                      |                                                     |
|                                                                     | u ba         | mpie         |                                      |                                     |                                      |                         |                        |                        |                                  |                                                      |                                                     |
| QC Batch: 98887                                                     |              |              |                                      | Analy                               |                                      | 013-02-12               |                        |                        |                                  | nalyzed l                                            |                                                     |
| Prep Batch: 83781                                                   |              |              | QC I                                 | Prepar                              | ration: 2                            | 013-02-12               |                        |                        | F                                | repared I                                            | 3y: YG                                              |
|                                                                     |              |              |                                      |                                     |                                      |                         |                        |                        |                                  |                                                      |                                                     |
|                                                                     |              |              |                                      | MS                                  |                                      |                         | Spik                   | e M                    | atrix                            |                                                      | Rec.                                                |
| Param                                                               |              | $\mathbf{F}$ | C                                    | Result                              | Unit                                 | s Dil.                  | Amou                   |                        | esult                            | Rec.                                                 | Limit                                               |
| GRO                                                                 |              |              | 1                                    | 23.2                                | mg/l                                 |                         | 20.0                   |                        | 2.32                             | 116                                                  | 70 - 130                                            |
| Percent recovery is based on the                                    | mike         |              | If RPD                               |                                     |                                      |                         |                        |                        |                                  |                                                      |                                                     |
| release recovery is based on the                                    | pine         | , 169a       |                                      | 10 000                              | eu on me                             | spike and               | spike uup              | licate les             | uit.                             |                                                      |                                                     |
|                                                                     |              |              | MSD                                  |                                     |                                      | Spike                   | Matrix                 | ¢                      | Rec                              |                                                      | RPD                                                 |
| Param                                                               | F            | C            | Result                               | Un                                  |                                      |                         |                        |                        | Lim                              |                                                      |                                                     |
| GRO                                                                 |              | 1            | 24.3                                 | mg/                                 | <u>/Kg 1</u>                         | 20.0                    | <2.32                  | 122                    | 70 - 1                           | 30 5                                                 | 20                                                  |
| Percent recovery is based on the s                                  | spike        | e resu       | lt. RPD                              | is bas                              | ed on the                            | spike and               | spike dup              | licate res             | ult.                             |                                                      |                                                     |
|                                                                     |              |              | M                                    | IS                                  | MSD                                  |                         |                        | Spike                  | MS                               | MSD                                                  | Rec.                                                |
| Surrogate                                                           |              |              | Res                                  |                                     | Result                               | Units                   |                        | mount                  | Rec.                             | Rec.                                                 | Limit                                               |
| Trifluorotoluene (TFT)                                              | ·····        | ···          |                                      | 40                                  | 2.40                                 | mg/Kg                   | 1                      | 2                      | 120                              | 120                                                  | 70 - 130                                            |
| 4-Bromofluorobenzene (4-BFB)                                        |              |              | 2.                                   |                                     | 2.09                                 | mg/Kg                   | 1                      | $\overline{2}$         | 106                              | 104                                                  | 70 - 130                                            |
| Matrix Spike (MS-1) Spike                                           |              |              |                                      |                                     |                                      |                         |                        |                        |                                  |                                                      |                                                     |
| QC Batch: 98888<br>Prep Batch: 83781                                | d Sa         | mple:        |                                      | Analy<br>Prepar                     |                                      | )13-02-12<br>)13-02-12  |                        |                        |                                  | nalyzed H<br>repared H                               |                                                     |
| QC Batch: 98888                                                     | d Sa         | mple:        | Date                                 |                                     |                                      |                         |                        |                        |                                  |                                                      |                                                     |
| QC Batch: 98888                                                     |              | -            | Date<br>QC I                         | Prepar<br>MS                        |                                      |                         | Spike                  | Mat                    | Р                                |                                                      |                                                     |
| QC Batch: 98888<br>Prep Batch: 83781<br>Param                       |              | -            | Date<br>QC I<br>C Re                 | Prepar<br>MS<br>esult               | ation: 20                            |                         | Amount                 | Mat                    | P<br>rix                         | repared H<br>Rec.                                    | By: YG<br>Rec.<br>Limit                             |
| QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene            |              | -            | Date<br>QC I<br>$\frac{C}{1}$        | Prepar<br>MS<br>esult               | ation: 20<br>Units<br>mg/Kg          | )13-02-12               | Amount<br>2.00         | Rest<br><0.00          | P<br>rix<br>1lt<br>1810          | Rec.                                                 | By: YG<br>Rec.<br>Limit<br>36.3 - 138               |
| QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene<br>Toluene |              | -            | Date<br>QC $H$<br>C Re<br>1 2<br>1 2 | Prepar<br>MS<br>esult<br>.02<br>.12 | ation: 20<br>Units<br>mg/Kg<br>mg/Kg | D13-02-12<br>Dil.       | Amount<br>2.00<br>2.00 | Rest<br><0.00<br><0.00 | P<br>11t<br>1810<br>1750         | Rec.           101         0           106         0 | By: YG<br>Rec.<br>Limit<br>36.3 - 138<br>54.8 - 142 |
| QC Batch: 98888<br>Prep Batch: 83781<br>Param<br>Benzene            |              | -            | Date<br>QC I<br>$\frac{C}{1}$        | Prepar<br>MS<br>esult               | ation: 20<br>Units<br>mg/Kg          | Di3-02-12<br>Dil.<br>1  | Amount<br>2.00         | Rest<br><0.00          | P<br>11t<br>1810<br>1750<br>1730 | Rec.<br>101 (<br>106 (<br>116                        | By: YG<br>Rec.<br>Limit<br>36.3 - 138               |

| Report Date: February 15, 2013<br>112C05046                       | 3            |       |                |                                    |                           | 13021102<br>A State #    |                                     |                      | Pa                               | 0                 |                   | 26 of 36<br>6., NM                      |
|-------------------------------------------------------------------|--------------|-------|----------------|------------------------------------|---------------------------|--------------------------|-------------------------------------|----------------------|----------------------------------|-------------------|-------------------|-----------------------------------------|
|                                                                   |              |       | MSD            |                                    |                           | Spike                    | Matrix                              | :                    | Re                               | ec.               |                   | RPD                                     |
| Param                                                             | F            | С     | Result         | Units                              | Dil.                      | Amount                   | Result                              | Rec.                 |                                  | nit               | RPD               | Limit                                   |
| Benzene                                                           |              | 1     | 2.08           | mg/Kg                              |                           | 2.00                     | <0.0081                             |                      |                                  | - 138             | 3                 | 20                                      |
| Toluene                                                           |              | 1     | 2.19           | mg/Kg                              |                           | 2.00                     | < 0.0075                            |                      |                                  | - 142             | 3                 | 20                                      |
| Ethylbenzene                                                      |              | 1     | $2.40 \\ 7.47$ | mg/Kg                              |                           | 2.00                     | <0.0073                             |                      | 72 -<br>60.8                     | 132               | 3<br>3            | $\frac{20}{20}$                         |
| Xylene<br>Percent recovery is based on the                        | spik         | e res |                | mg/Kg<br>D is base                 |                           | 6.00<br>spike and        | <0.0070<br>spike du                 |                      |                                  | - 140             | <u> </u>          | 20                                      |
| ·                                                                 |              |       |                | MS                                 | MSD                       | •                        | -                                   | Spike                | MS                               | MSI               | )                 | Rec.                                    |
| Surrogate                                                         |              |       |                | Result                             | Result                    | Units                    | Dil.                                | Amount               | Rec.                             | Rec               |                   | limit                                   |
| Trifluorotoluene (TFT)                                            | Qar          | Qs    | т              | 2.34                               | 2.34                      | mg/Kg                    | 1                                   | 2                    | 117                              | 117               | 79.               | 5 - 108                                 |
| 4-Bromofluorobenzene (4-BFB)                                      |              |       |                | 2.13                               | 2.12                      | mg/Kg                    | 1                                   | 2                    | 106                              | 106               | 71.               | 4 - 108                                 |
| QC Batch: 98917<br>Prep Batch: 83717                              |              |       |                | te Analyz<br>2 Prepara<br>MS       |                           | )13-02-13<br>)13-02-11   | Spik                                | - N                  | atrix                            | •                 | zed By<br>red By: |                                         |
| Param                                                             |              | F     | C              | Result                             | Units                     | Dil.                     | Amou                                |                      | esult                            | Rec.              |                   | imit                                    |
| Chloride                                                          |              |       |                | 2580                               | mg/Kg                     |                          | 2500                                |                      | 408                              | 87                |                   | 9 - 121                                 |
| Percent recovery is based on the                                  | spike        | e res | ult. RP        | D is based                         |                           |                          | spike du                            | plicate re           | sult.                            |                   |                   | · . · · · · · · · · · · · · · · · · · · |
|                                                                   |              |       | MSD            |                                    |                           | Spike                    | Matrix                              | 2                    | Re                               | c.                |                   | RPD                                     |
| Param                                                             | F            | C     | Result         |                                    |                           | Amount                   |                                     |                      | Lin                              |                   | RPD               | Limit                                   |
| Chloride                                                          |              |       | 2780           | mg/K                               | g 5                       | 2500                     | 408                                 | 95                   | 78.9 -                           | 121               | 8                 | 20                                      |
| QC Batch: 98918                                                   | _            |       | e: 32069       |                                    | ed: 2(                    | )13-02-13                | spike duj                           | plicate re           |                                  | Analyz            |                   |                                         |
| Prep Batch: 83717                                                 |              |       | QC             | Prepara                            | tion: 2(                  | )13-02-11                |                                     |                      |                                  | Prepar            | еа Бу:            | An                                      |
|                                                                   |              | F     |                | MS                                 |                           |                          | Spike                               |                      | atrix                            | -                 | 1                 | Rec.                                    |
| Param                                                             |              | F     | QC<br>C        | MS<br>Result                       | Units                     | Dil.                     | Amou                                | nt Re                | atrix<br>esult                   | Rec.              | l<br>L            | Rec.<br>imit                            |
| Prep Batch: 83717 Param Chloride Percent recovery is based on the | spike        |       | C              | MS<br>Result<br>2650               | Units<br>mg/K             | Dil.<br>g 5              | Amou<br>2500                        | nt Ro                | atrix<br>esult<br>19.2           | -                 | l<br>L            | Rec.                                    |
| Param<br>Chloride                                                 | spike        |       | C              | MS<br>Result<br>2650<br>D is based | Units<br>mg/K             | Dil.<br>g 5<br>spike and | Amou<br>2500                        | nt Ro<br>colicate re | atrix<br>esult<br>19.2           | Rec.              | l<br>L            | Rec.<br>imit                            |
| Param<br>Chloride                                                 | e spike<br>F |       | C<br>ult. RP   | MS<br>Result<br>2650<br>D is based | Units<br>mg/K<br>d on the | Dil.<br>g 5              | Amou<br>2500<br>spike duy<br>Matrix | nt Ro<br>colicate re | atrix<br>esult<br>19.2<br>esult. | Rec.<br>106<br>c. | l<br>L            | Rec.<br>imit<br>9 - 121                 |

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|--------------------------------|-----------------------|-----------------------|
| 112C05046                      | COG/Willow A State #3 | Eddy Co., NM          |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Matrix Spik              | e (MS-1) | Spiked Sample: 320695             |  |
|--------------------------|----------|-----------------------------------|--|
| QC Batch:<br>Prep Batch: |          | Date Analyzed:<br>QC Preparation: |  |

|          |   |   | MS     |       |      | Spike  | Matrix |      | Rec.       |
|----------|---|---|--------|-------|------|--------|--------|------|------------|
| Param    | F | С | Result | Units | Dil. | Amount | Result | Rec. | Limit      |
| Chloride |   |   | 2560   | mg/Kg | 5    | 2500   | <19.2  | 102  | 78.9 - 121 |

Analyzed By: AR Prepared By: AR

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|          |              |              | MSD    |       |      | Spike  | Matrix |      | Rec.       |     | RPD   |
|----------|--------------|--------------|--------|-------|------|--------|--------|------|------------|-----|-------|
| Param    | $\mathbf{F}$ | $\mathbf{C}$ | Result | Units | Dil. | Amount | Result | Rec. | Limit      | RPD | Limit |
| Chloride |              |              | 2440   | mg/Kg | 5    | 2500   | <19.2  | 98   | 78.9 - 121 | 5   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 321013

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| QC Batch:   | 98958 | Date Analyzed:  | 2013-02-15 | Analyzed By: | $\mathbf{Y}\mathbf{G}$ |
|-------------|-------|-----------------|------------|--------------|------------------------|
| Prep Batch: | 83839 | QC Preparation: | 2013-02-15 | Prepared By: | YG                     |

|       |              |   | MS     |       |      | Spike  | Matrix |      | Rec.     |
|-------|--------------|---|--------|-------|------|--------|--------|------|----------|
| Param | $\mathbf{F}$ | С | Result | Units | Dil. | Amount | Result | Rec. | Limit    |
| GRO   |              | 1 | 19.8   | mg/Kg | 1    | 20.0   | <2.32  | 99   | 70 - 130 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|       |              |   | MSD    |       |      | Spike  | Matrix |      | Rec.     |     | RPD   |
|-------|--------------|---|--------|-------|------|--------|--------|------|----------|-----|-------|
| Param | $\mathbf{F}$ | С | Result | Units | Dil. | Amount | Result | Rec. | Limit    | RPD | Limit |
| GRO   |              | 1 | 20.9   | mg/Kg | 1    | 20.0   | <2.32  | 104  | 70 - 130 | 5   | 20    |

|                              | MS                | MSD               |       |      | Spike  | MS   | MSD  | Rec.     |
|------------------------------|-------------------|-------------------|-------|------|--------|------|------|----------|
| Surrogate                    | $\mathbf{Result}$ | $\mathbf{Result}$ | Units | Dil. | Amount | Rec. | Rec. | Limit    |
| Trifluorotoluene (TFT)       | 2.21              | 2.01              | mg/Kg | 1    | 2      | 110  | 100  | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) | 2.00              | 1.99              | mg/Kg | 1    | 2      | 100  | 100  | 70 - 130 |

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|--------------------------------------------|--------------|-----------------------------------------------|----------|-------------|-----------|-----------|----------|---------------------------------------|--------------|---------|
| Matrix Spike (MS-1) Spi                    | ked San      | nple: 320                                     | 573      |             |           |           |          |                                       |              |         |
| QC Batch: 98965<br>Prep Batch: 83844       |              | zed By:<br>red By:                            |          |             |           |           |          |                                       |              |         |
|                                            |              |                                               | MS       |             |           | Spike     | Ma       | trix                                  | I            | Rec.    |
| Param                                      | I            | F C                                           | Result   | Units       | Dil.      | Amount    | Re       | sult Rec.                             | L            | imit    |
| DRO                                        |              | 1                                             | 233      | mg/Kg       | g 1       | 250       | 2        | 5.4 83                                | 36.1         | - 147.2 |
| Percent recovery is based on th            | e spike      | result. R                                     | PD is ba | used on the | spike and | spike dup | licate r | esult.                                | -            |         |
|                                            |              | MS                                            | )        |             | Spike     | Matrix    |          | Rec.                                  |              | RPD     |
| Param                                      | $\mathbf{F}$ | C Resu                                        | lt Un    | its Dil.    | Amount    | Result    | Rec.     | Limit                                 | RPD          | Limit   |
| DRO                                        |              | 1 231                                         | mg/      | Kg 1        | 250       | 25.4      | 82       | 36.1 - 147.2                          | 1            | 20      |
| Percent recovery is based on th            | e spike      | result. R                                     | PD is ba | used on the | spike and | spike dup | licate r | esult.                                |              |         |
|                                            | MS           | 5 N                                           | ISD      |             |           | Spike     | M        | S MSD                                 | 1            | Rec.    |
| Surrogate                                  | Resu         | lt R                                          | esult    | Units       | Dil.      | Amount    | Ree      | c. Rec.                               | $\mathbf{L}$ | imit    |
| n-Tricosane                                | 130          | <u> </u>                                      | 130      | mg/Kg       | 1         | 100       | 13       | 0 130                                 | 70 9         | - 131.6 |

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# **Calibration Standards**

Standard (CCV-1)

| QC Batch: 98 | 827             |      | Date A | nalyzed: 2 | Analyzed By: AR |          |          |            |
|--------------|-----------------|------|--------|------------|-----------------|----------|----------|------------|
|              |                 |      |        | CCVs       | CCVs            | CCVs     | Percent  |            |
|              |                 |      |        | True       | Found           | Percent  | Recovery | Date       |
| Param        | $\mathbf{Flag}$ | Cert | Units  | Conc.      | Conc.           | Recovery | Limits   | Analyzed   |
| Chloride     |                 |      | mg/Kg  | 100        | 103             | 103      | 85 - 115 | 2013-02-11 |

### Standard (CCV-2)

| QC Batch: | 98827 |      |      | Date A | Analyzed: 2 |       | Analyzed By: AR |          |            |  |
|-----------|-------|------|------|--------|-------------|-------|-----------------|----------|------------|--|
|           |       |      |      |        | CCVs        | CCVs  | CCVs            | Percent  |            |  |
|           |       |      |      |        | True        | Found | Percent         | Recovery | Date       |  |
| Param     |       | Flag | Cert | Units  | Conc.       | Conc. | Recovery        | Limits   | Analyzed   |  |
| Chloride  |       |      |      | mg/Kg  | 100         | 97.2  | 97              | 85 - 115 | 2013-02-11 |  |

## Standard (CCV-1)

| QC Batch: | QC Batch: 98841 |      |       |       | 2013-02-12 | Analyzed By: C |          |            |  |
|-----------|-----------------|------|-------|-------|------------|----------------|----------|------------|--|
|           |                 |      |       | CCVs  | CCVs       | CCVs           | Percent  |            |  |
|           |                 |      |       | True  | Found      | Percent        | Recovery | Date       |  |
| Param     | Flag            | Cert | Units | Conc. | Conc.      | Recovery       | Limits   | Analyzed   |  |
| DRO       |                 | 1    | mg/Kg | 250   | 263        | 105            | 80 - 120 | 2013-02-12 |  |

## Standard (CCV-2)

| QC Batch: | 98841 | 08841 Date Analyz |      |       |       | 2013-02-12 |          | Analyzed By: CW |            |  |  |
|-----------|-------|-------------------|------|-------|-------|------------|----------|-----------------|------------|--|--|
|           |       |                   |      |       | CCVs  | CCVs       | CCVs     | Percent         |            |  |  |
|           |       |                   |      |       | True  | Found      | Percent  | Recovery        | Date       |  |  |
| Param     | Fl    | ag                | Cert | Units | Conc. | Conc.      | Recovery | Limits          | Analyzed   |  |  |
| DRO       |       |                   | 1    | mg/Kg | 250   | 275        | 110      | 80 - 120        | 2013-02-12 |  |  |

| Report Date:<br>112C05046 | February 15, | 2013 |                           | Work O<br>COG/Wi | Page Number: 30 of 36<br>Eddy Co., NM |                 |                     |            |
|---------------------------|--------------|------|---------------------------|------------------|---------------------------------------|-----------------|---------------------|------------|
| Standard (C               | CV-1)        |      |                           |                  |                                       |                 |                     |            |
| QC Batch: 98887           |              | Date | Date Analyzed: 2013-02-12 |                  |                                       | Analyzed By: YG |                     |            |
|                           |              |      |                           | CCVs<br>True     | CCVs<br>Found                         | CCVs<br>Percent | Percent<br>Recovery | Date       |
| Param                     | Flag         | Cert | Units                     | Conc.            | Conc.                                 | Recovery        | Limits              | Analyzed   |
| GRO                       |              | 1    | mg/Kg                     | 1.00             | 0.965                                 | 96              | 80 - 120            | 2013-02-12 |

## Standard (CCV-2)

| QC Batch: | 98887 |      | Date Analyzed: |              |               |                 | Analyzed By: YG     |            |  |
|-----------|-------|------|----------------|--------------|---------------|-----------------|---------------------|------------|--|
|           |       |      |                | CCVs<br>True | CCVs<br>Found | CCVs<br>Percent | Percent<br>Recovery | Date       |  |
| Param     | Flag  | Cert | Units          | Conc.        | Conc.         | Recovery        | Limits              | Analyzed   |  |
| GRO       |       | 1    | mg/Kg          | 1.00         | 1.01          | 101             | 80 - 120            | 2013-02-12 |  |

## Standard (CCV-3)

| QC Batch: | 98887 | 887 Date Analyzed: |       |              |               |                 | Analyzed By: YG     |            |  |
|-----------|-------|--------------------|-------|--------------|---------------|-----------------|---------------------|------------|--|
|           |       |                    |       | CCVs<br>True | CCVs<br>Found | CCVs<br>Percent | Percent<br>Recovery | Date       |  |
| Param     | Flag  | Cert               | Units | Conc.        | Conc.         | Recovery        | Limits              | Analyzed   |  |
| GRO       |       | 1                  | mg/Kg | 1.00         | 0.993         | 99              | 80 - 120            | 2013-02-12 |  |

## Standard (CCV-1)

| QC Batch: 98888 |      |            | Analyzed By: YG |              |               |                 |                     |            |
|-----------------|------|------------|-----------------|--------------|---------------|-----------------|---------------------|------------|
| D               |      | <i>a i</i> | <b>T</b> T 14   | CCVs<br>True | CCVs<br>Found | CCVs<br>Percent | Percent<br>Recovery | Date       |
| Param           | Flag | Cert       | Units           | Conc.        | Conc.         | Recovery        | Limits              | Analyzed   |
| Benzene         |      | 1          | mg/kg           | 0.100        | 0.104         | 104             | 80 - 120            | 2013-02-12 |
| Toluene         |      | 1          | mg/kg           | 0.100        | 0.106         | 106             | 80 - 120            | 2013-02-12 |
| Ethylbenzene    |      | 1          | mg/kg           | 0.100        | 0.111         | 111             | 80 - 120            | 2013-02-12 |
| Xylene          |      | 1          | mg/kg           | 0.300        | 0.345         | 115             | 80 - 120            | 2013-02-12 |

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|------------------------------------|------------|------|----------|-------------------------|-----------------|---------------------------------------|----------|------------|
| Standard (CCV-2)                   |            |      |          |                         |                 |                                       |          |            |
| QC Batch: 98888                    |            |      | Date Ana | alyzed: 201             | Analyzed By: YG |                                       |          |            |
|                                    |            |      |          | CCVs                    | CCVs            | CCVs                                  | Percent  |            |
|                                    |            |      |          | True                    | Found           | Percent                               | Recovery | Date       |
| Param                              | Flag       | Cert | Units    | Conc.                   | Conc.           | Recovery                              | Limits   | Analyzed   |
| Benzene                            |            | 1    | mg/kg    | 0.100                   | 0.0993          | 99                                    | 80 - 120 | 2013-02-12 |
| Toluene                            |            | 1    | mg/kg    | 0.100                   | 0.105           | 105                                   | 80 - 120 | 2013-02-12 |
| Ethylbenzene                       |            | 1    | mg/kg    | 0.100                   | 0.112           | 112                                   | 80 - 120 | 2013-02-12 |
| Xylene                             |            | 1    | mg/kg    | 0.300                   | 0.349           | 116                                   | 80 - 120 | 2013-02-12 |

## Standard (CCV-3)

| QC Batch: 98888 |                 |      | Analyzed By: YG |       |       |          |          |            |
|-----------------|-----------------|------|-----------------|-------|-------|----------|----------|------------|
|                 |                 |      |                 | CCVs  | CCVs  | CCVs     | Percent  |            |
|                 |                 |      |                 | True  | Found | Percent  | Recovery | Date       |
| Param           | $\mathbf{Flag}$ | Cert | Units           | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| Benzene         |                 | 1    | mg/kg           | 0.100 | 0.103 | 103      | 80 - 120 | 2013-02-12 |
| Toluene         |                 | 1    | mg/kg           | 0.100 | 0.107 | 107      | 80 - 120 | 2013-02-12 |
| Ethylbenzene    |                 | 1    | mg/kg           | 0.100 | 0.113 | 113      | 80 - 120 | 2013-02-12 |
| Xylene          |                 | 1    | mg/kg           | 0.300 | 0.351 | 117      | 80 - 120 | 2013-02-12 |

## Standard (CCV-1)

| QC Batch: | 98917 |      |      | Date A | nalyzed: 2 |       | Analyzed By: AR |          |            |  |
|-----------|-------|------|------|--------|------------|-------|-----------------|----------|------------|--|
|           |       |      |      |        | CCVs       | CCVs  | CCVs            | Percent  |            |  |
|           |       |      |      |        | True       | Found | Percent         | Recovery | Date       |  |
| Param     |       | Flag | Cert | Units  | Conc.      | Conc. | Recovery        | Limits   | Analyzed   |  |
| Chloride  |       |      |      | mg/Kg  | 100        | 103   | 103             | 85 - 115 | 2013-02-13 |  |

## Standard (CCV-2)

| QC Batch: | 98917 |                 |                       | Date A           | nalyzed: 2   | 013-02-13     |                 | Analy               | Analyzed By: AR |  |
|-----------|-------|-----------------|-----------------------|------------------|--------------|---------------|-----------------|---------------------|-----------------|--|
|           |       |                 |                       |                  | CCVs<br>True | CCVs<br>Found | CCVs<br>Percent | Percent<br>Recovery | Date            |  |
| D         |       | <b>7</b> 731    | <b>a</b> .            | **               |              |               |                 | U U                 |                 |  |
| Param     |       | $\mathbf{Flag}$ | $\operatorname{Cert}$ | $\mathbf{Units}$ | Conc.        | Conc.         | Recovery        | Limits              | Analyzed        |  |
| Chloride  |       |                 |                       | mg/Kg            | 100          | 97.4          | 97              | 85 - 115            | 2013-02-13      |  |

| Report Date: February 15, 2013<br>112C05046 |       |                                        |        | Work Or<br>COG/Wil | Page Number: 32 of 36<br>Eddy Co., NM |          |          |             |
|---------------------------------------------|-------|----------------------------------------|--------|--------------------|---------------------------------------|----------|----------|-------------|
| Standard (C                                 | CV-1) |                                        |        |                    |                                       |          |          |             |
| QC Batch: 98918                             |       |                                        | Date A | nalyzed:           | 2013-02-13                            |          | Analy    | vzed By: AR |
|                                             |       |                                        |        | CCVs               | CCVs                                  | CCVs     | Percent  |             |
|                                             |       |                                        |        | True               | Found                                 | Percent  | Recovery | Date        |
| Param                                       | Flag  | Cert                                   | Units  | Conc.              | Conc.                                 | Recovery | Limits   | Analyzed    |
| Chloride                                    |       |                                        | mg/Kg  | 100                | 100                                   | 100      | 85 - 115 | 2013-02-13  |
| Standard (C                                 | CV-2) |                                        |        |                    |                                       |          |          |             |
| QC Batch: 98                                | 8918  |                                        | Date A | analyzed:          | 2013-02-13                            |          | Analy    | zed By: AR  |
|                                             |       |                                        |        | CCVs               | CCVs                                  | CCVs     | Percent  |             |
|                                             |       |                                        |        | True               | Found                                 | Percent  | Recovery | Date        |
| Param                                       | Flag  | Cert                                   | Units  | Conc.              | Conc.                                 | Recovery | Limits   | Analyzed    |
| Chloride                                    |       |                                        | mg/Kg  | 100                | 99.6                                  | 100      | 85 - 115 | 2013-02-13  |
| Standard (C                                 | CV-1) |                                        |        |                    |                                       |          |          |             |
| QC Batch: 98                                | 8919  |                                        | Date A | nalyzed:           | 2013-02-13                            |          | Analy    | zed By: AR  |
|                                             |       |                                        |        | CCVs               | CCVs                                  | CCVs     | Percent  |             |
|                                             |       |                                        |        | True               | Found                                 | Percent  | Recovery | Date        |
| Param                                       | Flag  | Cert                                   | Units  | Conc.              | Conc.                                 | Recovery | Limits   | Analyzed    |
| Chloride                                    |       | ······································ | mg/Kg  | 100                | 98.7                                  | 99       | 85 - 115 | 2013-02-13  |

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## Standard (CCV-2)

| QC Batch: | C Batch: 98919 |      |      |       | nalyzed:     | 2013-02-13    | Analyzed By: AR |                     |            |  |
|-----------|----------------|------|------|-------|--------------|---------------|-----------------|---------------------|------------|--|
|           |                |      |      |       | CCVs<br>True | CCVs<br>Found | CCVs<br>Percent | Percent<br>Recovery | Date       |  |
| Param     |                | Flag | Cert | Units | Conc.        | Conc.         | Recovery        | Limits              | Analyzed   |  |
| Chloride  |                |      |      | mg/Kg | 100          | 101           | 101             | 85 - 115            | 2013-02-13 |  |

## Standard (CCV-1)

QC Batch: 98958

Date Analyzed: 2013-02-15

Analyzed By: YG

| Report Date: February 15, 2013<br>112C05046 |        |      |       |                       | ler: 13021102<br>ow A State # | Page Number: 33 of 36<br>Eddy Co., NM |                               |                  |
|---------------------------------------------|--------|------|-------|-----------------------|-------------------------------|---------------------------------------|-------------------------------|------------------|
| Param                                       | Flag   | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc.        | CCVs<br>Percent<br>Recovery           | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
| GRO                                         | 1 1005 | 1    | mg/Kg | 1.00                  | 0.935                         | 94                                    | 80 - 120                      | 2013-02-15       |

## Standard (CCV-2)

| QC Batch: | 98958 |                       | Date  | Analyzed: | 2013-02-15 |          | Analyzed By: YG |            |  |
|-----------|-------|-----------------------|-------|-----------|------------|----------|-----------------|------------|--|
|           |       |                       |       | CCVs      | CCVs       | CCVs     | Percent         |            |  |
|           |       |                       |       | True      | Found      | Percent  | Recovery        | Date       |  |
| Param     | Flag  | $\operatorname{Cert}$ | Units | Conc.     | Conc.      | Recovery | Limits          | Analyzed   |  |
| GRO       |       | 1                     | mg/Kg | 1.00      | 1.05       | 105      | 80 - 120        | 2013-02-15 |  |

## Standard (CCV-3)

| QC Batch: | 98958 |      | Date  | Analyzed:    | 2013-02-15    |                 | Analy               | zed By: YG |
|-----------|-------|------|-------|--------------|---------------|-----------------|---------------------|------------|
|           |       |      |       | CCVs<br>True | CCVs<br>Found | CCVs<br>Percent | Percent<br>Recovery | Date       |
| Param     | Flag  | Cert | Units | Conc.        | Conc.         | Recovery        | Limits              | Analyzed   |
| GRO       |       | 1    | mg/Kg | 1.00         | 1.05          | 105             | 80 - 120            | 2013-02-15 |

## Standard (CCV-1)

1

| QC Batch: | 98965 |      | Date  | Analyzed:    | 2013-02-15    |                 | Analy               | zed By: CW |
|-----------|-------|------|-------|--------------|---------------|-----------------|---------------------|------------|
|           |       |      |       | CCVs<br>True | CCVs<br>Found | CCVs<br>Percent | Percent<br>Recovery | Date       |
| Param     | Flag  | Cert | Units | Conc.        | Conc.         | Recovery        | Limits              | Analyzed   |
| DRO       |       | 1    | mg/Kg | 250          | 248           | 99              | 80 - 120            | 2013-02-15 |

### Standard (CCV-2)

QC Batch: 98965

Date Analyzed: 2013-02-15

Analyzed By: CW

| Report Date:<br>112C05046 | February 15, | 2013       |       |              | ler: 13021102<br>ow A State # | Page Number: 34 of<br>Eddy Co., N |                     |            |  |  |  |  |  |
|---------------------------|--------------|------------|-------|--------------|-------------------------------|-----------------------------------|---------------------|------------|--|--|--|--|--|
| D                         |              | <b>a</b> . |       | CCVs<br>True | CCVs<br>Found                 | CCVs<br>Percent                   | Percent<br>Recovery | Date       |  |  |  |  |  |
| Param                     | Flag         | Cert       | Units | Conc.        | Conc.                         | Recovery                          | Limits              | Analyzed   |  |  |  |  |  |
| DRO                       |              | 1          | mg/Kg | 250          | 229                           | 92                                | 80 - 120            | 2013-02-15 |  |  |  |  |  |

Report Date: February 15, 2013 112C05046 Work Order: 13021102 COG/Willow A State #3 Page Number: 35 of 36 Eddy Co., NM

## Appendix

## **Report Definitions**

NameDefinitionMDLMethod Detection LimitMQLMinimum Quantitation LimitSDLSample Detection Limit

## Laboratory Certifications

|              | Certifying | Certification       | Laboratory    |
|--------------|------------|---------------------|---------------|
| $\mathbf{C}$ | Authority  | Number              | Location      |
| -            | NCTRCA     | WFWB384444Y0909     | TraceAnalysis |
| -            | DBE        | VN 20657            | TraceAnalysis |
| -            | HUB        | 1752439743100-86536 | TraceAnalysis |
| -            | WBE        | 237019              | TraceAnalysis |
| 1            | NELAP      | T104704392-12-4     | Midland       |

## **Standard Flags**

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
- U The analyte is not detected above the SDL

## **Result Comments**

Report Date: February 15, 2013 112C05046 Work Order: 13021102 COG/Willow A State #3 Page Number: 36 of 36 Eddy Co., NM

1 Dilution due to surfactant.

2 Dilution due to surfactant.

## Attachments

The scanned attachments will follow this page. Please note, each attachment may consist of more than one page.

| MAILENT SIGN REQUEST OF CHAINE OF COSTOLOGY RECORD.       MAILENS REQUEST OF CHAINE OF COSTOLOGY RECORD.       TETRATECH<br>1910 N. Big Spring St.<br>Middland, Texas 79705<br>(452) 682-4556 + Fax (452) 682-3546       COC       TETRATECH<br>1910 N. Big Spring St.<br>Middland, Texas 79705<br>(452) 682-4556 + Fax (452) 682-3546       COC       TETRATECH<br>1910 N. Big Spring St.<br>Middland, Texas 79705<br>(452) 682-4556 + Fax (452) 682-3546       COC       TETRATECH<br>1910 N. Big Spring St.<br>Middland, Texas 79705<br>(452) 682-4556 + Fax (452) 682-3546       COC       MEMOLECT NO.:<br>(12 C O 50 4/L       PROJECT NO.:<br>(12 C O 50 4/L       NUMMER 20 50 4/L       PROJECT NO.:<br>(12 C O 50 4/L       NUMMER 20 50 4/L       PROJECT NO.:<br>(12 C O 50 4/L       NUMMER 20 50 4/L       PROJECT NO.:<br>(12 C O 50 4/L       NUMMER 20 50 4/L       SA Alt-1 0-1       LAB DD<br>20 CIT 2 S       Alt 10 -1       Alt 10 -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | A -                |                                             |           |        |       |                        |                          |                              |                                  | 2 11           |            | . A        | میں |          |           |     |             |            | T              | -        |           |                          | -1      |                  | د د د و د د  | P            | AGE              |          |          |                     | O       | F: (    | 3                   | والمعالية |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------|-----------|--------|-------|------------------------|--------------------------|------------------------------|----------------------------------|----------------|------------|------------|-----------------------------------------|----------|-----------|-----|-------------|------------|----------------|----------|-----------|--------------------------|---------|------------------|--------------|--------------|------------------|----------|----------|---------------------|---------|---------|---------------------|-----------|
| TETRATECH<br>1910 N. Big Spring St.<br>Milling, Texas 79105<br>(432) 682-4569 * Fax (432) 682-3946           Dillent NAME<br>COG         STE NAMAGET:<br>(432) 682-4569 * Fax (432) 682-3946           Dillent NAME<br>COG         STE NAMAGET:<br>(432) 682-4569 * Fax (432) 682-3946           Dillent NAME<br>COG         State Nama<br>(432) 682-4569 * Fax (432) 682-3946           Dillent NAME<br>COG         State Nama<br>(432) 682-4569 * Fax (432) 682-3946           Dillent NAME<br>COG         State Nama<br>(432) 682-4569 * Fax (432) 682-3946           Dillent NAME<br>(432) 682-4569 * Fax (432) 682-3946         State Nama<br>(432) 682-4569 * Fax (432) 682-3946           Dillent NAME<br>(432) 682-4569 * Fax (432) 682-3946         State Nama<br>(432) 682-4569 * Fax (432) 682-3946           Dillent No.<br>(432) 682-4569 * Fax (432) 682-3946         State Nama<br>(432) 682-459 * Fax (432) 682-3946           Dillent No.<br>(432) 682-459 * Fax (432) 682-3946         State Nama<br>(432) 682-659 * Fax (432) 682-3946           Dillent No.<br>(432) 682-459 * Fax (432) 682-3946         State Nama<br>(432) 682-669 * Fax (432) 682-3946           Dillent No.<br>(432) 682-459 * Fax (432) 682-3946         State Nama<br>(432) 682-669 * Fax (432) 682-469 *                                             | An                 | Analysis Request of Unain of Custody Record |           |        |       |                        |                          |                              |                                  |                |            |            |                                         | ┢        |           |     |             |            |                |          | LYS       | IS F                     | REQU    |                  |              |              | <u> </u>         |          |          |                     |         |         |                     |           |
| 1/2 C 0       50 446       (a. with a Astuck "3       (b) with a Astuck "3       (b) with a Astuck "3         1/2 C 0       50 446       (c) a with a Astuck "3       (c) a with a Astuck "3       (c) a with a Astuck "3         1/2 C 0       50 446       (c) a with a Astuck "3       (c) a with a Astuck "3       (c) a with a Astuck "3         1/2 C 0       50 446       (c) a with a Astuck "3       (c) a with a Astuck "3       (c) a with a With a Astuck "3         1/2 C 0       (c) a with a With a Astuck "3       (c) a with a With a Astuck "3       (c) a with a                  |                    |                                             |           |        |       |                        | 1910<br>Midla<br>(432) 6 | N. Big<br>and, To<br>82-4559 | g Sprin<br>exas 79<br>9 • Fax (4 | ig St.<br>9705 |            |            |                                         |          |           |     |             |            |                |          | d d       | Vr Pd Ha                 | ,       | (Circ            |              |              |                  | y Me     | thod     | No.,                |         | I, TDS  |                     |           |
| 1/2 C 0       50 446       Concentration       Concentration <t< td=""><td>CLIENT NAN</td><td><sup>ne:</sup>Coo</td><td>ĸ</td><td></td><td></td><td></td><td></td><td></td><td></td><td>n</td><td></td><td></td><td>NERS</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Ř</td><td></td><td>8 8</td><td></td><td></td><td>60/62</td><td>270/6</td><td></td><td></td><td></td><td></td><td></td><td>e<br/>E</td><td></td><td></td></t<> | CLIENT NAN         | <sup>ne:</sup> Coo                          | ĸ         |        |       |                        |                          |                              |                                  | n              |            |            | NERS                                    |          |           |     |             |            |                | Ř        |           | 8 8                      |         |                  | 60/62        | 270/6        |                  |          |          |                     |         | e<br>E  |                     |           |
| 320672     5     ×     AI+1     0-1     1     ×     X     X     X       675     I     AI+1     1-1.5     I     I     I     X     X     X       674     I     AI+1     1-1.5     I     I     I     X     X     I       674     I     AI+1     2-2.5     I     I     I     I     I       675     I     AI+1     3-3.5     I     I     I     I       676     I     AI+1     5-5.5     I     I     I       678     I     AI+1     5-5.5     I     I     I       678     I     AI+1     5-5.5     I     I     I       678     I     AI+1     5-5.5     I     I     I       680     I     AI+1     5-5.5     I     I     I       681     I     I     AI+1     5-5.5     I     I     I       680     I     AI+1     5-7.5     I     I     I     I       10000     ELINDURINED BY (Bijnature)     Date     I     I     IIIII     IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 11200              | 0.:                                         | 46        |        |       |                        |                          | state<br>E                   | # 3<br>Lales                     | Cn' I          | 1m         |            | I OF CONTAI                             | (N/N) C  |           |     |             | Τ          | 248            | OTS MOR. | 0         | etals Ag A<br>etals Ag A | latiles | mi Volatiles     | P 240/82     | Semi. Vol. 8 | 080/608          | 8/608    | Spec.    | eta (Air)           | bestos) |         |                     |           |
| 673       AP+)       1-1.5         674       AP-)       2:2.5         675       AP-)       2:2.5         675       AP-)       3:3.5         676       AP-)       4.4.3         677       AP-)       5:5.5         678       AP-)       7:7.5         680       AP-)       7:7.5         Bunc       1.6.00       PCCENCO BY: (Signature)         7mm:       PCCENCO BY: (Signature)       PCENCO BY: (Signature)         <                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LAB I.D.<br>NUMBER | •                                           | TIME      | MATRIX | COMP. |                        |                          | SAM                          |                                  | ITIFICATI      | 'ON        |            | NUMBER                                  | FILTERE  | ΨŪ        |     | NONE        |            | <b>BTEX BO</b> | 8<br>Ha  | PAH 827   | TCLP M                   | TCLP Vo | TCLP Se          | RCI<br>GC MS | GC.MS        | PCB's 8          | Pest. 80 | Camma    | Alpha B             | PLM (As | Major A |                     |           |
| 674       др.) 2.2.5         675       др.) 3.3.5         676       др.) 4.4.3.5.5         676       др.) 4.4.3.5.5         677       др.) 4.4.3.5.5         678       др.) 4.4.3.5.5         678       др.) 4.4.3.5.5         678       др.) 4.4.3.5.5         678       др.) 4.4.1.7.5.5         678       др.) 4.4.1.7.5.5         678       др.) 4.4.1.7.5.5         680       др.) 4.4.1.7.5.5         680       др.) 4.4.1.7.5.5         680       др.) 4.4.1.7.5.5         680       др.) 7.5.5         675       др.) 7.5.5         680       др.) 7.5.5         680       др.) 7.5.5         680       др., 7.5.5         680       др., 7.5.5         680       др., 7.5.5         680       др., 7.5.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 320672             | 1-8-                                        |           | 5      | ×     | A17-1                  | 0                        | -)                           |                                  |                |            |            | 1                                       |          |           | ×   |             |            | X              | X        |           |                          |         |                  |              |              |                  |          | [        |                     |         |         |                     |           |
| 674     Apr.1     2:2.5       675     Apr.1     3:3.5       676     Apr.1     3:3.5       676     Apr.1     4.4.5       678     Apr.1     5:5.5       678     Apr.1     5:4.5       679     Apr.1     5:4.5       681     Apr.1     5:4.5       681     Apr.1     5:4.5       681     Apr.1     5:4.5       679     Apr.1     5:4.5       681     Apr.1     5:4.5       692     Apr.1     5:4.5 <td< td=""><td>673</td><td>i</td><td></td><td></td><td></td><td>AH-1</td><td>j.</td><td>-1.5</td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>C</td><td></td><td></td><td></td><td></td><td></td></td<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 673                | i                                           |           |        |       | AH-1                   | j.                       | -1.5                         |                                  |                |            |            | 1                                       |          |           |     | 4           |            |                |          |           |                          |         |                  |              |              |                  |          | C        |                     |         |         |                     |           |
| 675       A+1 3-3.5         676       A+1 4-4.5         676       A+1 5-5.5         677       A+1 5-5.5         678       A+1 5-5.5         678       A+1 5-5.5         678       A+1 7-5.5         678       A+1 7-5.5         680       A+1 8-9.5         680       A+1 9-9.5         681       A+1 9-9.5         Cuputored BY, Bignaturel       The:         1.1.0       RECEIVED BY, Bignaturel         70000       Date:         1.1.1.0       RECEIVED BY, Bignaturel         700000       Date:<                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 674                |                                             |           |        | Π     |                        |                          |                              |                                  |                |            |            |                                         | Π        | T         | Τ   |             | Τ          |                |          | Τ         | Τ                        | Γ       | Π                |              | Τ            | Π                | T,       | Ø        |                     |         |         |                     |           |
| 67%       A+1       M-4.5         67%       A+1       S5.5         67%       A+1       S7.5         680       A+1       S7.5         680       A+1       S7.5         681                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 675                |                                             |           |        |       | · ·                    |                          |                              |                                  |                | <u></u>    |            | 1                                       |          | 1         |     |             | $\uparrow$ |                |          |           |                          |         |                  |              |              |                  |          | A        | Π                   |         |         | Π                   | ٦         |
| 67       Apt 1       555         678       Apt 1       555         678       Apt 1       645         678       Apt 1       645         678       Apt 1       745         680       Apt 1       755         680       Apt 1       755         680       Apt 1       755         680       Apt 1       885         691       Apt 1       885         692       Apt 1       885         693       Apt 1       885         694       Apt 1       885         695       Apt 1       885         696       Bate       1220         70000000       Bate       1220         70000000000000       Bate       70000000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6-76               |                                             |           |        |       |                        |                          |                              |                                  |                |            |            |                                         |          |           | 1   | $\uparrow$  | $\uparrow$ |                |          | ╈         | T                        | T       |                  |              | 1            | Π                |          | 1        | $\square$           |         | T       | $\square$           | 1         |
| 678       AH+1       6.6.5         678       AH+1       6.6.5         678       AH+1       7.7.5         680       AH+1       7.7.5         680       AH+1       8.8.5         681       AH+1       9.9.5         ELINGUISHED BY: (Signature)       Date:       1.2.2.1.3         Time:       Time:       1.1.2.0         ELINGUISHED BY: (Signature)       Date:       1.2.2.1.3         Time:       Time:       1.1.2.0         FECENED BY: (Signature)       Date:       1.2.2.0         SAMPLED BY: (Signature)       Date:       Time:         Time:       RECEIVED BY: (Signature)       Date:       Time:         ELINGUISHED BY: (Signature)       Date:       Time:       FEDEX         Date:       Time:       RECEIVED BY: (Signature)       Date:       Time:         Time:       RECEIVED BY: (Signature)       Date:       Time:       Time:         Time:       RECEIVED BY: (Signature)       Date:       Time:       Tim                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | - 677              |                                             |           |        | ╢     | 1                      |                          |                              |                                  |                |            |            |                                         |          | ╈         | -†- | ╢           | $\uparrow$ |                |          | +         | ╋                        | ╞╴      |                  | +            | ┢            |                  | Y        | ?        | $\uparrow$          | 1       | ╈       |                     | 1         |
| 673       April 7.5.5         680       April 7.5.5         690       Date:         700       Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                                             |           | ╟╫╫    | ╢     |                        |                          |                              |                                  |                |            |            |                                         |          |           | +   | $\ $        | 1          |                |          | +         | ╋                        | 1-      |                  | ╈            | ╀            |                  | T        | Ā        | $\dagger$           | -†      | +       |                     | 1         |
| 680       AH-1       895         7000       Date:       7000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                             |           |        | -#    | 1                      |                          |                              | ,                                |                |            |            |                                         |          | +         | +-  | $\parallel$ | $\dagger$  |                |          | $\dagger$ | ╈                        | ╎─      | ┝╌┼              |              | ╀            |                  |          | 1        |                     | -†      | +-      | ┝─┼                 | 1         |
| 68       AH       9-9.5         Image: 1-2-13       PECENED BF: (Ignature)       Date: 218/15       SAMPLED BY: (Print & Initial)       Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                                             |           |        | ╢     | 1                      |                          |                              |                                  |                | <u> </u>   |            |                                         | ┝─╁      | ╈         | +1  | 4-          | +          | ┢╴             |          | ┽         | ╋                        |         | ┠─┼              | ╋            | ┨            | $\left  \right $ | f        | 7-       | ┟╴┦                 | ╡       | +-      | $ \uparrow$         | 1         |
| ELINQUISHED BY: (Signature)       Date:       1-2-13       PECENED BI: (Signature)       Date:       218/13       SAMPLED BY: (Print & Initial)       Date:       Date:         Max                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    | 11                                          |           | 1      | ┢     | 1.                     |                          |                              |                                  |                |            |            |                                         |          | +-        | t   | ,           | +          |                |          | ╉         | ╋                        | ╞─╴     | $\left  \right $ | +            | ╀╴           |                  |          |          | $\uparrow \uparrow$ | +       | ╉       | $\uparrow \uparrow$ | +         |
| Time:     Time:     FEDEX     BUS       ieliNOUISHED BY: (Signature)     Date:     Date:     HAND DELIVERED     UPS     OTHER:       Time:     Time:     Time:     Time:     TETRA TECH CONTACT PERSON:     Results by:       DORESS:     Time:     Time:     Time:     TETRA TECH CONTACT PERSON:     Results by:       DORESS:     TY:     Middlesd     STATE:     TAL     ZIP:     DATE:     TIME:       ONTACT:     PHONE:     DATE:     DATE:     TIME:     Att thorized:     Yes       AMPLE CONDITION WHEN RECEIVED:     BUS ADDRAME     TATE!     TIME:     No       J. J. C.     MAND delygen paysle     Att duithedL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ELINQUISHED        |                                             |           |        |       | Date:                  | 7-8-1                    | 3                            |                                  |                | en         | au         | Ď                                       | 5        |           |     | 181<br>16   | 13         | <u>}</u>       |          |           |                          |         |                  |              |              | اا<br>چون        | R        |          | Tir                 | ne: _   |         |                     |           |
| Time:     Time:     Terra TECH CONTACT PERSON:     Results by:       DDRESS:     If indicad     STATE:     If indicad     If indicad     If indicad       ONTACT:     PHONE:     DATE:     DATE:     TIME:     If indicad:       AMPLE CONDITION WHEN RECEIVED:     BEMARKS:     DATE:     TIME:     If indicad:       J. J. C.     If indicad:     PHONE:     DATE:     TIME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                                             |           |        |       | Time:                  |                          |                              | _                                |                |            |            |                                         | -        | Tim       | e:  |             |            |                |          | FE        | DEX                      |         |                  | B            | US           |                  |          |          |                     |         | ·       |                     |           |
| AMPLE CONDITION WHEN RECEIVED: 2.2°C My depen payle of THH proceed 100 mg/lig Hiddelich.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | DORESS:            |                                             |           |        |       | ZIP                    | 2:                       |                              |                                  | D BY: (Signa   | iture)     |            |                                         |          |           |     |             |            |                | =-{<br>- |           | 1                        |         |                  |              |              |                  | A۴       | 5        |                     | RŲSi    | HChar   | ges                 |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    | BON WHEN                                    | RECEIVED: | ٥N     | PHO   |                        | MARKS                    | An                           | DATE:                            | 00             |            | 1          |                                         | ле:<br>Ъ | 11        |     |             |            |                |          | 11        |                          |         | in.              |              | 10           |                  | 4.,      | $\nabla$ | He                  | Å       | arei    | đ                   | 10<br>- 6 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    | Please f                                    | L. L      | copi   | es -  | <u>///</u><br>Laborato | UM<br>iry reta           | ins Yell                     | W CODY                           | - Return       | Orginal Ci | opy to Ter | tra Te                                  | ich i    | 7<br>· Pr | y   | C -         |            |                | ains     | Pin       | K CO                     | Py      | - Ac             | 7/           | nying        | g rec            | ceive    | s G      | old c               | ору     |         |                     | 7         |

|                    |                    |           |                  | <del>.</del>  |                  | 130                 | 21/02                                                       |                 |                |    |       |      |            |         |                  |                     |                                     |                |         |          |          |                         |                                          |          |                                    |                               |     |    |   |
|--------------------|--------------------|-----------|------------------|---------------|------------------|---------------------|-------------------------------------------------------------|-----------------|----------------|----|-------|------|------------|---------|------------------|---------------------|-------------------------------------|----------------|---------|----------|----------|-------------------------|------------------------------------------|----------|------------------------------------|-------------------------------|-----|----|---|
| An                 | alys               | sis F     | <b>le</b>        | qı            | lest of          | Cha                 | in of Custoc                                                | lv F            | R              | ec | :0    | rd   |            |         |                  |                     |                                     |                |         |          | PA       |                         |                                          | 2        | (                                  | OF:                           | 3   |    |   |
|                    |                    |           | Ē                | 8             | <u> </u>         |                     |                                                             |                 | _              |    |       |      | - <b>u</b> | ł       |                  |                     |                                     | (0             |         |          |          |                         | QUE:<br>Aetho                            |          | lo.)                               |                               |     |    |   |
|                    |                    |           |                  |               | 1910 I<br>Midlai | N. Big S<br>nd, Tex | <b>TECH</b><br>Spring St.<br>as 79705<br>Fax (432) 682-3946 |                 |                |    |       |      |            |         | )5 (Ext. to C35) | d Cr Pb Hg Se       | TCLP Metals Ag As Ba Cd Vr Pd Hg Se |                |         |          |          |                         |                                          |          |                                    | TDS                           |     |    |   |
| CLIENT NAM         | ME:<br>COO         |           |                  |               | SITE             | MANAGER             | i:<br>Javerz                                                | ERS             | Γ              | P  | RESE  | ERVA |            |         | TX1005           | Ba C                | Ba                                  |                |         | 0/624    | 70/625   |                         |                                          |          |                                    | s, pH,                        |     |    |   |
| PROJECT N          |                    | <u>n</u>  |                  |               | T NAME:          |                     |                                                             | CONTAINERS      |                | h  |       |      |            |         | Mod.             | g As                | g As                                |                | tilles  | 0/826    | ol. 82   |                         |                                          |          |                                    | ations                        |     |    |   |
| 112000             | 246                | r         | <mark>↓ ¢</mark> | 06            | · Willing A S    | tarte "             | <u> </u>                                                    | ß               | NN<br>NN       |    |       |      |            | ₽       | 15 N             | tals A              | tals A                              | tites          |         | 1.824    | žmi. V   | 30/605<br>(608          |                                          | bec.     | a (Air)<br>estos                   | O/suo                         |     |    |   |
| LAB I.D.<br>NUMBER |                    | TIME      | MATRIX           | COMP.<br>GRAB |                  | SAMPLI              | E IDENTIFICATION                                            | NUMBER OF       | FILTERED (Y/N) | Ę  | HNO3  |      |            |         | TeH 8015         | PAH 82/U<br>RCRA Me | TCLP Me                             | TCLP Volatiles | RCI Sen | GC.MS Vo | GC.MS Se | PCB's 806<br>Pest. 808/ | (Chloride)                               | Gaittime | Alpha Beta (Air)<br>PLM (Asbestos) | Major Anions/Cations, pH, TDS |     |    |   |
| 682                | KE                 |           | s                | ×             | AH-2 0-1         |                     |                                                             | 1               |                |    | ;     | x    | Γ          | Ń       | X                | Τ                   |                                     | T              | T       | Γ        |          |                         | X                                        |          |                                    |                               |     |    |   |
| 683                | (                  |           | $\left[ \right]$ | 1             | AZ 1-1.          | 5                   |                                                             | 1               |                |    |       | 1    |            |         |                  |                     |                                     |                |         |          |          |                         | У                                        |          |                                    |                               |     |    |   |
| 684                |                    |           |                  |               | AH-2 2-2         | 5                   |                                                             |                 |                |    |       |      |            |         |                  |                     |                                     |                |         |          |          |                         | V                                        |          |                                    |                               |     |    |   |
| 685                |                    |           |                  |               | AH2 3.3.         | ٢                   |                                                             |                 |                |    |       |      |            |         |                  |                     |                                     |                |         |          |          |                         | X                                        |          |                                    |                               |     |    |   |
| CSb                |                    |           |                  |               | AH-2 4.4         | 1.5                 |                                                             |                 |                |    |       |      |            |         |                  |                     |                                     |                |         |          |          |                         | X                                        |          |                                    |                               |     |    |   |
| 687                |                    |           |                  |               | AH-Z S-          | 5.5                 |                                                             |                 |                |    |       |      |            |         |                  |                     | $\square$                           |                |         |          |          |                         | X                                        |          |                                    |                               |     |    |   |
| 688                |                    |           |                  |               | Atz 6-           | (5                  | ······································                      |                 |                |    |       |      |            |         |                  |                     |                                     |                |         |          |          |                         | M                                        |          |                                    |                               |     |    |   |
| 689                |                    |           |                  | 1             | AH-2 7.          | 1.5                 |                                                             | _               |                |    |       |      |            |         |                  |                     | Ш                                   |                |         |          |          |                         | У                                        |          |                                    |                               |     |    |   |
| 690                |                    |           |                  |               | A11-2 8-         | 8.5                 |                                                             |                 |                |    |       |      |            |         |                  |                     |                                     |                |         |          |          |                         | N                                        |          |                                    |                               |     |    |   |
| 697                | BY: (Signature     | Pl .      | 4                |               | AH-2 5-          | - 9.5               | Derseillen Byl (Signatura)                                  | L               |                |    |       |      | Ļ          |         |                  |                     |                                     |                |         |          |          |                         | L)                                       | ,        |                                    |                               |     |    |   |
|                    | King BY: Signature | <u>L-</u> |                  |               | Time: 162-       |                     | RECEIVED BY (Signature)                                     |                 |                |    | ne: _ | 2781 | ゐ          | aine Li |                  |                     | EDB                                 |                |         |          |          | Ry                      | <u>4</u>                                 |          | Date:<br>Time:                     |                               |     |    |   |
|                    |                    |           |                  |               | Time:            |                     | RECEIVED BY: (Signature)                                    | <b></b>         |                |    | ne:   |      |            |         | -   *            | FEDE                | le Shi<br>Ex<br>D Dell              |                |         | BUS      | 5        |                         |                                          |          | RBILL<br>THER:                     |                               |     |    | - |
| ELINQUISHED        |                    |           |                  |               | Date:<br>Time:   |                     | RECEIVED BY: (Signature)                                    |                 |                |    | te:   |      |            |         | ī                |                     | TECH                                |                |         |          |          |                         |                                          |          |                                    | suits i                       | by: |    | - |
| CECEIVING LAB      | -                  | STATE:    | 12               | PHON          | ZIP:             |                     | ECEIVED BY: (Signature)                                     | BY: (Signature) |                |    |       |      |            |         | -                | I                   | ka                                  | 10             | :./e9   | ær       |          | st                      | HH RUSH Charges<br>Authorized:<br>Yes Ni |          |                                    |                               |     | No | _ |
| SAMPLE CONDI       | TION WHEN          | RECEIVED: | )                |               | REMARKS:         |                     |                                                             |                 |                |    |       |      |            |         | <u> </u>         |                     |                                     |                |         |          |          |                         |                                          |          |                                    |                               |     |    |   |

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| Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Analysis Request of Chain of Custody Record |                                                                                                   |                                        |                      |          |                         |      |              |                                                    |                  |                                 | PAGE: <b>3</b> OF: <b>3</b><br>ANALYSIS REQUEST |                |                            |                          |                           |           |          |                      |                |                          |    |           |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|----------|-------------------------|------|--------------|----------------------------------------------------|------------------|---------------------------------|-------------------------------------------------|----------------|----------------------------|--------------------------|---------------------------|-----------|----------|----------------------|----------------|--------------------------|----|-----------|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             |                                                                                                   |                                        |                      |          | <u></u>                 |      |              | ANALYSIS REQUEST<br>(Circle or Specify Method No.) |                  |                                 |                                                 |                |                            |                          |                           |           |          |                      |                |                          |    |           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             | <b>TETRA TEC</b><br>1910 N. Big Spring St<br>Midland, Texas 79705<br>(432) 682-4559 • Fax (432) 6 | <b>t.</b><br>5<br>682-3946             |                      |          |                         |      |              | _                                                  | 05 (Ext. to C35) | Ba Cd Cr Ph Ha Se               | Cd Vr Pd Hg Se                                  |                |                            |                          | 2                         |           |          |                      |                | pH, TDS                  |    |           |  |
| CLIENT NAME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                             | SITE MANAGER:                                                                                     | Tauerer                                | NERS                 |          |                         | SER\ | VATIVE<br>OD |                                                    | TX1005           | s Ba                            | s Ba                                            |                |                            | 60/62                    | 270/62                    |           |          |                      |                | ns, pH                   |    |           |  |
| PROJECT NO.:<br>//2005046                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PROJECT NAN                                 | E:<br>or A Steh "S                                                                                | ······································ | F CONTAL             | (N/X)    | Ţ                       |      |              | 8                                                  | 5 MOD.           | als Ag As                       | als Ag As                                       | tiles          | i Volatiles                | 1. 8240/82               | mi. Vol. 8                | 0/6U8     |          | 00C.                 | stos)          | ons/Catio                |    |           |  |
| LAB I.D.<br>NUMBER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | AATRIX<br>GRAB<br>GRAB                      | SAMPLE IDENTIFIC                                                                                  | CATION                                 | NUMBER OF CONTAINERS | FILTERED | HNO3                    | ICE  | NONE         | BTEX 8021B                                         | TPH 8015 MOD.    | PAH 8270<br>RCRA Metals Ag As E | TCLP Metals Ag                                  | TCLP Volatiles | TCLP Semi Volatiles<br>RCI | GC.MS Vol. 8240/8260/624 | GC.MS Semi. Vol. 8270/625 | PCE 3 808 | Chloride | Gamma S <sub>1</sub> | PLM (Asbestos) | Major Anions/Cations,    |    |           |  |
| 672 1-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5 × Bac                                     | hyround 0-1                                                                                       |                                        | 1                    |          |                         | X    |              |                                                    |                  | Ť                               |                                                 |                |                            |                          |                           |           | M        |                      | T              | T                        |    | $\square$ |  |
| 693                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1   Bee                                     | Lecond 1.5-2                                                                                      |                                        |                      |          |                         | 1    |              | T                                                  |                  |                                 | Π                                               |                | 1                          |                          |                           | T         | 7        |                      |                | Π                        |    |           |  |
| 69.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Be                                          | Leroual 3.5-4                                                                                     |                                        | $\prod$              |          |                         |      |              |                                                    | Π                |                                 |                                                 |                | T                          | Π                        |                           | Τ         | N        |                      |                |                          |    | Π         |  |
| 695                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | V V Ba                                      | Lyroud 5.5-6                                                                                      |                                        | Y                    |          |                         | Ψ    |              |                                                    | Π                |                                 |                                                 |                |                            |                          |                           |           | N        |                      |                |                          |    | $\square$ |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             |                                                                                                   | <u></u>                                |                      |          |                         |      |              |                                                    |                  |                                 |                                                 |                |                            |                          |                           |           |          |                      |                |                          |    |           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             | ·                                                                                                 |                                        |                      |          |                         |      |              |                                                    |                  |                                 |                                                 |                |                            |                          | _                         |           |          |                      |                |                          |    |           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             |                                                                                                   |                                        |                      |          |                         |      |              |                                                    |                  |                                 |                                                 |                |                            |                          | _                         |           |          |                      |                |                          |    |           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             |                                                                                                   |                                        |                      | 1        |                         |      |              | <u> </u>                                           |                  |                                 |                                                 |                |                            |                          |                           |           |          |                      |                |                          |    | <b> </b>  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             | · · · · · · · · · · · · · · · · · · ·                                                             |                                        |                      | _        | $\downarrow$            |      | _            | $\downarrow$                                       |                  |                                 |                                                 |                | $\downarrow$               |                          |                           |           |          |                      |                |                          | ┝  |           |  |
| RELINQUISHED BY: (Signature)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | L Date:                                     | 1.9-17 RECEIVED BY                                                                                | (Signature)                            |                      |          | Date:<br>Time:          |      | /13          |                                                    |                  | SAMP                            |                                                 | BY: (Pri       | int & li                   | nitiat                   | 6                         |           | -        | 4                    | Date:<br>Time: |                          |    |           |  |
| RELINQUISHED BY: (Signature)<br>RELINQUISHED BY: (Signature)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Date:<br>Time:<br>Date:                     | RECEIVED BY:                                                                                      |                                        |                      |          | Date:<br>Time:<br>Date: |      |              |                                                    | _                | FED                             | EX                                              | lippel         |                            | (Circle<br>BUS<br>UPS    | ;                         |           |          | AIF                  | RBILL<br>HER:  | #:                       |    |           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Time:                                       | RECEIVED BY: (Si                                                                                  |                                        |                      |          | Time:                   |      |              |                                                    | -                | TETRA                           | TECI                                            | H CON          | TACT                       | PERS                     | SON:                      | er        | A        | H.                   |                | sults by<br>SH Cha       |    |           |  |
| ADDRESS:<br>CITY: And Control States Sta | PHONE:                                      | ZIP: DATE:                                                                                        |                                        | TIM                  | £:       |                         |      |              |                                                    | _                |                                 |                                                 | م ہو۔<br>      |                            | '4<br>                   |                           |           | . 1      | <b>`</b>             | Aut            | SH Cha<br>horized<br>Yes | 1: | No        |  |
| L.2°                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | C                                           |                                                                                                   |                                        |                      |          |                         |      |              |                                                    |                  |                                 |                                                 |                |                            |                          |                           |           |          |                      |                |                          |    |           |  |

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