

## Bratcher, Mike, EMNRD

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**From:** Tavarez, Ike [Ike.Tavarez@tetrattech.com]  
**Sent:** Thursday, January 20, 2011 8:28 AM  
**To:** Bratcher, Mike, EMNRD  
**Subject:** RE: COG - Mesilla State #3 TB Work Plan Approval Request  
**Attachments:** COG - Mesilla State #3TB - Revised Work Plan .pdf

Mike,

I have revised the Figures for your review. Let me know if you need additional information, thanks.

Ike Tavarez  
Tetra Tech

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**From:** Bratcher, Mike, EMNRD [<mailto:mike.bratcher@state.nm.us>]  
**Sent:** Wednesday, January 19, 2011 11:35 AM  
**To:** Tavarez, Ike  
**Subject:** RE: COG - Mesilla State #3 TB Work Plan Approval Request

Ike,

Will you review the labeling on the diagrams? I think SB-3/AH-1 and SB-2/AH-6 may be mislabeled.

Mike

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**From:** Tavarez, Ike [<mailto:Ike.Tavarez@tetrattech.com>]  
**Sent:** Friday, January 07, 2011 12:03 PM  
**To:** Bratcher, Mike, EMNRD  
**Cc:** Pat Ellis; Joshua Russo  
**Subject:** COG - Mesilla State #3 TB Work Plan Approval Request

Mike,

Please review the attached work plan on the Mesilla State #3 TB . If you need a hard copy of the work plan let me know. Once approved, Tetra Tech will setup the remediation. Call me if you have any questions, thanks

Ike Tavarez, PG | Senior Project Manager

Main: 432.682.4559 | Fax: 432.682.3946 | Cell: 432.425.3878

[Ike.Tavarez@tetrattech.com](mailto:Ike.Tavarez@tetrattech.com)

Tetra Tech | Complex World. Clear Solutions™

1910 North Big Spring | Midland, TX 79705 | [www.tetrattech.com](http://www.tetrattech.com)

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# SITE INFORMATION

Report Type: Work Plan

*REVISED*

## General Site Information:

|                             |                                                                                                                                                       |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site:                       | Mesilla State #3 Tank Battery                                                                                                                         |
| Company:                    | COG Operating LLC                                                                                                                                     |
| Section, Township and Range | T-17S R-30E Sec. 16 Unit H                                                                                                                            |
| Lease Number:               | B-2103                                                                                                                                                |
| County:                     | Eddy County                                                                                                                                           |
| GPS:                        | 32.83727° N 103.96921° W                                                                                                                              |
| Surface Owner:              | State                                                                                                                                                 |
| Mineral Owner:              |                                                                                                                                                       |
| Directions:                 | From the intersection of Hwy 529 and Goat Roper Road (Loco Hills, NM), travel North 0.7 miles, turn right 0.5 miles, turn left 0.3 miles to location. |
|                             |                                                                                                                                                       |
|                             |                                                                                                                                                       |
|                             |                                                                                                                                                       |

## Release Data:

|                          |                                |
|--------------------------|--------------------------------|
| Date Released:           | 9/3/2010                       |
| Type Release:            | BS&W                           |
| Source of Contamination: | High winds broke support brace |
| Fluid Released:          | 60 bbls                        |
| Fluids Recovered:        | 50 bbls                        |

## Official Communication:

|               |                             |                          |
|---------------|-----------------------------|--------------------------|
| Name:         | Pat Ellis                   | Kim Dorey                |
| Company:      | COG Operating, LLC          | Tetra Tech               |
| Address:      | 550 W. Texas Ave. Ste. 1300 | 1910 N. Big Spring       |
| P.O. Box      |                             |                          |
| City:         | Midland Texas, 79701        | Midland, Texas           |
| Phone number: | (432) 686-3023              | (432) 631-0348           |
| Fax:          | (432) 684-7137              |                          |
| Email:        | pellis@conchoresources.com  | kim.dorey@tetrattech.com |

## Ranking Criteria

| Depth to Groundwater:                     | Ranking Score | Site Data |
|-------------------------------------------|---------------|-----------|
| <50 ft                                    | 20            |           |
| 50-99 ft                                  | 10            |           |
| >100 ft.                                  | 0             | 0         |
| Wellhead Protection:                      | Ranking Score | Site Data |
| Water Source <1,000 ft., Private <200 ft. | 20            |           |
| Water Source >1,000 ft., Private >200 ft. | 0             | 0         |
| Surface Body of Water:                    | Ranking Score | Site Data |
| <200 ft.                                  | 20            |           |
| 200 ft - 1,000 ft.                        | 10            |           |
| >1,000 ft.                                | 0             | 0         |
| <b>Total Ranking Score:</b>               | <b>0</b>      |           |

### Acceptable Soil RRAL (mg/kg)

| Benzene | Total BTEX | TPH   |
|---------|------------|-------|
| 10      | 50         | 5,000 |



**TETRA TECH**

December 29, 2010

Mr. Mike Bratcher  
Environmental Engineer Specialist  
Oil Conservation Division, District 2  
1301 West Grand Avenue  
Artesia, New Mexico 88210

**Re: Work Plan for the COG Operating LLC., Mesilla State #3 , Unit H,  
Section 16, Township 17 South, Range 30 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 Mesilla State #3 located in Unit H, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83727°, W 103.96921°. 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 September 3, 2010, and released approximately sixty (60) barrels of basic sediment and water (BS&W). The spill was caused by high winds breaking loose a support brace on the PVC leg of the storage vessel. COG personnel replaced the broken PVC line with a steel line. Fifty (50) barrels of standing fluids were recovered. The spill initiated from the battery and breached the facility dike impacting the pad area measuring approximately 175' x 175'. The spill migrated off the south pad into the pasture, impacting an area approximately 20' by 20'. The initial C-141 form is enclosed in Appendix A.

### **Groundwater**

No water wells were listed within Section 16. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 300' below surface. The groundwater data is shown in Appendix B.

Tetra Tech

1910 Highway 94, Spring, New Mexico 87705

Tel: 505.627.4259 Fax: 505.682.0916 [www.tetratech.com](http://www.tetratech.com)



## **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 5,000 mg/kg.

## **Soil Assessment and Analytical Results**

On September 22, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of seven (7) auger holes (AH-1 through AH-7) were installed using a stainless steel hand auger to assess the impacted soils. Select 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 B. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all the submitted samples were below RRAL for TPH and BTEX. Auger holes (AH-2, AH-4 and AH-5) had slight chloride concentrations at the surface (0-1') of 327 mg/kg, 206 mg/kg and 818 mg/kg, respectively. The chloride concentrations declined below reporting limit of <200 at 1-1.5' below surface. The remaining auger holes were not vertically defined, with bottom hole chloride concentrations of 3,910 mg/kg at 1-1.5' (AH-1), 9,580 mg/kg at 6-6.5' (AH-6), and 1,510 mg/kg at 5-5.5' (AH-7).

On December 1, 2010, Tetra Tech personnel supervised the installation of three soil borings (SB-1, SB-2 and SB-3) utilizing an air rotary drilling rig. Soil samples were collected to define the impact of the chloride concentrations in the vicinity of AH-1, AH-6 and AH-7. Referring to Table 1, elevated chloride concentrations significantly declined with depth at 7' (SB-1), 3' (SB-2) and 40' (SB-3). The soil boring locations are shown on Figure 3



TETRA TECH

### Work Plan

COG proposes to removal of impacted material as highlighted (green) in Table 1 and Figure 4. Once the areas are excavated to the appropriate depths, the excavation will be backfilled with clean soil. Upon completion a final report will be submitted to the NMOCD.

The goal of the remediation is to establish surface growth and to reduce the environmental liabilities for the protection of the groundwater. Concerns exist regarding a deep excavation plan. Since the impacted area is in the native sand dunes, the proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable. If the depths are not reached, a 40 mil liner will be installed at depth of 4' to 5' below surface to cap the impacted area.

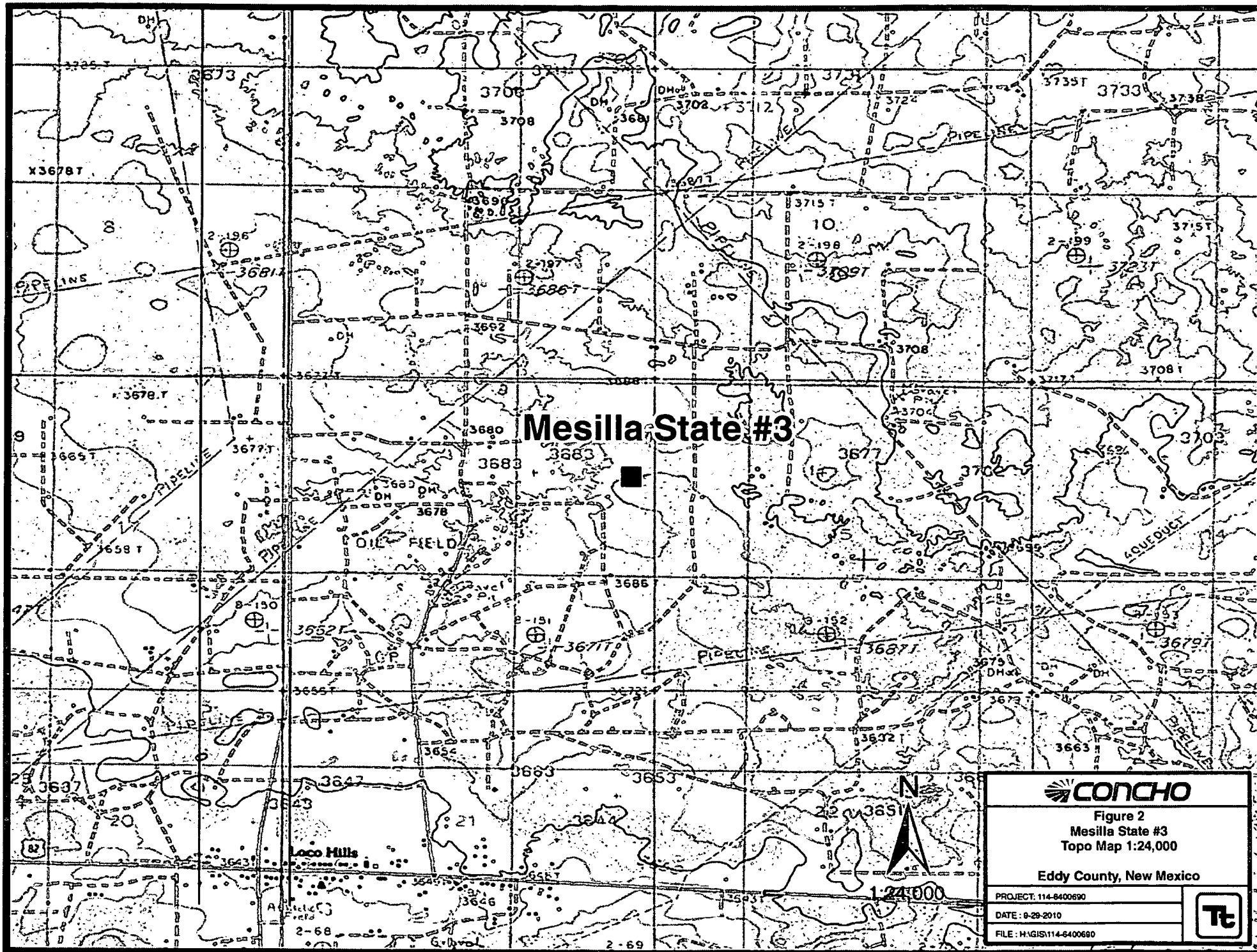
If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,  
TETRA TECH

Kim Dorey  
Staff Geologist

cc: Pat Ellis – COG  
cc: Terry Gregston and Jim Amos – BLM





**CONCHO**

Figure 2  
Mesilla State #3  
Topo Map 1:24,000

Eddy County, New Mexico

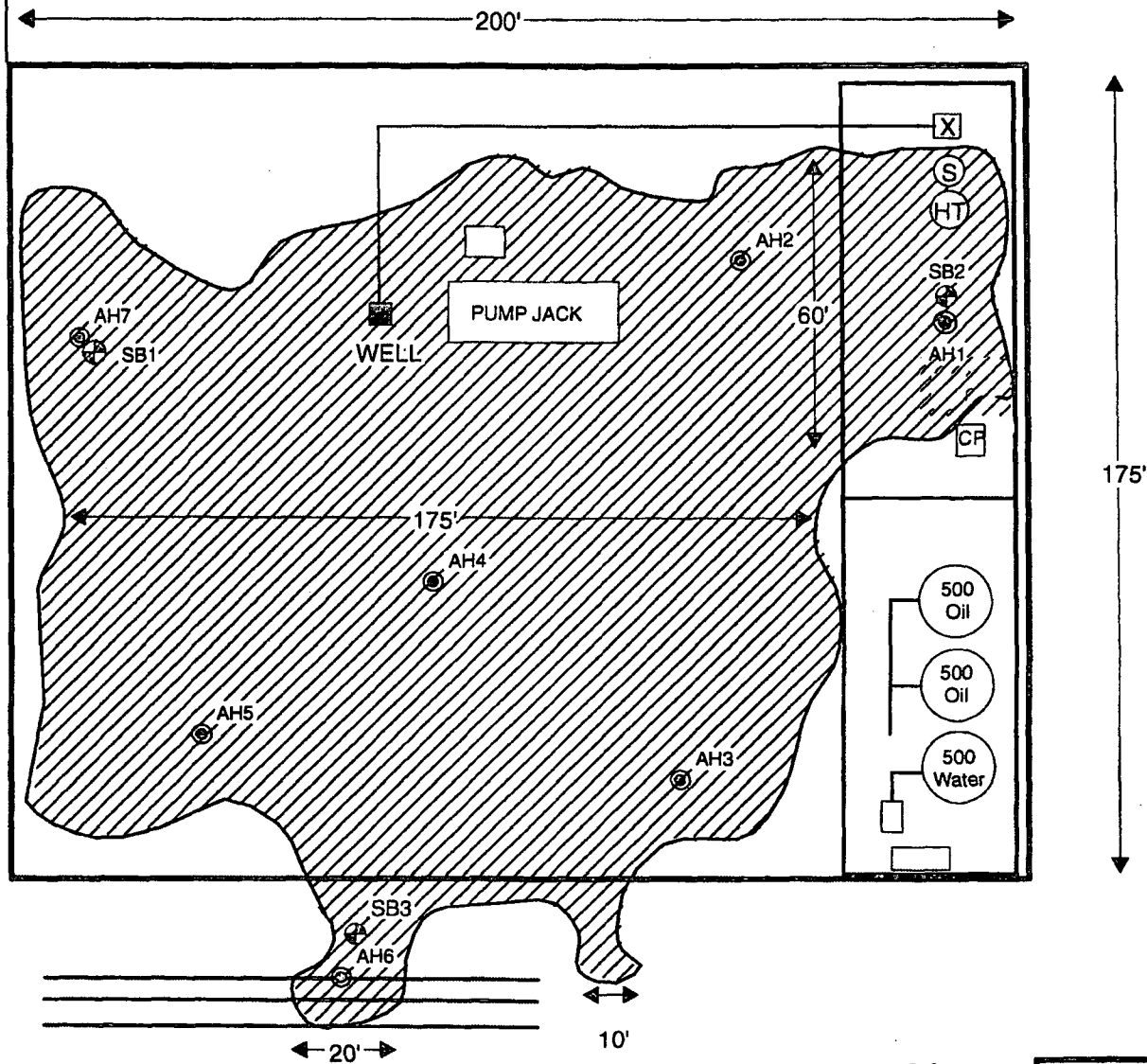
PROJECT: 114-8400690

DATE: 9-29-2010

FILE: HGIS\114-8400690



LEASE ROAD



**Legend**

- /// Spill Assessment Area
- Auger Hole Sample
- ⊕ Soil Bore Sample
- Flowline
- FireWall



NOT TO SCALE

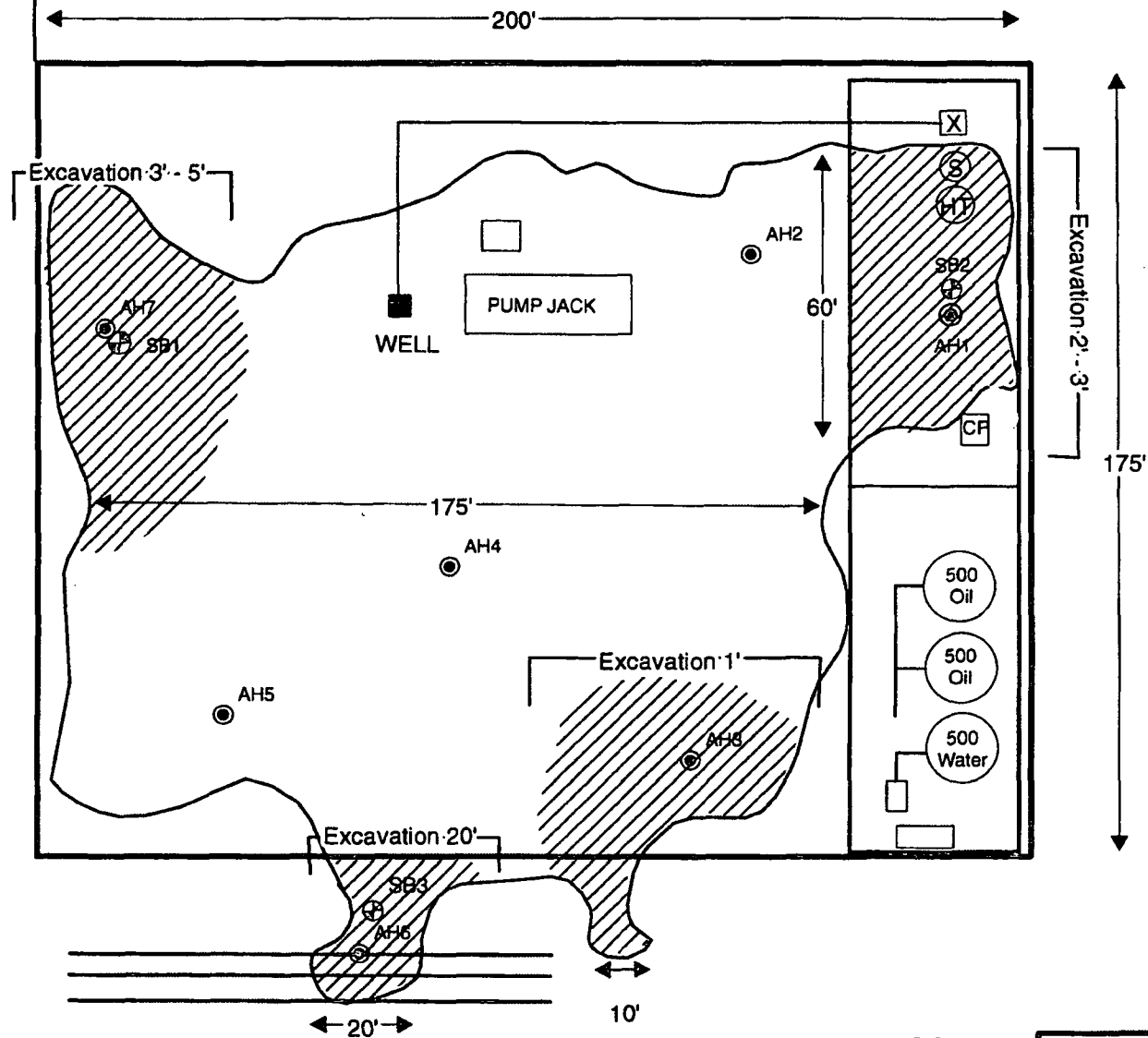


Figure 3  
Mesilla State #3  
Site Assessment Map  
Eddy County, New Mexico

PROJECT: 114-6400690  
DATE: 9-29-2010  
FILE: H:\GIS\114-6400690



LEASE ROAD



- Legend**
- FireWall
  - Auger Hole Sample
  - Soil Bore Sample
  - Flowline



NOT TO SCALE



Figure 4  
Mesilla State #3  
Proposed Excavation Map  
Eddy County, New Mexico

PROJECT: 114-6400690

DATE: 9-29-2010

FILE: H:\GIS\114-6400690



**Table 1**  
**COG Operating LLC.**  
**MESILLA STATE #3 TANK BATTERY**  
**Eddy County, New Mexico**

[illegible]

**Table 1**  
**COG Operating LLC.**  
**MESILLA STATE #3 TANK BATTERY**  
**Eddy County, New Mexico**

[illegible]

**Table 1**  
**COG Operating LLC.**  
**MESILLA STATE #3 TANK BATTERY**  
**Eddy County, New Mexico**

[illegible]

**Table 1**  
**COG Operating LLC.**  
**MESILLA STATE #3 TANK BATTERY**  
**Eddy County, New Mexico**

| Sample ID   | Sample Date | Sample Depth (ft) | Depth (BEB) | Soil Status |         | TPH (mg/kg) |       |       | Benzene (mg/kg) | Toluene (mg/kg) | Ethlybenzene (mg/kg) | Xylene (mg/kg) | Chloride (mg/kg) |
|-------------|-------------|-------------------|-------------|-------------|---------|-------------|-------|-------|-----------------|-----------------|----------------------|----------------|------------------|
|             |             |                   |             | In-Situ     | Removed | GRO         | DRO   | Total |                 |                 |                      |                |                  |
| <b>AH-7</b> | 9/22/2010   | 0-1'              |             | X           |         | <1.00       | <50.0 | <50.0 | -               | -               | -                    | -              | 4,600            |
|             | "           | 1-1.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 651              |
|             | "           | 2-2.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 570              |
|             | "           | 3-3.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 1,730            |
|             | "           | 4-4.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 1,360            |
|             | "           | 5-5.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 1,510            |
| <b>SB-1</b> | 12/1/2010   | 0-1'              |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 4,630            |
|             | "           | 3'                |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 5,340            |
|             | "           | 5'                |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 347              |
|             | "           | 7'                |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | <200             |
|             | "           | 10'               |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | <200             |
|             | "           | 15'               |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 233              |
|             | "           | 20'               |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | <200             |

BEB Below Excavation Bottom  
 (--) Not Analyzed  
☐ Proposed excavation depth

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

0690  
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**

**OPERATOR**

☒ Initial Report ☐ Final Report

|                 |                                            |               |              |
|-----------------|--------------------------------------------|---------------|--------------|
| Name of Company | COG OPERATING LLC                          | Contact       | Pat Ellis    |
| Address         | 550 W. Texas, Suite 100, Midland, TX 79701 | Telephone No. | 432-230-0077 |
| Facility Name   | Mesilla State #3 Tank Battery              | Facility Type | Tank Battery |
| Surface Owner   | State                                      | Mineral Owner |              |
|                 |                                            | Lease No.     | B-2103       |

**LOCATION OF RELEASE**

|                  |               |                 |              |               |                  |               |                |                |
|------------------|---------------|-----------------|--------------|---------------|------------------|---------------|----------------|----------------|
| Unit Letter<br>H | Section<br>16 | Township<br>17S | Range<br>30E | Feet from the | North/South Line | Feet from the | East/West Line | County<br>Eddy |
|------------------|---------------|-----------------|--------------|---------------|------------------|---------------|----------------|----------------|

Latitude 32 50.233 Longitude 103 58.155

**NATURE OF RELEASE**

|                             |                                                                                                           |                                           |                      |                            |                      |
|-----------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------|----------------------------|----------------------|
| Type of Release             | BS & W                                                                                                    | Volume of Release                         | 60bbls               | Volume Recovered           | 50bbls               |
| Source of Release           | PVC water leg                                                                                             | Date and Hour of Occurrence               | 09/03/2010           | Date and Hour of Discovery | 09/03/2010 8:30 a.m. |
| Was Immediate Notice Given? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom?                          | Mike Bratcher—OCD    |                            |                      |
| By Whom?                    | Josh Russo                                                                                                | Date and Hour                             | 09/03/2010 8:30 a.m. |                            |                      |
| Was a Watercourse Reached?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                       | If YES, Volume Impacting the Watercourse. |                      |                            |                      |

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

High wind speed moved the supports bracing the PVC water leg and broke it in half causing the release. The PVC water leg has been replaced with a new steel water leg.

Describe Area Affected and Cleanup Action Taken.\*

Initially we released 60bbls of BS&W from the broken water leg and we were able to recover 50bbls with a vacuum truck. The spill area covered a portion of the well pad measuring approximately 200' x 200' from the battery towards the pumping unit. All standing fluid has been recovered. The well pad has been scraped and the contaminated pad material has been hauled to the appropriate disposal facility. (The closest well location to the release is the Mesilla State #3, this well is located on the same pad as the tank battery, (API#) 30-015-34538). Tetra Tech will sample the spill site are to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

**OIL CONSERVATION DIVISION**

Signature:

Printed Name: Josh Russo

Title: HSE Coordinator

E-mail Address: jrusso@conchoresources.com

Date: 09/15/2010 Phone: 432-212-2399

Approved by District Supervisor:

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

Attach Additional Sheets If Necessary

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**COG -Mesilla State #3 Tank Battery**  
**Eddy County, New Mexico**

| 16 South |    |    | 29 East |    |    |
|----------|----|----|---------|----|----|
| 6        | 5  | 4  | 3       | 2  | 1  |
| 7        | 8  | 9  | 10      | 11 | 12 |
| 18       | 17 | 16 | 15      | 14 | 13 |
| 19       | 20 | 21 | 22      | 23 | 24 |
| 110      | 30 | 29 | 28      | 27 | 26 |
| 31       | 32 | 33 | 34      | 35 | 36 |

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

| 16 South |    |    | 31 East |    |     |
|----------|----|----|---------|----|-----|
| 6        | 5  | 4  | 3       | 2  | 1   |
| 7        | 8  | 9  | 10      | 11 | 12  |
| 18       | 17 | 16 | 15      | 14 | 288 |
| 19       | 20 | 21 | 22      | 23 | 113 |
| 30       | 29 | 28 | 27      | 26 | 25  |
| 31       | 32 | 33 | 34      | 35 | 36  |
| 290      |    |    |         |    |     |

| 17 South |    |     | 29 East |    |     |
|----------|----|-----|---------|----|-----|
| 6        | 5  | 4   | 3       | 2  | 1   |
| 7        | 8  | 9   | 10      | 11 | 12  |
| 18       | 17 | 16  | 15      | 14 | 13  |
| 19       | 20 | 21  | 22      | 23 | 24  |
| 30       | 29 | 210 | 28      | 27 | 26  |
| 31       | 32 | 33  | 34      | 35 | 36  |
|          |    |     |         |    | 153 |

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

| 17 South |    |    | 31 East |    |     |
|----------|----|----|---------|----|-----|
| 6        | 5  | 4  | 3       | 2  | 1   |
| 7        | 8  | 9  | 10      | 11 | 12  |
| 18       | 17 | 16 | 15      | 14 | 13  |
| 19       | 20 | 21 | 22      | 23 | 24  |
| 30       | 29 | 28 | 27      | 26 | 25  |
| 31       | 32 | 33 | 34      | 35 | 36  |
|          |    |    |         |    | 271 |

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

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

| 18 South |    |    | 31 East |    |     |
|----------|----|----|---------|----|-----|
| 6        | 5  | 4  | 3       | 2  | 1   |
| 7        | 8  | 9  | 10      | 11 | 12  |
| 18       | 17 | 16 | 15      | 14 | 400 |
| 19       | 20 | 21 | 22      | 23 | 317 |
| 30       | 29 | 28 | 27      | 26 | 25  |
| 31       | 32 | 33 | 34      | 35 | 36  |
|          |    |    |         |    | 261 |

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data

## Summary Report

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

Report Date: October 13, 2010

Work Order: 10092407



Project Location: Eddy County, NM  
Project Name: COG/Mesilla State #3 TB  
Project Number: 114-6400690

| Sample | Description | Matrix | Date Taken | Time Taken | Date Received |
|--------|-------------|--------|------------|------------|---------------|
| 245696 | AH-1 0-1'   | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245697 | AH-1 1-1.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245698 | AH-2 0-1'   | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245699 | AH-2 1-1.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245700 | AH-2 2-2.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245701 | AH-2 3-3.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245702 | AH-2 3.5-4' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245703 | AH-3 0-1'   | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245704 | AH-3 1-1.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245705 | AH-3 2-2.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245706 | AH-3 3-3.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245707 | AH-3 4-4.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245708 | AH-3 5-5.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245709 | AH-4 0-1'   | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245710 | AH-4 1-1.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245711 | AH-4 2-2.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245712 | AH-4 3-3.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245713 | AH-5 0-1'   | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245714 | AH-5 1-1.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245715 | AH-5 2-2.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245716 | AH-5 3-3.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245717 | AH-5 4-4.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245718 | AH-6 0-1'   | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245719 | AH-6 1-1.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245720 | AH-6 2-2.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245721 | AH-6 3-3.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245722 | AH-6 4-4.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245723 | AH-6 5-5.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245724 | AH-6 6-6.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245725 | AH-7 0-1'   | soil   | 2010-09-22 | 00:00      | 2010-09-23    |

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*This is only a summary. Please, refer to the complete report package for quality control data.*

| Sample | Description | Matrix | Date Taken | Time Taken | Date Received |
|--------|-------------|--------|------------|------------|---------------|
| 245726 | AH-7 1-1.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245727 | AH-7 2-2.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245728 | AH-7 3-3.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245729 | AH-7 4-4.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245730 | AH-7 5-5.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |

| Sample - Field Code | BTEX               |                    |                         |                   | TPH DRO - NEW  | TPH GRO        |
|---------------------|--------------------|--------------------|-------------------------|-------------------|----------------|----------------|
|                     | Benzene<br>(mg/Kg) | Toluene<br>(mg/Kg) | Ethylbenzene<br>(mg/Kg) | Xylene<br>(mg/Kg) | DRO<br>(mg/Kg) | GRO<br>(mg/Kg) |
| 245696 - AH-1 0-1'  | <0.0100            | <0.0100            | <0.0100                 | <0.0100           | 71.6           | 41.3           |
| 245698 - AH-2 0-1'  |                    |                    |                         |                   | <50.0          | <1.00          |
| 245703 - AH-3 0-1'  | <0.0100            | <0.0100            | <0.0100                 | <0.0100           | <50.0          | <1.00          |
| 245709 - AH-4 0-1'  |                    |                    |                         |                   | <50.0          | <1.00          |
| 245713 - AH-5 0-1'  | <0.0100            | <0.0100            | <0.0100                 | <0.0100           | <50.0          | <1.00          |
| 245718 - AH-6 0-1'  | <0.0100            | <0.0100            | <0.0100                 | <0.0100           | 167            | 6.89           |
| 245725 - AH-7 0-1'  |                    |                    |                         |                   | <50.0          | <1.00          |

## Sample: 245696 - AH-1 0-1'

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 3680   | mg/Kg | 4.00 |

## Sample: 245697 - AH-1 1-1.5'

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 3910   | mg/Kg | 4.00 |

## Sample: 245698 - AH-2 0-1'

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 327    | mg/Kg | 4.00 |

## Sample: 245699 - AH-2 1-1.5'

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

## Sample: 245700 - AH-2 2-2.5'

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245701 - AH-2 3-3.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245702 - AH-2 3.5-4'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245703 - AH-3 0-1'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 2420   | mg/Kg | 4.00 |

**Sample: 245704 - AH-3 1-1.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245705 - AH-3 2-2.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245706 - AH-3 3-3.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245707 - AH-3 4-4.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245708 - AH-3 5-5.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245709 - AH-4 0-1'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 206    | mg/Kg | 4.00 |

**Sample: 245710 - AH-4 1-1.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245711 - AH-4 2-2.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245712 - AH-4 3-3.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245713 - AH-5 0-1'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 818    | mg/Kg | 4.00 |

**Sample: 245714 - AH-5 1-1.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245715 - AH-5 2-2.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245716 - AH-5 3-3.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245717 - AH-5 4-4.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245718 - AH-6 0-1'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 7400   | mg/Kg | 4.00 |

**Sample: 245719 - AH-6 1-1.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 1790   | mg/Kg | 4.00 |

**Sample: 245720 - AH-6 2-2.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 1520   | mg/Kg | 4.00 |

**Sample: 245721 - AH-6 3-3.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 245722 - AH-6 4-4.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 5540   | mg/Kg | 4.00 |

**Sample: 245723 - AH-6 5-5.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 7580   | mg/Kg | 4.00 |

**Sample: 245724 - AH-6 6-6.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 9580   | mg/Kg | 4.00 |

**Sample: 245725 - AH-7 0-1'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 4600   | mg/Kg | 4.00 |

**Sample: 245726 - AH-7 1-1.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 651    | mg/Kg | 4.00 |

**Sample: 245727 - AH-7 2-2.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 570    | mg/Kg | 4.00 |

**Sample: 245728 - AH-7 3-3.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 1730   | mg/Kg | 4.00 |

**Sample: 245729 - AH-7 4-4.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 1360   | mg/Kg | 4.00 |

**Sample: 245730 - AH-7 5-5.5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 1510   | mg/Kg | 4.00 |

## Summary Report

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

Report Date: December 10, 2010

Work Order: 10120608



Project Location: Eddy County, NM  
Project Name: COG/Mesilla State #3 TB  
Project Number: 114-6400690

| Sample | Description | Matrix | Date Taken | Time Taken | Date Received |
|--------|-------------|--------|------------|------------|---------------|
| 252360 | SB-1 0-1'   | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252361 | SB-1 3'     | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252362 | SB-1 5'     | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252363 | SB-1 7'     | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252364 | SB-1 10'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252365 | SB-1 15'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252366 | SB-1 20'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252367 | SB-2 3'     | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252368 | SB-2 5'     | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252369 | SB-2 7'     | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252370 | SB-2 10'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252371 | SB-2 15'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252372 | SB-2 20'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252373 | SB-3 0-1'   | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252374 | SB-3 3'     | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252375 | SB-3 5'     | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252376 | SB-3 7'     | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252377 | SB-3 10'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252378 | SB-3 15'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252379 | SB-3 20'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252380 | SB-3 25'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252381 | SB-3 30'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252382 | SB-3 40'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252383 | SB-3 50'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |
| 252384 | SB-3 60'    | soil   | 2010-12-01 | 00:00      | 2010-12-03    |

Sample: 252360 - SB-1 0-1'

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| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 4630   | mg/Kg | 4.00 |

**Sample: 252361 - SB-1 3'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 5340   | mg/Kg | 4.00 |

**Sample: 252362 - SB-1 5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 347    | mg/Kg | 4.00 |

**Sample: 252363 - SB-1 7'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252364 - SB-1 10'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252365 - SB-1 15'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 233    | mg/Kg | 4.00 |

**Sample: 252366 - SB-1 20'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252367 - SB-2 3'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252368 - SB-2 5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252369 - SB-2 7'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 399    | mg/Kg | 4.00 |

**Sample: 252370 - SB-2 10'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252371 - SB-2 15'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252372 - SB-2 20'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252373 - SB-3 0-1'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252374 - SB-3 3'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 252375 - SB-3 5'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 1510   | mg/Kg | 4.00 |

**Sample: 252376 - SB-3 7'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 1420   | mg/Kg | 4.00 |

**Sample: 252377 - SB-3 10'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 3010   | mg/Kg | 4.00 |

**Sample: 252378 - SB-3 15'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 4420   | mg/Kg | 4.00 |

**Sample: 252379 - SB-3 20'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 5970   | mg/Kg | 4.00 |

**Sample: 252380 - SB-3 25'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 6310   | mg/Kg | 4.00 |

**Sample: 252381 - SB-3 30'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 3800   | mg/Kg | 4.00 |

**Sample: 252382 - SB-3 40'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 312    | mg/Kg | 4.00 |

**Sample: 252383 - SB-3 50'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

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**Sample: 252384 - SB-3 60'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

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