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

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

**30-015-25758**

### OPERATOR ☐ Initial Report ☒ Final Report

| | |
|---|---|
| Name of Company  ConocoPhillips Company | Contact  Jesse A. Sosa |
| Address  3300 N. "A" St., Bldg. 6 #247, Midland, TX 79705-5 | Telephone No. 505-391-3125 |
| Facility Name  James A State Well #3 | Facility Type  Water Injection Site |

| | | |
|---|---|---|
| Surface Owner  State | Mineral Owner ConocoPhillips | Lease No. K-3271 |

### LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| K | 2 | 22S | 30E | 1980 | South | 1980 | West | Eddy |

**Latitude** N 32.419351      **Longitude** W103.853893

### NATURE OF RELEASE

| Type of Release  Produced Water | Volume of Release  19 bbls | Volume Recovered  0 bbl |
|---|---|---|
| Source of Release  steel line | Date and Hour of Occurrence 6-07-2007, 2:00 pm | Date and Hour of Discovery 06-07-2007 6:30 am |
| Was Immediate Notice Given?  ☐ Yes ☐ No ☒ Not Required | If YES, To Whom? NA | |
| By Whom?  NA | Date and Hour  NA | |
| Was a Watercourse Reached?  ☐ Yes ☒ No | If YES, Volume Impacting the Watercourse. NA | |

If a Watercourse was Impacted, Describe Fully.*
NA

Describe Cause of Problem and Remedial Action Taken.*
The leak was in a 2" steel 45. The line was shut in for repair. No produced water was recovered.

Describe Area Affected and Cleanup Action Taken.*
See attached request for closure report.

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: Charles Durrett  *Digitally signed by Charles Durrett DN cn=Charles Durrett o=TETRA TECH ou=Midland TX email=Charles Durrett@Tetra tech com, c=US Date 2008 09 12 10 18 36 -05 00* | |
| Printed Name: Charles Durrett | Approved by District Supervisor: TGum by SB |
| Title:  Tetra Tech Authorized Agent of ConocoPhillips | Approval Date: 10-24-08   Expiration Date: N/A |
| E-mail Address: charles.durrett@tetratech.com | Conditions of Approval: N/A   Attached ☐ N/A |
| Date:  9/12/2008     Phone: 432-686-8081 | |

* Attach Additional Sheets If Necessary

# TETRA TECH, INC.

September 12, 2008

Mr. Gerry Guye
New Mexico Oil Conservation Division
1301 W. Grand Ave
Carlsbad, NM 88220

RE:   James A State #3 Findings Report
      Eddy County, New Mexico
      Unit K, Sec. 2, T22S, R30E
      API No. 30-015-25758
      Request for Closure

Dear Mr. Guye:

On behalf of ConocoPhillips, Tetra Tech, Inc. (Tetra Tech) is submitting this report describing actions taken to remediate soils at ConocoPhillips' Cabin Lake Unit, James A State #3 produced water release site (Site; Figure 1). This work is in support of ConocoPhillips' efforts to restore the area that was affected by the release of 19 barrels of produced water at the Site (C141 attached; Figure 2). The Site is located below the Livingston Ridge, approximately 21.8 miles east of Carlsbad in Eddy County, New Mexico (30° 25.153N, 103° 51.197W). The State of New Mexico is the land administrator.

Depth to water in the vicinity of the Site is over 100 feet below ground surface (fbgs). This interpretation is based on groundwater data from the New Mexico Office of State Engineer's database and from the United States Geological Survey's database.[1, 2] The nearest depth to water measurement is from a water well located approximately 1.4 miles to the north-northeast and is at 125 fbgs. Depth to water at a water well located approximately 3.3 miles to the southwest is 262 fbgs. The U.S. Geological Survey, 1984 topographic map, 1:24,000 scale, entitled "LIVINGSTON RIDGE, NEW MEXICO" identifies a ranch house approximately 1.5 miles west of the Site and a potash mine approximately 4.4 miles west of the Site. No information is available on the depth of water at either of these locations. The nearest surface water body is Red Lake, located approximately 3.25 miles northwest of the Site.

## SCOPE OF WORK

Activities were conducted in accordance with NMOCD approved wok plan dated November 20, 2007 at the Site from January 9, 2008 through August 15, 2008. The work included:

1. Soil in the area was excavated to remove the most highly affected chloride soils. This soil was hauled to a State approved disposal facility.

---

[1]  New Mexico Office of State Engineer. W.A.T.E.R.S. Database.

[2]  United States Geological Survey. Groundwater Levels for the Nation Database.

2. Aliquot soil samples were collected in a "W" pattern, composited into one sample for each sidewall and floor of the excavation in the undisturbed area. The composite samples were submitted at a laboratory for chloride confirmation that this constituent has been removed.

3. Soil in the disturbed area were excavated to a depth of 3 feet and hauled to a State approved disposal location. After the excavation sidewalls were excavated to the living vegetation line, aliquot soil samples were collected from the excavation side walls, composited into one sample for each sidewall and submitted at a laboratory for chloride confirmation that this constituent has been removed to concentrations below 1,000 mg/Kg. Clean sand free of rocks were backfilled into the excavation to a depth of 0.5-inches on the sides and one foot in the center to slightly dome the surface and prevent contact of the membrane directly with chloride impacted soils. The slight doming of the sand beneath a "liner" material to promote lateral drainage off of the geo-membrane. This fill material was hand groomed by removing large sticks and smoothing the surface. A one foot deep anchor trench was constructed around the inside perimeter of the excavation and a 40-mil medium density polyethylene geo-membrane was installed over the sand fill. The membrane was cut to fit into the perimeter trench and sand was backfilled around the perimeter to hold the geo-membrane in-place. An additional one foot of sand with no rocks or debris will be backfilled over the membrane. Subsequently, clean cliché/soil was used to backfill the excavation to meet surrounding surface grades which completes the remediation. Four carsonite markers were set at the corners of the remediation area notifying interested parties that a subsurface structure was in-place. The inscription on each marker would read "CAUTION, SUBSURFACE STRUCTURE, Call Before Digging, MCA Unit 575-393-0130."

4. Clean backfill was placed into the undisturbed area excavation with depths ranging up to approximately 9-feet. Photographs were taken to document the excavation at the Site (Photo Log).

**FINDINGS**

Excavations advanced during the investigation at the Site encountered two different soil conditions. Soils in undisturbed location consisted of yellowish-red loamy fine sandy soils. The sub-soil was yellowish-red to dark reddish brown, fine sand about 6 feet thick. The underlying unit was cliché interbedded with sand. Disturbed soil, second condition, included a reclaimed historic production pit. Black plastic fragments and material typical of production pits were encounter in this area.

Confirmation analyses for chlorides are presented in Table 1 and in the Appendix. Chloride concentrations in the sidewalls and floor ranged from 314 to 535 mg/Kg in the undisturbed area. In the disturbed area chloride concentrations in the sidewalls ranged from 54 to 207 mg/Kg

**Table 1**
**ConocoPhillips Cabin Lake Unit**
James A State #3 Well
Excavation Laboratory Analysis

| Location | Chloride (mg/K) |
|---|---|
| Undisturbed Area (1/17/2008) | |
| Floor | 314 |
| East | 322 |
| West | 535 |
| Disturbed Area Walls (9/03/2008) | |
| North | 54.6 |
| South | 207 |
| East | 182 |
| West | 110 |

mg/K = milligrams per kilogram

## CONCLUSIONS

Approximately 3,000 cubic yards of soil were removed from the James A State #3 well produced water release site and hauled to CRI–Midway for disposal. Clean material was returned from CRI-Midway and was used as backfill.

In Tetra Tech's Findings Report, submitted on October 12, 2007 and an information memo dated November 15, 2007, groundwater in the area was described as being greater than 100 feet below ground surface (fbgs). In the November 15, 2007 information memo, both chloride screening and laboratory analyses indicated chloride concentrations in the affected area attenuate with depth. It is not anticipated that chloride in the produced water affected soil left in place will reach groundwater in any appreciable amount to impact the water.

## RECOMMENDATIONS

Based on the work performed at this Site, Tetra Tech recommends no further action. Upon your review and approval of this report, Tetra Tech on behalf of ConocoPhillips, requests closure for 2RP API No. 30-015-25758. If you have any questions or need additional information, please call Mr. Jesse Sosa (ConocoPhillips, 505-391-3126) or me.

Sincerely,

Charles Durrett

*Tetra Tech, Inc.*
Charles Durrett
Project Manager

Cc.   Mr. Jesse Sosa, ConocoPhillips
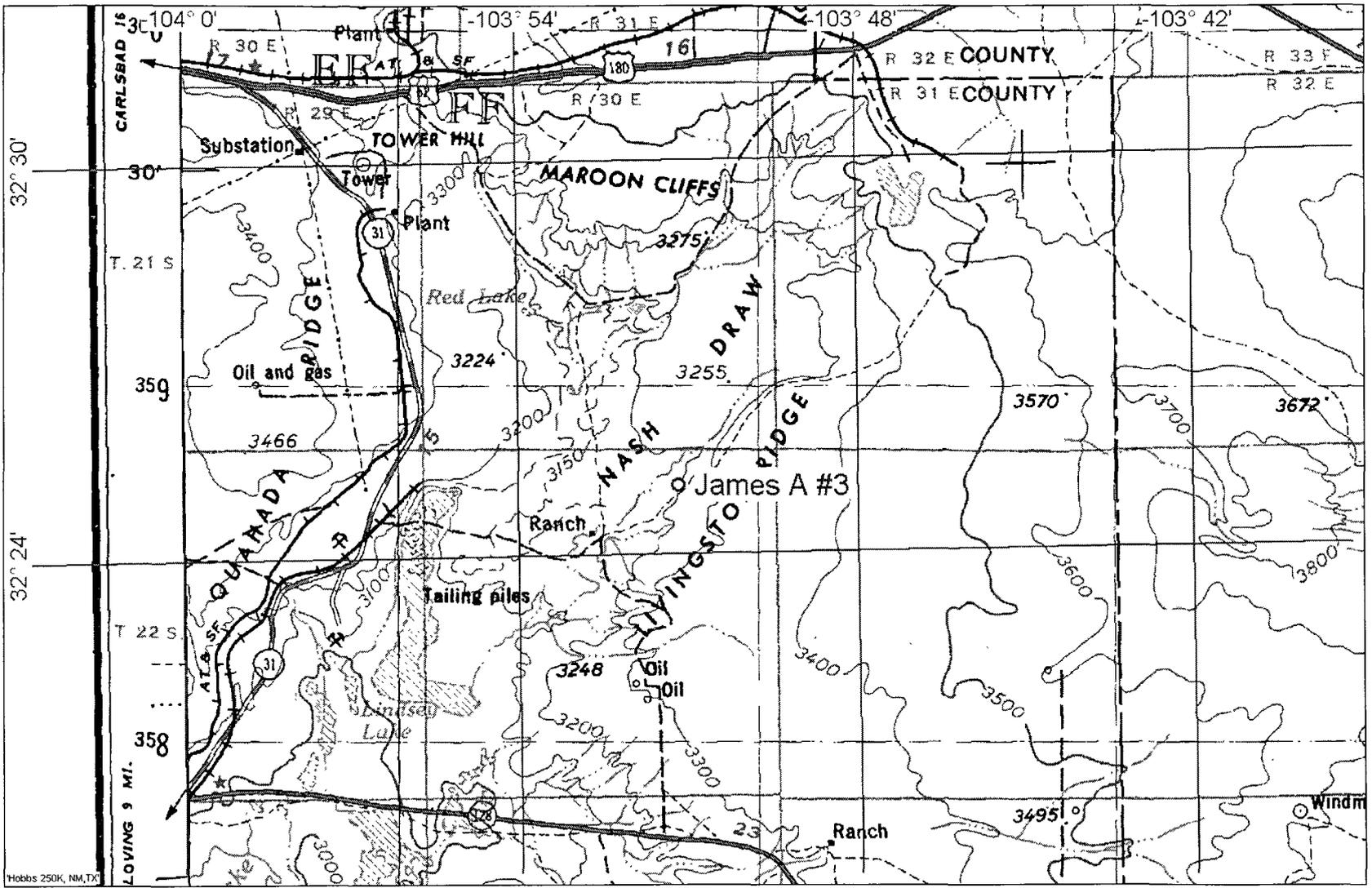
TETRA TECH, INC.

**Source:** USGS. 1954. Hobbs, New Mexico; Texas Topographic Map 250,000 scale

TETRA TECH, INC.

ConocoPhillips | Cabin Lake Unit

**Figure 1.** James A #3 Well Produced Water Release Site

Not to Scale



Undisturbed
Area

Geomembrane
Laid over
Excavation in
Disturbed Area

Overhead Power Line

Well Head
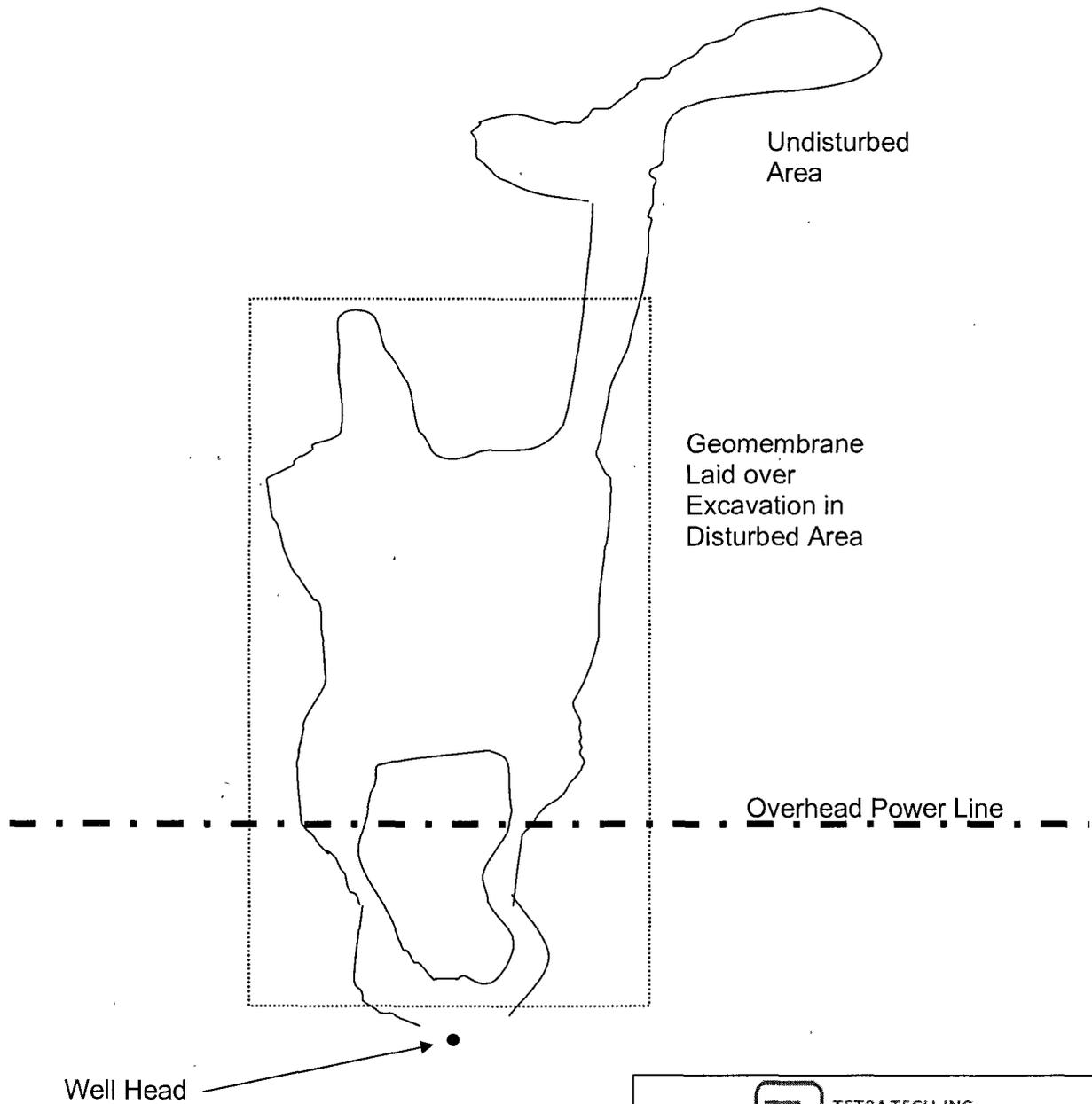
| ![Tetra Tech logo] TETRA TECH, INC. | |
|---|---|
| ConocoPhillips | Cabin Lake Unit |
| **Figure 2.** James A #3 Foot Print of Produced Water Release and Remediation Area | |

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

Form C-141
Revised October 10, 2003

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

30-015-25758

## Release Notification and Corrective Action

### OPERATOR  ☒ Initial Report  ☐ Final Report

| | |
|---|---|
| Name of Company ConocoPhillips Company | Contact Jesse A. Sosa |
| Address 3300 N. "A" St., Bldg. 6 #247 Midland, TX 79705-5 | Telephone No. (505)391-3126 |
| Facility Name James A State well # 3 | Facility Type Water Injection |

| | | |
|---|---|---|
| Surface Owner KENNETH SMITH INC | Mineral Owner ConocoPhillips | Lease No. K-3271 |

### LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| K | 2 | 22 South | 30 East | 1980 | South | 1980 | West | Eddy |

Latitude 30 25.153 N    Longitude 103 51.197 W

### NATURE OF RELEASE

| Type of Release Produced Water | Volume of Release 19 BBLs | Volume Recovered 0 BBLs |
|---|---|---|
| Source of Release 2" Steel line | Date and Hour of Occurrence 6/6/07 6am | Date and Hour of Discovery 6/6/07 6:30 am |

| | |
|---|---|
| Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required | If YES, To Whom? NA |
| By Whom? NA | Date and Hour NA |
| Was a Watercourse Reached? ☐ Yes ☒ No | If YES, Volume Impacting the Watercourse. NA |

If a Watercourse was Impacted, Describe Fully.*
NA

Describe Cause of Problem and Remedial Action Taken.*
The leak was in a 2" steel 45. The line was shut in for repair. No produced water was recovered

Describe Area Affected and Cleanup Action Taken.*
Contaminated area consists of approximately 1925 sq ft. of pasture land. The site will be delinated to determine necessary cleanup action.

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: Jesse A. Sosa | Approved by District Supervisor: |
| Title: HSE Lead | Approval Date: AUG 7 2007    Expiration Date: |
| E-mail Address: Jesse.A.Sosa@conocophillips.com | Conditions of Approval:    Attached ☐ |
| Date: 06/07/2007    Phone: (505)391-3126 | |

* Attach Additional Sheets If Necessary
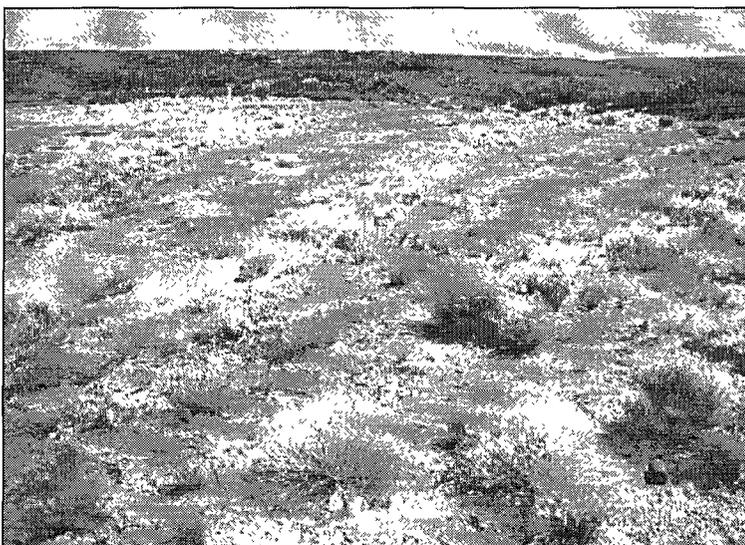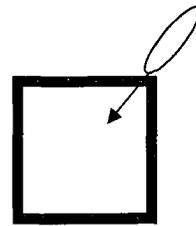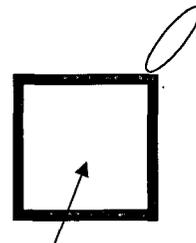
Work Plan on file

**PHOTO LOG**
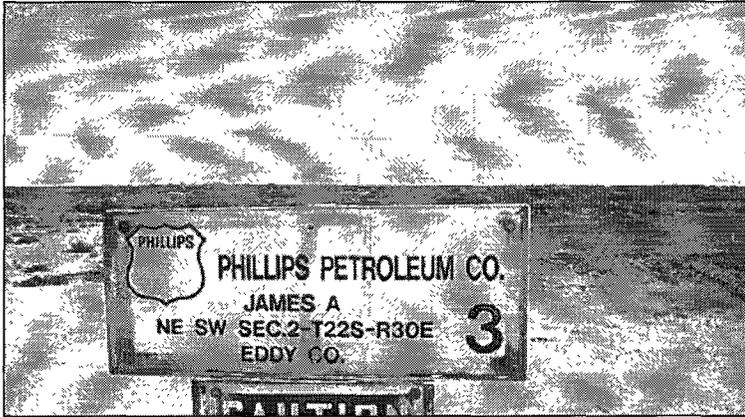
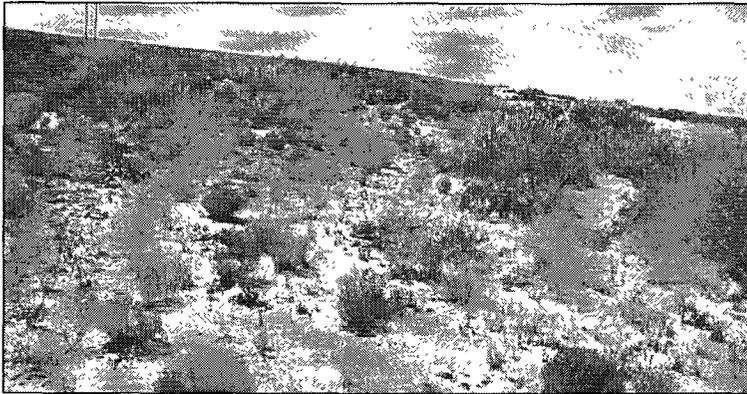**View:** Site Name
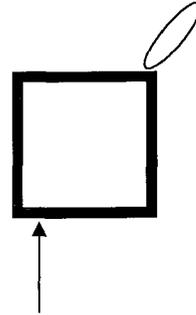
**Before Remediation**
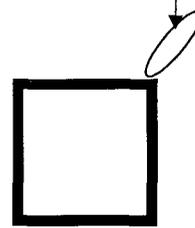
**View:** Southwest



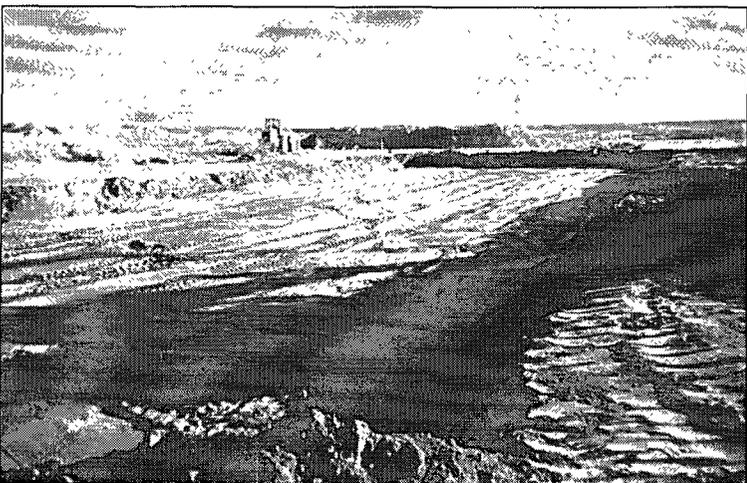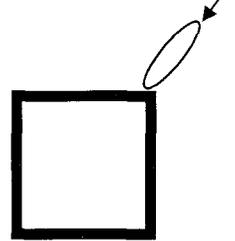**Before Remediation**

**View:** Northeast

**Before Remediation**
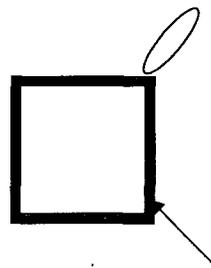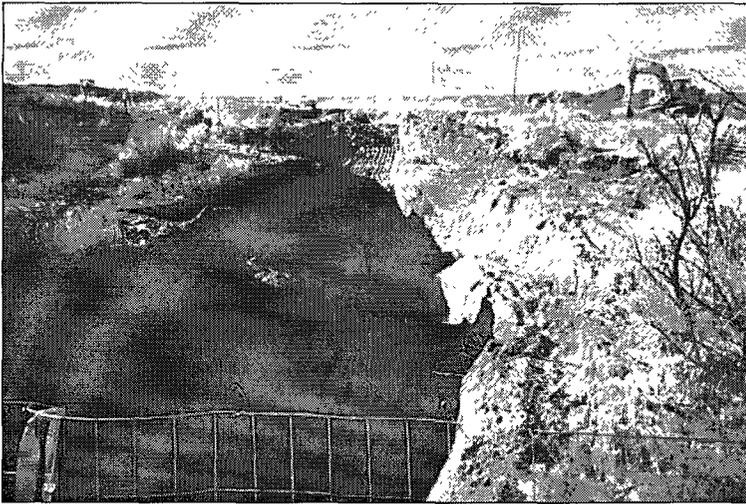
**View:** South



**Before Remediation**

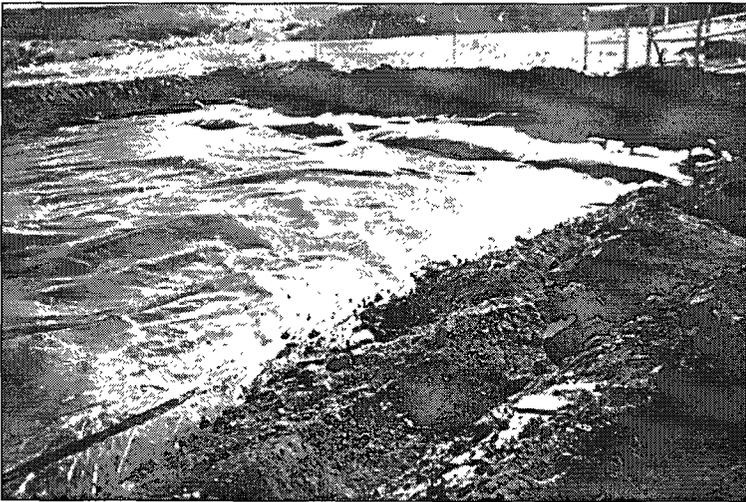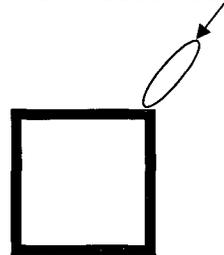**View:** Southwest



**During Remediation**
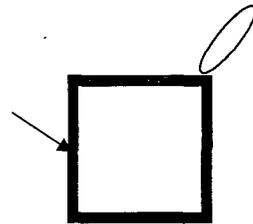Excavation

**View:** Southeast

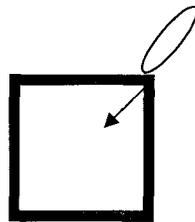**During Remediation**
Excavation

**View:** Southwest



**During Remediation**
Geomembrane

**View:** Southeast



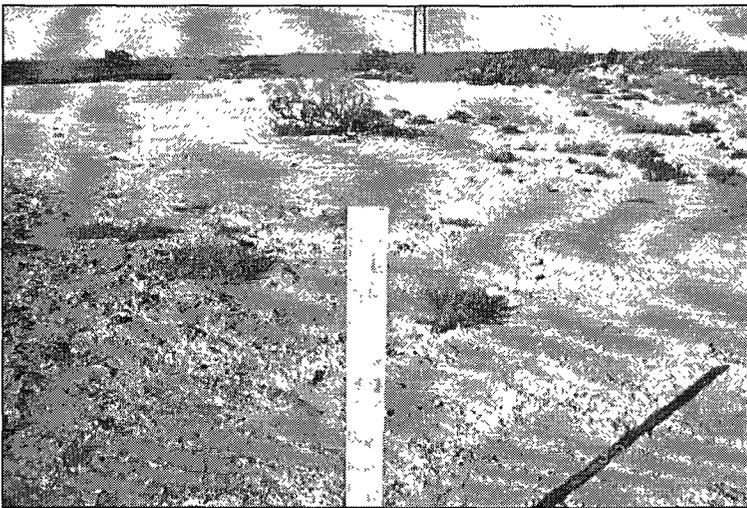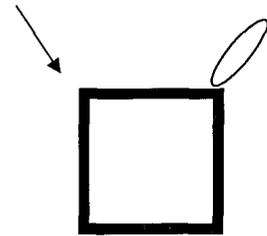**During Remediation**
Backfill

**View:** Southwest

# ConocoPhillips
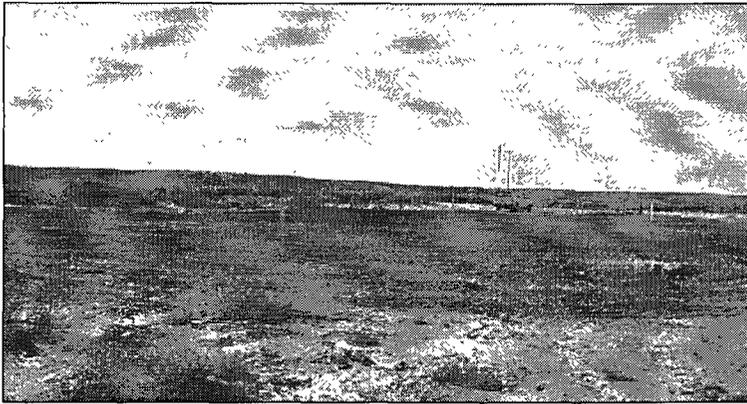
**After Remediation**
Perimeter Signs

**View:** Southeast

# APPENDIX

Laboratory Analyses
Lancaster Laboratory
Xenco Laboratory

ANALYTICAL RESULTS

Prepared for:

ConocoPhillips
1410 N. West Country Rd.
Hobbs NM 88240


505-391-3126

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

## SAMPLE GROUP

The sample group for this submittal is 1073210. Samples arrived at the laboratory on Tuesday, January 15, 2008. The PO# for this group is 4769349 and the release number is SOSA.

| Client Description | Lancaster Labs Number |
| --- | --- |
| NTrench West Side Composite Soil Sample | 5256350 |
| NTrench East Side Composite Soil Sample | 5256351 |
| NTrench Floor Composite Soil Sample | 5256352 |


1 COPY TO      Tetra Tech, Inc.                    Attn: Charles  Durrett

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300

Respectfully Submitted,

Robert Heisey
Senior Specialist

**Lancaster Laboratories** and **Laboratories** logo

**Lancaster Laboratories Sample No. 5256350 SW**     **Group No. 1073210**

**NTrench West Side Composite Soil Sample**
**James A State #3-Carlsbad, NM**

Collected:01/11/2008 13:00        by HLB                Account Number: 12402

Submitted: 01/15/2008 09:15                             ConocoPhillips
Reported: 01/17/2008 at 14:13                           1410 N. West Country Rd.
Discard: 02/17/2008                                     Hobbs NM 88240

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---------|---------------|------------|------------|------------------------------|----------------------------|-------|-----------------|
| 02111 | Moisture | n.a. | 5.2 | 1.0 | 1.0 | % | 1 |
|  | "Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius. | | | | | | |
| 07333 | Chloride by IC (solid) | 16887-00-6 | 535. | 63.3 | 84.4 | mg/kg | 20 |

All QC is compliant unless otherwise noted.  Please refer to the Quality
Control Summary for overall QC performance data and associated samples.

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
| 02111 | Moisture | SM20 2540 G | 1 | 01/16/2008 07:16 | Nancy J Shoop | 1 |
| 07333 | Chloride by IC (solid) | EPA 300.0 | 1 | 01/16/2008 15:45 | Ashley M Heckman | 20 |
| 01352 | Deionized Water Extraction | EPA 300.0 | 1 | 01/16/2008 10:25 | Nancy J Shoop | 1 |

*=This limit was used in the evaluation of the final result

# Lancaster Laboratories

**Analysis Report**

2425 New Holland Pike, PO Box 12425, Lancaster PA 17605-2425 • 717-656-2300 Fax. 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. 5256351 SW    Group No. 1073210

NTrench East Side Composite Soil Sample
James A State #3-Carlsbad, NM

Collected 01/11/2008 14·00    by HLB    Account Number: 12402

Submitted. 01/15/2008 09:15
Reported· 01/17/2008 at 14:13
Discard. 02/17/2008

ConocoPhillips
1410 N. West Country Rd
Hobbs NM 88240

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02111 | Moisture | n a | 4 6 | 1 0 | 1 0 | % | 1 |

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07333 | Chloride by IC (solid) | 16887-00-6 | 322 | 31 4 | 41 9 | mg/kg | 10 |

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 02111 | Moisture | SM20 2540 G | 1 | 01/16/2008 07.22 | Nancy J Shoop | 1 |
| 07333 | Chloride by IC (solid) | EPA 300.0 | 1 | 01/16/2008 16 31 | Ashley M Heckman | 10 |
| 01352 | Deionized Water Extraction | EPA 300 0 | 1 | 01/16/2008 10 25 | Nancy J Shoop | 1 |

*=This limit was used in the evaluation of the final result

# Lancaster Laboratories

## Analysis Report

Page 1 of 1

**Lancaster Laboratories Sample No. 5256352 SW      Group No. 1073210**

**NTrench Floor Composite Soil Sample**
**James A State #3-Carlsbad, NM**

Collected 01/11/2008 15:00        by HLB

Submitted· 01/15/2008 09.15
Reported. 01/17/2008 at 14:13
Discard. 02/17/2008

Account Number. 12402

ConocoPhillips
1410 N. West Country Rd
Hobbs NM 88240

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---------|---------------|------------|------------|-------------------|---------------------|-------|-----------------|
| 02111 | Moisture | n.a | 18 9 | 1 0 | 1 0 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius | | | | | | |
| 07333 | Chloride by IC (solid) | 16887-00-6 | 314 | 37 0 | 49 3 | mg/kg | 10 |

All QC is compliant unless otherwise noted  Please refer to the Quality
Control Summary for overall QC performance data and associated samples

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
| 02111 | Moisture | SM20 2540 G | 1 | 01/16/2008 07 37 | Nancy J Shoop | 1 |
| 07333 | Chloride by IC (solid) | EPA 300 0 | 1 | 01/16/2008 16 47 | Ashley M Heckman | 10 |
| 01352 | Deionized Water Extraction | EPA 300 0 | 1 | 01/16/2008 10 25 | Nancy J Shoop | 1 |

*=This limit was used in the evaluation of the final result

# Lancaster Laboratories

## Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster PA 17605-2425 •717-656-2300 Fax 717-656-2681• www.lancasterlabs.com

## Quality Control Summary

Client Name· ConocoPhillips
Reported· 01/17/08 at 02·13 PM

Group Number: 1073210

Matrix QC may not be reported if site-specific QC samples were not
submitted   In these situations, to demonstrate precision and accuracy at
a batch level, a LCS/LCSD was performed, unless otherwise specified in the
method

### Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL** | Blank LOQ | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number  08016016201A | Sample number(s)  5256350-5256352 | | | | | | | | |
| Chloride by IC (solid) | N D | 3 0 | 4 0 | mg/kg | 103 | | 90-110 | | |
| Batch number. 08016912201A | Sample number(s)  5256350-5256352 | | | | | | | | |
| Moisture | | | | | 99 | | 98-103 | | |

### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number  08016016201A | Sample number(s)  5256350-5256352 UNSPK  5256350 BKG  5256350 | | | | | | | | |
| Chloride by IC (solid) | 174 (2) | | 90-110 | | | 508 | 535 | 5 | 11 |
| Batch number  08016912201A | Sample number(s)  5256350-5256352 BKG. 5256350 | | | | | | | | |
| Moisture | | | | | | 5 2 | 5.2 | 0 | 5 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

**Lancaster Laboratories**

For Lancaster Labs Use ONLY  Acct. #: _11288_  Group # _1073210_  Sample#: _5256_ SCR#: _350-52_

009039 ConocoPhillips Business Unit

Site #: _James A State Well 3_ AOC#: _4769349_

Site City: _Carlsbad_  State: _NM_

Enfos PO# _ConocoPhillips 1410 N County Rd Hobbs NM 88240_

ConocoPhillips PM: _Jesse Soso 505-391-3126_

Samplers Name: _H L Brooks_

| Sample Identification | Date Collected | Time Collected | Grab | Composite | Soil | Water | Chloride (300) | Remarks |
|---|---|---|---|---|---|---|---|---|
| N trench West Side | 1-11-08 | 1300 | X | X | | | X | |
| N trench East Side | 1-11-08 | 1400 | X | X | | | X | |
| N trench floor | 1-11-08 | 1500 | X | X | | | X | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Matrix**: □ Potable □ NPDES □ Oil □ Air

**Analyses Requested** List total number of containers in the box under each analysis.

**Preservation Codes**

**Preservative Codes**
H = HCl  T = Thiosulfate
N = HNO₃  B = NaOH
S = H₂SO₄  O = Other

**Consultant Information:**

Office City: _Midland_  State: _TX_

Project Manager: _Charles Durrett_

Phone Number: _432-686-8081_  Fax: _____

Email: _charles.durrett@tctrgtech.com_

Electronic Data Deliverables (Circle One) (Yes) No  Format _pdf_

**Reporting Requirements (Circle One)**

Standard Reports/QC Summary  Full Validation (LLI Type I)

NJ Regulatory  NJ Reduced  NY ASP-A  NY ASP-B  Other _NM_

**Turnaround Time Requested in Business Days (TAT) (Circle One):**

STD.  5 day  48 hour  (24) hour  Other_____

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| _H L Brooks_ | 1-14-08 | 1300 | | | |
| Relinquished by: | Date | Time | Received by: | Date | Time |
| _signature_ | 1/14/08 | 1400 | | | |
| Relinquished by: | Date | Time | Received by: | Date | Time |
| | | | _Deborah a Neglund_ | 1/15/08 | 0915 |

Relinquished by Commercial Carrier:

UPS _____ FedEx _X_ Other_____

Temperature Upon Receipt _3.3_ C°

4531.02

# Lancaster Laboratories
## Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **N.D.** | none detected | **BMQL** | Below Minimum Quantitation Level |
| **TNTC** | Too Numerous To Count | **MPN** | Most Probable Number |
| **IU** | International Units | **CP Units** | cobalt-chloroplatinate units |
| **umhos/cm** | micromhos/cm | **NTU** | nephelometric turbidity units |
| **C** | degrees Celsius | **F** | degrees Fahrenheit |
| **Cal** | (diet) calories | **lb.** | pound(s) |
| **meq** | milliequivalents | **kg** | kilogram(s) |
| **g** | gram(s) | **mg** | milligram(s) |
| **ug** | microgram(s) | **l** | liter(s) |
| **ml** | milliliter(s) | **ul** | microliter(s) |
| **m3** | cubic meter(s) | **fib >5 um/ml** | fibers greater than 5 microns in length per ml |

**<** less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

**>** greater than

**ppm** parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

**ppb** parts per billion

**Dry weight basis** Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

*U.S. EPA data qualifiers:*

### Organic Qualifiers

| | |
|---|---|
| **A** | TIC is a possible aldol-condensation product |
| **B** | Analyte was also detected in the blank |
| **C** | Pesticide result confirmed by GC/MS |
| **D** | Compound quatitated on a diluted sample |
| **E** | Concentration exceeds the calibration range of the instrument |
| **J** | Estimated value |
| **N** | Presumptive evidence of a compound (TICs only) |
| **P** | Concentration difference between primary and confirmation columns >25% |
| **U** | Compound was not detected |
| **X,Y,Z** | Defined in case narrative |

### Inorganic Qualifiers

| | |
|---|---|
| **B** | Value is <CRDL, but ≥IDL |
| **E** | Estimated due to interference |
| **M** | Duplicate injection precision not met |
| **N** | Spike amount not within control limits |
| **S** | Method of standard additions (MSA) used for calculation |
| **U** | Compound was not detected |
| **W** | Post digestion spike out of control limits |
| **\*** | Duplicate analysis not within control limits |
| **+** | Correlation coefficient for MSA <0.995 |

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

# Analytical Report  311673

## for

## Tetra Tech- Midland


**Project Manager: Charles Durrett**

James A

8640015

05-SEP-08



**XENCO Laboratories**



ACCREDITED IN ACCORDANCE WITH **nelac**

**E84880**

**12600 West I-20 East Odessa, Texas 79765**


Texas certification numbers:
Houston, TX  T104704215 - Odessa/Midland, TX  T104704215-08-TX

Florida certification numbers:
Houston, TX ·E871002  -   Miami, FL  E86678   -   Tampa, FL   E86675
Norcross(Atlanta), GA   E87429

South Carolina certification numbers:
Norcross(Atlanta), GA   98015

North Carolina certification numbers:
Norcross(Atlanta), GA   483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

05-SEP-08

Project Manager: **Charles Durrett**
**Tetra Tech- Midland**
1703 W. Industrial Avenue
Midland, TX 79703

Reference: XENCO Report No: **311673**
    **James A**
    Project Address:

**Charles Durrett**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 311673. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 311673 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**
Odessa Laboratory Manager

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*
*Certified and approved by numerous States and Agencies.*
*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America

## Tetra Tech- Midland, Midland, TX

James A

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|-----------|--------|----------------|--------------|---------------|
| W Wall | S | Sep-03-08 10:30 | | 311673-001 |
| E Wall | S | Sep-03-08 11:00 | | 311673-002 |
| N Wall | S | Sep-03-08 12:00 | | 311673-003 |
| S Wall | ·S | Sep-03-08 13:00 | | 311673-004 |

# Certificate of Analysis Summary  311673
## Tetra Tech- Midland,  Midland, TX
### Project Name:  James A

**Project Id:** 8640015

**Contact:** Charles Durrett

**Project Location:**

**Date Received in Lab:**  Wed Sep-03-08 04 30 pm

**Report Date:**  05-SEP-08

**Project Manager:**  Brent Barron, II

| Analysis Requested | | 311673-001 | 311673-002 | 311673-003 | 311673-004 | | |
|---|---|---|---|---|---|---|---|
| | Lab Id: | 311673-001 | 311673-002 | 311673-003 | 311673-004 | | |
| | Field Id: | W Wall | E Wall | N Wall | S Wall | | |
| | Depth: | | | | | | |
| | Matrix: | SOIL | SOIL | SOIL | SOIL | | |
| | Sampled: | Sep-03-08 10 30 | Sep-03-08 11 00 | Sep-03-08 12 00 | Sep-03-08 13 00 | | |
| **Anions by EPA 300/300.1** | Extracted: | | | | | | |
| | Analyzed: | Sep-04-08 15 21 | Sep-04-08 15 21 | Sep-04-08 15 21 | Sep-04-08 15 21 | | |
| | Units/RL: | mg/kg        RL | mg/kg        RL | mg/kg        RL | mg/kg        RL | | |
| Chloride | | 110        10 0 | 182        10 0 | 54 6        5 00 | 207        10 0 | | |

Brent Barron
Odessa Laboratory Director

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the MQL(PQL) and above the SQL(MDL).

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**\*** Outside XENCO'S scope of NELAC Accreditation

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America

| | Phone | Fax |
|---|---|---|
| 11381 Meadowglen Lane Suite L Houston, Tx 77082-2647 | (281) 589-0692 | (281) 589-0695 |
| 9701 Harry Hines Blvd , Dallas, TX 75220 | (214) 902 0300 | (214) 351-9139 |
| 5332 Blackberry Drive, Suite 104, San Antonio, TX 78238 | (210) 509-3334 | (210) 509-3335 |
| 2505 N. Falkenburg Rd., Tampa, FL 33619 | (813) 620-2000 | (813) 620-2033 |
| 5757 NW 158th St, Miami Lakes, FL 33014 | (305) 823-8500 | (305) 823-8555 |
| 6017 Financial Dr., Norcross, GA 30071 | (770) 449-8800 | (770) 449-5477 |

**Project Name: James A**

**Work Order #:** 311673       **Project ID:**      8640015

**Lab Batch #:** 733205      **Sample:** 733205-1-BKS      **Matrix:** Solid

**Date Analyzed:** 09/04/2008      **Date Prepared:** 09/04/2008      **Analyst:** LATCOR

**Reporting Units:** mg/kg      **Batch #:** 1

| Anions by EPA 300/300.1<br><br>Analytes | Blank Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|---|
| Chloride | ND | 10 0 | 10.8 | 108 | 75-125 | |

BLANK /BLANK SPIKE RECOVERY STUDY

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes

**Project Name: James A**

**Work Order #:** 311673

**Lab Batch #:** 733205

**Date Analyzed:** 09/04/2008

**QC- Sample ID:** 311736-001 S

**Reporting Units:** mg/kg

**Project ID:** 8640015

**Date Prepared:** 09/04/2008

**Batch #:** 1

**Analyst:** LATCOR

**Matrix:** Soil

| Inorganic Anions by EPA 300 <br><br> Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | %R [D] | Control Limits %R | Flag |
|---|---|---|---|---|---|---|
| MATRIX / MATRIX SPIKE RECOVERY STUDY | | | | | | |
| Chloride | ND | 100 | 90.8 | 91 | 75-125 | |

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

**XENCO**
**Laboratories**

**Project Name: James A**

**Work Order #:** 311673

| | |
|---|---|
| **Lab Batch #:** 733205 | **Project ID:** 8640015 |
| **Date Analyzed:** 09/04/2008    **Date Prepared:** 09/04/2008 | **Analyst:** LATCOR |
| **QC- Sample ID:** 311736-001 D    **Batch #:** l | **Matrix:** Soil |
| **Reporting Units:** mg/kg | |

| Anions by EPA 300/300.1 <br><br> Analyte | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
|---|---|---|---|---|---|
| **SAMPLE / SAMPLE DUPLICATE RECOVERY** | | | | | |
| Chloride | ND | ND | NC | 20 | |

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

# Analysis Request of Chain of Custody Record

## TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4569 • Fax (432) 682-3946

**ANALYSIS REQUEST**
(Circle or Specify Method No)

CLIENT NAME: TCP brines

PROJECT NO.: 24905 15

PROJECT NAME: 

SITE MANAGER: Charles Dwyer

| LAB ID NUMBER | DATE | TIME | MATRIX | COMP | GRAB | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | FILTERED (Y/N) | Chloride |
|---|---|---|---|---|---|---|---|---|---|
| 01 | 5/3/08 | 1630 | S | X |  | 3 well 31673 | 1 | Y | X |
| 02 |  | 1100 | S | X |  | 6 well | 1 | N | X |
| 03 |  | 1200 | S | X |  | 2 well | 1 | N | X |
| 04 |  | 1300 | S | X |  | 5 well | 1 | N | X |

**PRESERVATIVE METHOD**: ICE (X for row 01)

SAMPLED BY: (Print & Initial) Charles Dwyer

RELINQUISHED BY (Signature) ___ Date/Time 5/3/08

RECEIVED BY (Signature) ___ Date/Time

RELINQUISHED BY (Signature) ___ Date/Time

RECEIVED BY (Signature) ___ Date/Time

RELINQUISHED BY (Signature) ___ Date/Time

RECEIVED BY (Signature) Andrea Zora Date 9/3/08 Time 430

RECEIVING LABORATORY: General Lab / Xenco

ADDRESS ___ STATE ___ ZIP ___

CITY ___ PHONE ___

CONTACT ___

SAMPLE CONDITION WHEN RECEIVED

REMARKS

SAMPLE SHIPPED BY (Circle): FEDEX   BUS   HAND DELIVERED   UPS

AIRBILL # ___   OTHER ___

TETRA TECH CONTACT PERSON: Charles Dwyer
charles.dwyer@tetratech.com

RUSH Charges Approved: Yes / No
Results by: ASAP

Date: 1/21/08

Please fill out all copies - Laboratory returns Yellow copy - Return Original copy to Tetra Tech - Project Manager returns Pink copy - Accounting receives Gold copy

# Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client     Tetra Tech

Date/ Time     9 3 08   16 30

Lab ID #     311673

Initials     CiL

## Sample Receipt Checklist

| | | | | | Client Initials |
|---|---|---|---|---|---|
| #1 | Temperature of container/ cooler? | Yes | No | ⌐ᵕ⌐ ° C | |
| #2 | Shipping container in good condition? | Yes | No | | |
| #3 | Custody Seals intact on shipping container/ cooler? | Yes | No | Not Present | |
| #4 | Custody Seals intact on sample bottles/ container? | Yes | No | Not Present | |
| #5 | Chain of Custody present? | Yes | No | | |
| #6 | Sample instructions complete of Chain of Custody? | Yes | No | | |
| #7 | Chain of Custody signed when relinquished/ received? | Yes | No | | |
| #8 | Chain of Custody agrees with sample label(s)? | Yes | No | ID written on Cont / Lid | |
| #9 | Container label(s) legible and intact? | Yes | No | Not Applicable | |
| #10 | Sample matrix/ properties agree with Chain of Custody? | Yes | No | | |
| #11 | Containers supplied by ELOT? | Yes | No | | |
| #12 | Samples in proper container/ bottle? | Yes | No | See Below | |
| #13 | Samples properly preserved? | Yes | No | See Below | |
| #14 | Sample bottles intact? | Yes | No | | |
| #15 | Preservations documented on Chain of Custody? | Yes | No | | |
| #16 | Containers documented on Chain of Custody? | Yes | No | | |
| #17 | Sufficient sample amount for indicated test(s)? | Yes | No | See Below | |
| #18 | All samples received within sufficient hold time? | Yes | No | See Below | |
| #19 | Subcontract of sample(s)? | Yes | No | Not Applicable | |
| #20 | VOC samples have zero headspace? | Yes | No | Not Applicable | |

## Variance Documentation

Contact _____ Contacted by _____ Date/ Time _____

Regarding _____

Corrective Action Taken.

_____

_____

Check all that Apply
☐ See attached e-mail/ fax
☐ Client understands and would like to proceed with analysis
☐ Cooling process had begun shortly after sampling event