

**3R -** 186

# **REPORTS**

**DATE:**

2002

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Hammond #41A Closure Report

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**EPFS GROUNDWATER PITS  
GROUNDWATER CLOSURE REPORT**

Hammond #41A  
Meter Code: 89894

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**SITE DETAILS**

Legals      Twn: 27N      Rng: 08W      Sec: 25      UNIT: O  
NMOCD Haz Ranking: 40      Land Type: Federal      Operator: R & G Drilling Company

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**PREVIOUS ACTIVITIES**

Site Assessment: Jun-94    Excavation: Jul-94    Soil Boring: July-95    Monitor Well: May-97  
Geoprobe: Nov-96    Additional MWs: Sep-99    Downgradient MW's: Sep-99    Replace MW: NA  
PSH Removal Initiated: NA    ORC Nutrient Injection: July-98    Re-Excavation: May-97  
Quarterly Initiated: Jun-97    Annual Initiated Sep-99    Quarterly Resumed: NA

Following the initial site assessment in July of 1994 the existing pit was excavated to a depth of 12 feet beneath ground surface (bgs). Approximately 250 cubic yards of source material were removed and disposed of at the Envirotech land farm. The headspace soil reading from the bottom of the excavation was 381 ppm and no groundwater was encountered. Soil analytical for the sample was as follows: Benzene <0.25 mg/kg, Toluene 9.2 mg/kg, Ethyl Benzene 3.8 mg/kg, Total Xylenes 50 mg/kg, Total BTEX 63 mg/kg, and TPH (418.1) 3150 mg/kg (See Appendix A).

A phase II soil boring was drilled in the center of the pit to a depth of 18.3 feet bgs no groundwater was encountered and a soil sample was collected, results were as follows: Benzene 0.80 mg/kg, Toluene 3.1 mg/kg, Ethyl Benzene 0.48 mg/kg, Total Xylenes 5.0 mg/kg, Total BTEX 9.38 mg/kg, and TPH 62.5 mg/kg (See Appendix B). Geoprobe groundwater data was collected in various locations during November of 1996 (See Appendix C and Figure 2, locating the approximate geoprobe locations).

A phase III soil re-excavation was done to a depth of 19 feet bgs with dimensions of 55 feet by 50 feet. Approximately 1140 cubic yards of soil were removed and taken to the Envirotech land farm. Groundwater was encountered at 19 feet bgs. Soil samples were collected and the results were as follows: Benzene <0.5 mg/kg, Toluene <0.5 mg/kg, Ethyl Benzene <0.5 mg/kg, Total Xylenes <1.5 mg/kg, Total BTEX <3 mg/kg, and TPH <10 mg/kg (See Appendix E). Monitor well 1 was drilled and set on May 5, 1997 to a depth of 26 feet bgs (See Appendix E). Nutrient injection was done on July 9, 1998 and consisted of three boreholes with each containing 60 pounds of ORC injected as a slurry, see Appendix F figures.

Monitor wells 2 and 3 were drilled and set on September 10, 1999. MW-2 was set a depth of 25 feet bgs and MW-3 was also set a depth of 25 feet bgs. Initial analytical results indicated non detect for BTEX in both wells. Historical groundwater data is included as Table 1 along with a trend graph for MW-1 (Figure 5) showing historical and present BTEX concentrations. Since, previous analytical data were submitted in prior annual reports, only the analytical data and purge forms for the first, second, and third quarters of 2002 are appended. Included are appendices A (phase I assessment), B (phase II assessment), C (geoprobe data), D (phase III assessment), E (nutrient injection), and F (monitor well installation, well logs, well completions and supporting analytical).

## **EPFS GROUNDWATER PITS GROUNDWATER CLOSURE REPORT**

Hammond #41A  
Meter Code: 89894

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### **2002 ACTIVITY**

First quarter samples for MW-1 were taken on February 25, 2002, Benzene was 3.9 ppb, Toluene was <0.5 ppb, Ethyl Benzene was <0.5 ppb, and Total Xylenes was <1 ppb (See Appendix G analytical data).

Second quarter samples for MW-1 were taken on May 21, 2002, Benzene was 4.4 ppb, Toluene was <0.5 ppb, Ethyl Benzene was <0.5 ppb, and Total Xylenes was 1 ppb (See Appendix G analytical data).

Third quarter samples for MW-1 were taken on September 5, 2002, this represents the fourth consecutive quarter below 10 ppb for benzene, Benzene was 2.7 ppb, Toluene was 0.5 ppb, Ethyl Benzene was 2.2 ppb, and Total Xylenes was 1.4 ppb (See Appendix G analytical data).

Closure samples for MW-2 were taken on October 8, 2002, Benzene was <0.5 ppb, Toluene was <0.5 ppb, Ethyl Benzene was <0.5 ppb, and Total Xylenes was <0.5 ppb (See Appendix G analytical data).

Closure samples for MW-3 were taken on October 8, 2002, Benzene was <0.5 ppb, Toluene was <0.5 ppb, Ethyl Benzene was <0.5 ppb, and Total Xylenes was 1.1 ppb (See Appendix G analytical data).

### **SUMMARY TABLES AND GRAPHS**

Table 1 is attached and shows historic to present BTEX analytical data for MW-1, 2, and 3. Figure 5, which also shows historic to present BTEX data graphically over time for MW-1.

### **SITE MAP**

A site map (Figure 1) is included with Figure 2 and 3 showing previous geoprobe and well point locations. Also Figure 5 indicates BTEX for the past four quarters.

### **GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS**

Analytical Data, Completion Diagrams and Geologic Logs are appended for MW-1 as follows: appendices A (phase I assessment), B (phase II assessment), C (geoprobe data), D (well point data), E (excavation), F (nutrient injection) and G supporting analytical).

### **DISPOSITION OF GENERATED WASTES**

No wastes were generated at this site for 2002.

### **ISOCONCENTRATION MAPS**

An isoconcentration map was not generated for this site.

**EPFS GROUNDWATER PITS  
GROUNDWATER CLOSURE REPORT**

Hammond #41A  
Meter Code: 89894

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**CONCLUSIONS**

EPFS initially excavated approximately 250 cubic yards of source material from the former pit, soil samples collected from the pit during excavation were less than 0.25 mg/kg (ppm) for benzene however TPH and Total BTEX were above remediation goals. A re-excavation of the former pit prior to installation of MW-1 removed approximately 1140 cubic yards of material from the former pit, soils samples collected from the pit during excavation were less than 0.5 mg/kg (ppm) for benzene. Initial laboratory water analysis done May 21, 1997 for MW-1, had a benzene level of 150 ppb. Over the next five years benzene levels in groundwater had a high of 1230 ppm in 9/17/1997 and averaged 263.9 ppm over the five year period. Benzene levels remained consistently over 10 ppm, until December 2000, at this point in time benzene levels began a trend below 10 ppm.

The beginning of four clean consecutive quarters began with the November 2001 quarterly sample and ended with the fourth clean quarter in September 2002. August 2002 water level information shows a groundwater flow in a north, northwest direction (See Figure 4).

Minimal impact has occurred to groundwater at this site. Monitor Well One has showed a decreasing trend in BTEX over time with no evidence of significant rebound. BTEX levels have been below NMWQCC standards for four consecutive quarters. Based on the data presented in this closure report, the site poses minimal risk to human health and the environment. No potential receptors exist within 1,000 feet of the site and the majority of source material has been removed from the former EPFS pit. Therefore, EPFS requests this site be closed and MW-1, MW-2 and MW-3 will be abandoned according to the approved Monitoring Well Abandonment Plan.

**RECOMMENDATIONS**

- > EPFS requests closure of this site
- > Following NMOCD approval for closure, MW-1, MW-2, and MW-3 will be abandoned in accordance with the approved Monitoring Well Abandonment Plan.

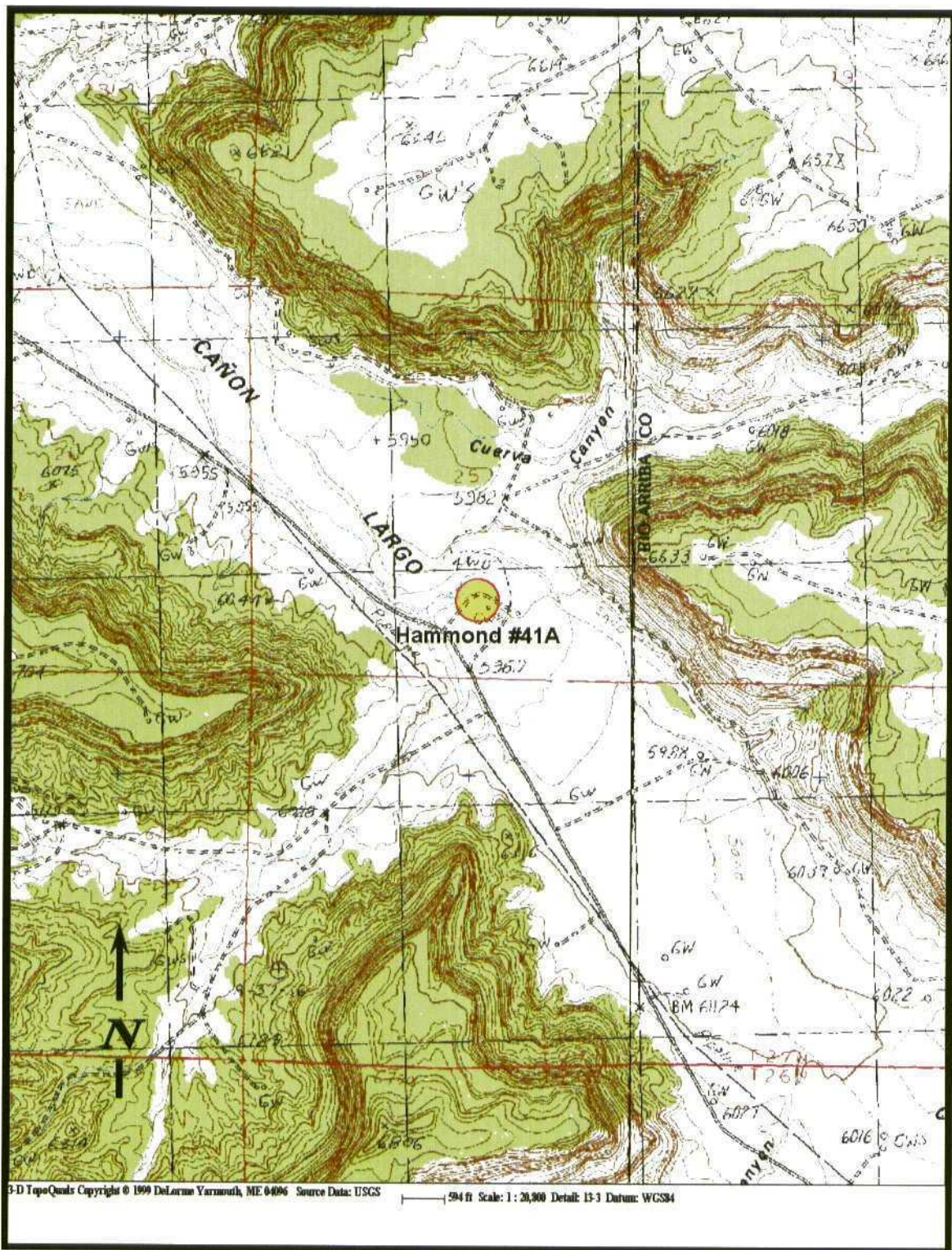
**Table 1 BTEX**  
Hammond #41 A

| Sample #     | Meter Line # | Site Name    | Sample Date | MW# | Benzene<br>(ppb) | Ethyl Benzene<br>(ppb) | Toluene<br>(ppb) | Total Xylenes<br>(ppb) |
|--------------|--------------|--------------|-------------|-----|------------------|------------------------|------------------|------------------------|
| 970478       | 89894        | Hammond #41A | 5/21/97     | 1   | 150              | 56.7                   | 60.1             | 484                    |
| 970544       | 89894        | Hammond #41A | 6/9/97      | 1   | 190              | 36.9                   | 12.3             | 181                    |
| 970990       | 89894        | Hammond #41A | 9/17/97     | 1   | 1230             | 263                    | 5                | 830                    |
| 971289       | 89894        | Hammond #41A | 12/9/97     | 1   | 685              | 141                    | 1                | 261                    |
| 980245       | 89894        | Hammond #41A | 3/20/98     | 1   | 662              | 78.7                   | 3.06             | 292                    |
| 980455       | 89894        | Hammond #41A | 6/4/98      | 1   | 286              | 38.4                   | 2.43             | 140                    |
| 980634       | 89894        | Hammond #41A | 9/10/98     | 1   | 391              | 34                     | 1                | 144                    |
| 980874       | 89894        | Hammond #41A | 12/17/98    | 1   | 330              | 30                     | 1.6              | 150                    |
| 990107       | 89894        | Hammond #41A | 3/23/99     | 1   | 197              | 15.8                   | 1                | 74.1                   |
| 990280       | 89894        | Hammond #41A | 6/11/99     | 1   | 260              | 42                     | 3.3              | 270                    |
| 990387       | 89894        | Hammond #41A | 9/20/99     | 1   | 460              | 78                     | 16               | 440                    |
| 990473       | 89894        | Hammond #41A | 12/9/99     | 1   | 110              | 13                     | 3.9              | 53                     |
| HAM0003      | 89894        | Hammond #41A | 3/31/00     | 1   | 98               | 19                     | 3.4              | 59                     |
| HAM0006      | 89894        | Hammond #41A | 6/9/00      | 1   | 290              | 49                     | 9.7              | 290                    |
| HAM0009      | 89894        | Hammond #41A | 9/21/00     | 1   | 110              | 16                     | 1.7              | 44                     |
| HAM0012      | 89894        | Hammond #41A | 12/5/00     | 1   | 10               | 3.6                    | 0.5              | 4.3                    |
| HAM0106      | 89894        | Hammond #41A | 6/4/01      | 1   | 39               | 5.5                    | 0.6              | 16                     |
| HAM0108      | 89894        | Hammond #41A | 8/7/01      | 1   | 33               | 2.8                    | 0.5              | 4.9                    |
| HMD1101      | 89894        | Hammond #41A | 11/27/01    | 1   | 3.2              | 0.6                    | 0.5              | 0.5                    |
| HAM-0202-MW1 | 89894        | Hammond #41A | 2/25/02     | 1   | 3.9              | 0.5                    | 0.5              | 1                      |
| HAM-0205-MW1 | 89894        | Hammond #41A | 5/21/02     | 1   | 4.4              | 0.5                    | 0.5              | 1                      |
| 02-4755-1    | 89894        | Hammond #41A | 9/5/02      | 1   | 2.7              | 2.2                    | 0.5              | 1.4                    |

# Table 1 BTEx

Hammond #41 A

| Sample #     | Meter Line # | Site Name    | Sample Date | MW# | Benzene (ppb) | Ethyl Benzene (ppb) | Toluene (ppb) | Total Xylenes (ppb) |
|--------------|--------------|--------------|-------------|-----|---------------|---------------------|---------------|---------------------|
| 990418       | 89894        | Hammond #41A | 10/15/99    | 2   | <0.5          | <0.5                | <0.5          | <0.5                |
| HAM0008      | 89894        | Hammond #41A | 8/28/00     | 2   | 69            | 9.4                 | 1.3           | 28                  |
| HAM0106      | 89894        | Hammond #41A | 6/4/01      | 2   | <0.5          | <0.5                | <0.5          | <0.5                |
| HAM0108      | 89894        | Hammond #41A | 8/7/01      | 2   | <0.5          | <0.5                | <0.5          | <0.5                |
| HMD1101      | 89894        | Hammond #41A | 11/27/01    | 2   | <0.5          | <0.5                | <0.5          | <0.5                |
| HAM-0202-MW2 | 89894        | Hammond #41A | 2/25/02     | 2   | <0.5          | <0.5                | <0.5          | <1.0                |
| HAM-0205-MW2 | 89894        | Hammond #41A | 5/21/02     | 2   | <0.5          | <0.5                | <0.5          | <1.0                |
| 02-5368-2    | 89894        | Hammond #41A | 10/8/02     | 2   | <0.5          | <0.5                | <0.5          | <1.0                |
| 990419       | 89894        | Hammond #41A | 10/15/99    | 3   | <0.5          | <0.5                | <0.5          | <0.5                |
| HAM0008      | 89894        | Hammond #41A | 8/28/00     | 3   | <0.5          | <0.5                | <0.5          | <0.5                |
| HAM0108      | 89894        | Hammond #41A | 8/7/01      | 3   | <0.5          | <0.5                | <0.5          | <0.5                |
| 02-5368-5    | 89894        | Hammond #41A | 10/8/02     | 3   | <0.5          | <0.5                | <0.5          | <1.0                |



**Hammond #41A 89894**  
**Site Location Map**

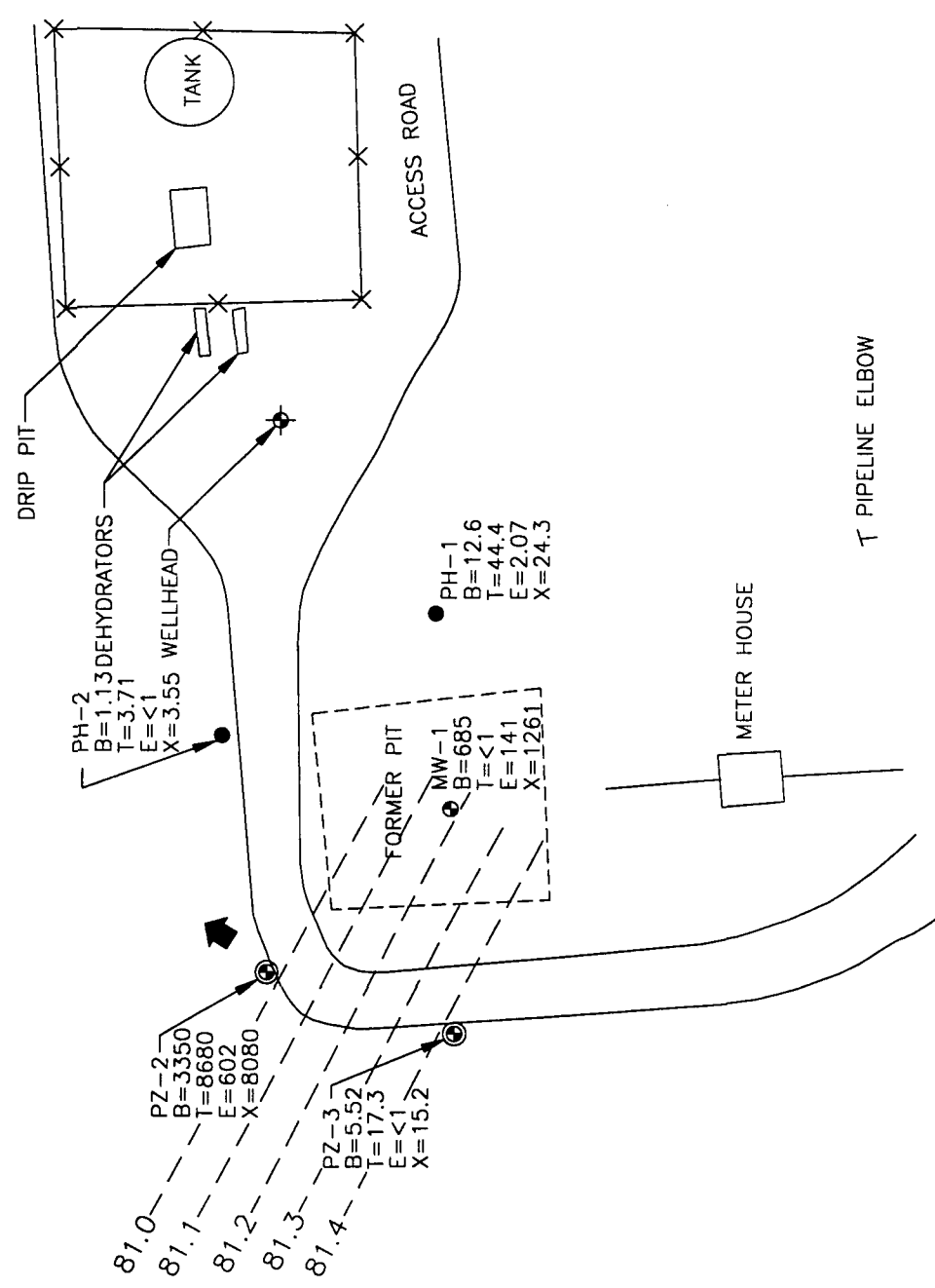
**Figure 1**



TITLE:  
HAMMOND 41 A  
METER 89894

|       |         |       |    |              |       |
|-------|---------|-------|----|--------------|-------|
| DWN:  | TMM     | DES:  | CC | PROJECT NO.: | 17520 |
| CHKD: | CC      | APPD: |    | EPFS GW PITS |       |
| DATE: | 1/20/98 | REV:  | 0  |              |       |

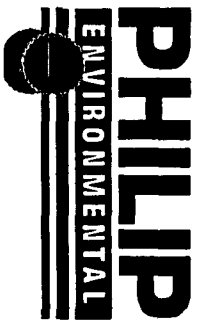
FIGURE 2



LEGEND

- ⊕ PZ-1 APPROXIMATE PIEZOMETER LOCATION AND NUMBER
- PH-1 APPROXIMATE PROBEHOLE LOCATION AND NUMBER
- ⊕ MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- B BENZENE (ug\L)
- T TOLUENE (ug\L)
- E ETHYL BENZENE (ug\L)
- X XYLENE (ug\L)
- ug\L MICROGRAMS PER LITER
- 81.1 GROUNDWATER POTENTIOMETRIC SURFACE
- ➔ APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE



TITLE:

HAMMOND 41 A  
METER 89894  
"GROUNDWATER ONLY"

SCALE AS NOTED

DATE

PROJECT NO: 13947  
EPNG-RECON PITS

DWN: M.R.W.

12/19/95

DES:

12/28/95

CHKD: K.B.G.

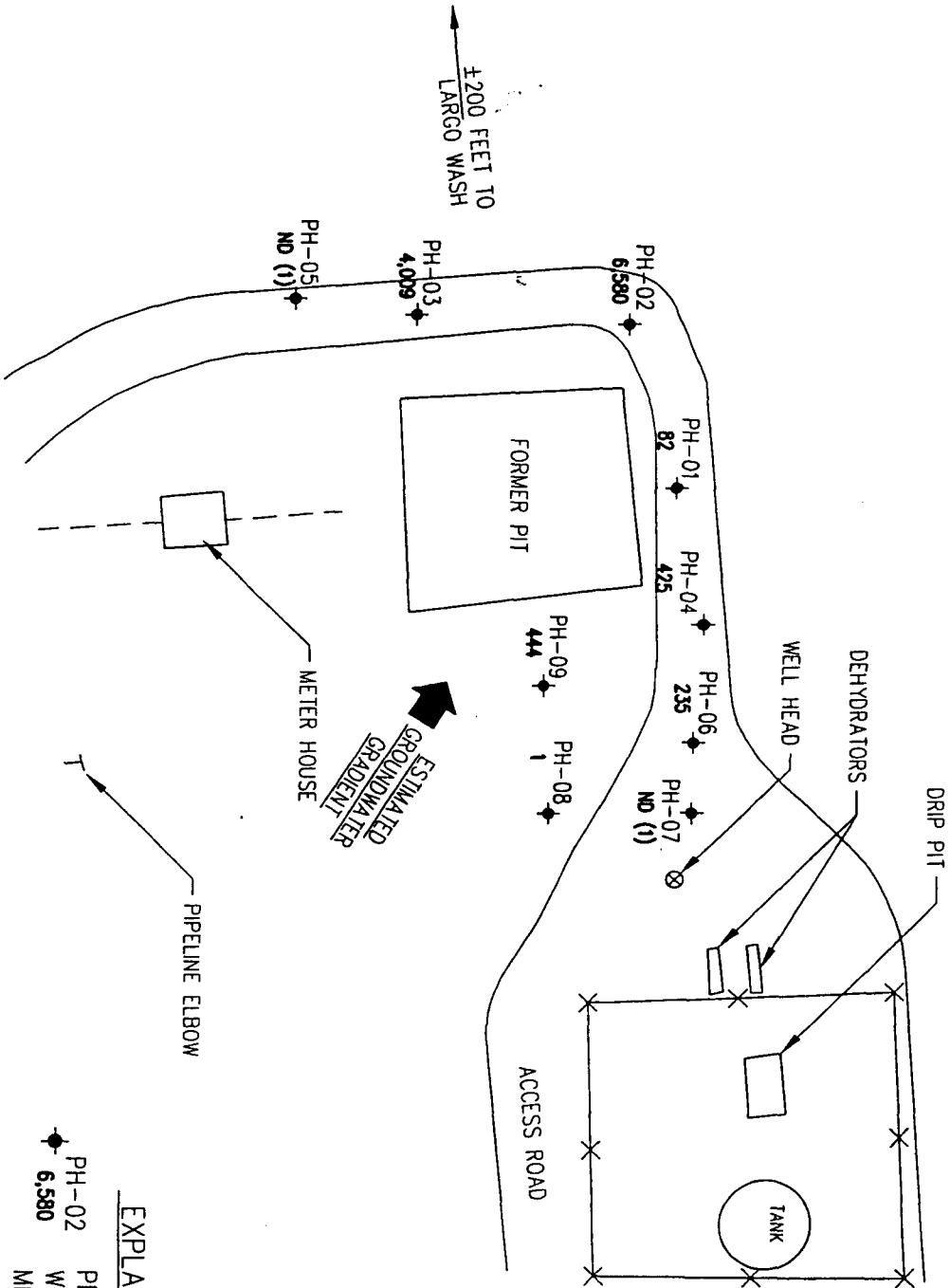
12/28/95

APPD:

FIGURE 3

REV: 1

T27 R 8 SEC 25 UNIT 0

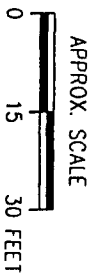


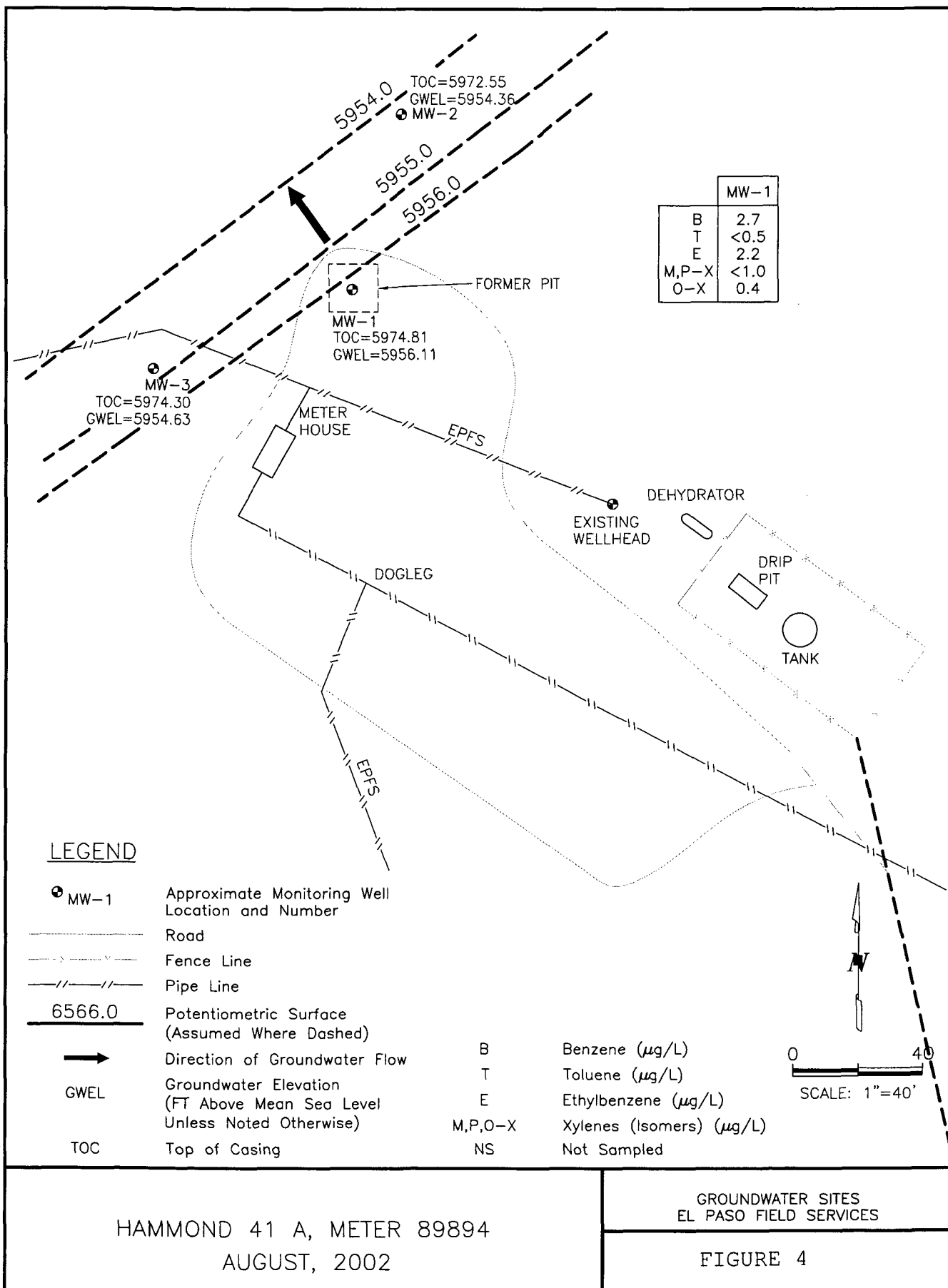
### EXPLANATION

PH-02  
6,580  
PROBE HOLE LOCATION AND GROUND-  
WATER BENZENE CONCENTRATION IN  
MICROGRAMS PER LITER, (ug/L)

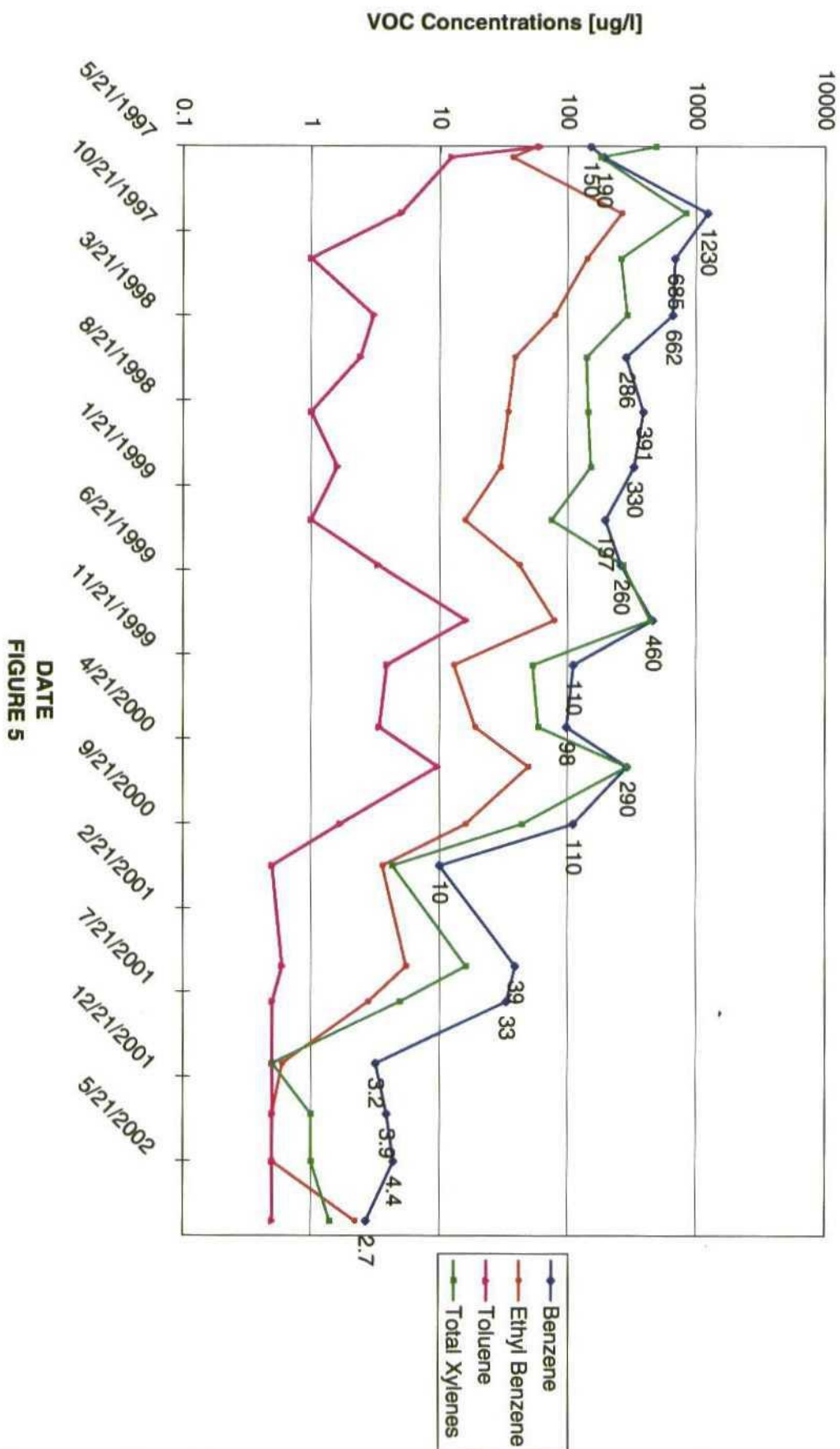
\* \* \* FENCE

- - - - - ABOVEGROUND PIPING





# Hammond #41A MW-1

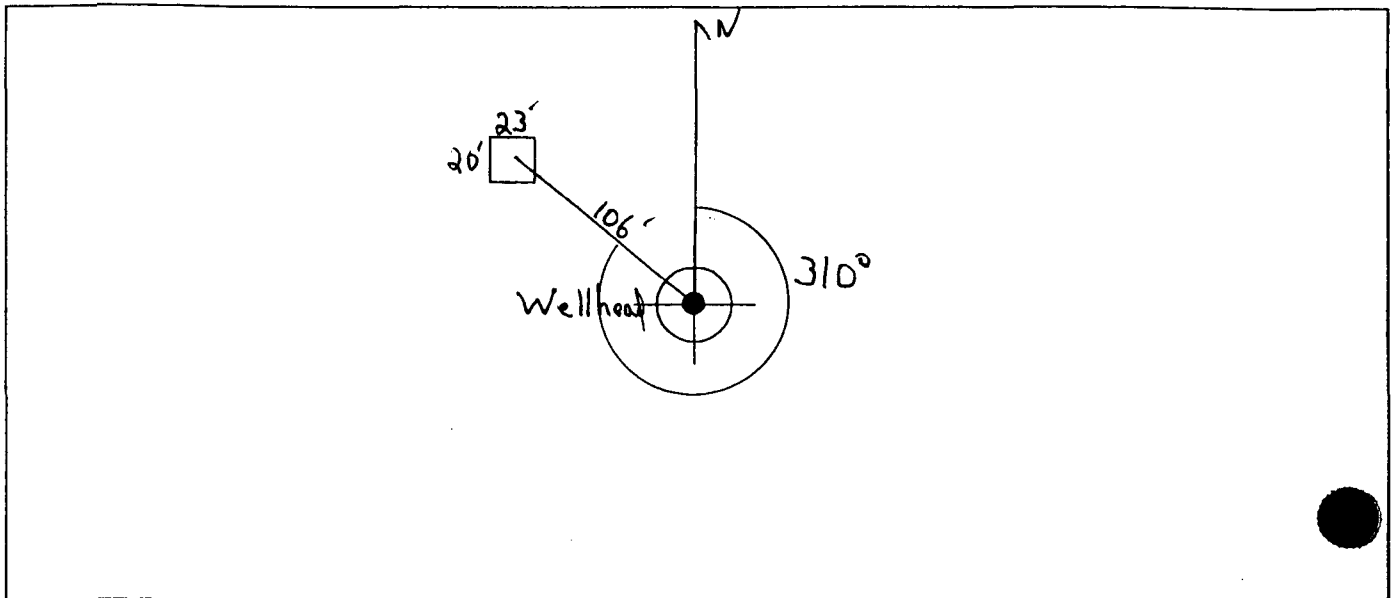


# FIELD PIT SITE ASSESSMENT FORM

|                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                       |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--|
| GENERAL                                                                                                                                                                                                                                                                                                | Meter: <u>89894</u> Location: <u>Hammond 41-A</u><br>Operator #: <u>7335</u> Operator Name: <u>R+G Drilling P/L</u> District: <u>Ballard</u><br>Coordinates: Letter: <u>0</u> Section <u>25</u> Township: <u>27</u> Range: <u>8</u><br>Or Latitude _____ Longitude _____<br>Pit Type: Dehydrator <input checked="" type="checkbox"/> Location Drip: _____ Line Drip: _____ Other: _____<br>Site Assessment Date: <u>6/13/94</u> Area: <u>07</u> Run: <u>51</u> |                                                                                                                                       |  |
|                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                       |  |
| SITE ASSESSMENT                                                                                                                                                                                                                                                                                        | <b>NMOCD Zone:</b><br>(From NMOCD Maps)                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                       |  |
|                                                                                                                                                                                                                                                                                                        | <b>Land Type:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                       |  |
|                                                                                                                                                                                                                                                                                                        | Inside <input checked="" type="checkbox"/> (1)<br>Outside <input type="checkbox"/> (2)                                                                                                                                                                                                                                                                                                                                                                         | BLM <input checked="" type="checkbox"/> (1)<br>State <input type="checkbox"/> (2)<br>Fee <input type="checkbox"/> (3)<br>Indian _____ |  |
|                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                       |  |
| REMARKS                                                                                                                                                                                                                                                                                                | <b>Depth to Groundwater</b><br>Less Than 50 Feet (20 points) <input checked="" type="checkbox"/> (1)<br>50 Ft to 99 Ft (10 points) <input type="checkbox"/> (2)<br>Greater Than 100 Ft (0 points) <input type="checkbox"/> (3)                                                                                                                                                                                                                                 |                                                                                                                                       |  |
|                                                                                                                                                                                                                                                                                                        | <b>Wellhead Protection Area :</b><br>Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? <input type="checkbox"/> (1) YES (20 points) <input checked="" type="checkbox"/> (2) NO (0 points)                                                                                                                                                           |                                                                                                                                       |  |
| <b>Horizontal Distance to Surface Water Body</b><br>Less Than 200 Ft (20 points) <input checked="" type="checkbox"/> (1)<br>200 Ft to 1000 Ft (10 points) <input type="checkbox"/> (2)<br>Greater Than 1000 Ft (0 points) <input type="checkbox"/> (3)                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                       |  |
| Name of Surface Water Body <u>Large Canyon</u><br>(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)<br>Distance to Nearest Ephemeral Stream <input type="checkbox"/> (1) < 100' (Navajo Pits Only)<br><input type="checkbox"/> (2) > 100' |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                       |  |
| TOTAL HAZARD RANKING SCORE: <u>40</u> POINTS                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                       |  |
| Remarks : <u>Redline Book - Inside Vulnerable Zone Topo - Inside</u><br><u>Pits Will close. Pits have liquid in it (called Ballard)</u><br><div style="text-align: right;">DIG + HAUL</div>                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                       |  |

# ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 310° Footage from Wellhead 106'  
 b) Length : 23' Width : 20' Depth : 4'



## REMARKS :

Pictures @ 1302 (9-12)  
End Dump

Completed By:

Cory Chance  
 Signature

6/12/94  
 Date

# FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL

Meter: 89894 Location: Hammond 41-A  
 Coordinates: Letter: 0 Section 25 Township: 27 Range: 8  
 Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Date Started : ~~7-27-94~~ <sup>7-28-94</sup> Run: 07 51  
7-28-94

FIELD OBSERVATIONS

Sample Number(s): KP 157  
 Sample Depth: 12' Feet  
 Final PID Reading 381 PID Reading Depth 12' Feet  
 Yes No  
 Groundwater Encountered ☐ ☒ Approximate Depth \_\_\_\_\_ Feet

CLOSURE

Remediation Method :  
 Excavation ☒ Approx. Cubic Yards 250  
 Onsite Bioremediation ☐  
 Backfill Pit Without Excavation ☐  
 Soil Disposition:  
 Envirotech ☒ ☐ Tierra  
 Other Facility ☐ Name: \_\_\_\_\_  
 Pit Closure Date: ~~7-27-94~~ <sup>KP-7-28-94</sup> Pit Closed By: B.E.I.  
7-28-94

REMARKS

Remarks : Some Line markers. Pit has some liquid in it. Have to solidify to Hall off. Started Remediating to 12' Soil turned Black. Four walls and Bottom. 12' Soil still the same. Black.

Signature of Specialist: Kelly Padilla



Analytical **Technologies**, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107  
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. 408313

August 12, 1994

El Paso Natural Gas Co.  
P.O. Box 4990  
Farmington, NM 87499

Project Name/Number: PIT CLOSURE 24324

Attention: John Lambdin

On 08/03/94, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

8015 analysis was added on 08/08/94 for sample 945789 per John Lambdin.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.  
Project Manager

H. Mitchell Rubenstein, Ph.D.  
Laboratory Manager

MR:jt

Enclosure





Analytical Technologies, Inc.

# GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)  
CLIENT : EL PASO NATURAL GAS CO. ATI I.D.: 408313  
PROJECT # : 24324  
PROJECT NAME : PIT CLOSURE

| SAMPLE ID. #  | CLIENT I.D. | MATRIX | DATE SAMPLED | DATE EXTRACTED | DATE ANALYZED | DIL. FACTOR |
|---------------|-------------|--------|--------------|----------------|---------------|-------------|
| 04            | 945784      | NON-AQ | 07/28/94     | 08/04/94       | 08/05/94      | 10          |
| 05            | 945785      | NON-AQ | 07/28/94     | 08/04/94       | 08/05/94      | 10          |
| 06            | 945789      | NON-AQ | 07/29/94     | 08/04/94       | 08/05/94      | 1           |
| PARAMETER     |             |        | UNITS        | 04             | 05            | 06          |
| BENZENE       |             |        | MG/KG        | <0.25          | <0.25         | <0.025      |
| TOLUENE       |             |        | MG/KG        | 9.2            | 4.3           | <0.025      |
| ETHYLBENZENE  |             |        | MG/KG        | 3.8            | 6.7           | 0.053       |
| TOTAL XYLENES |             |        | MG/KG        | 50             | 110           | 1.2         |

## SURROGATE:

|                        |    |      |     |
|------------------------|----|------|-----|
| BROMOFLUOROBENZENE (%) | 82 | 161* | 107 |
|------------------------|----|------|-----|

\*OUTSIDE ATI QUALITY CONTROL LIMITS DUE TO MATRIX INTERFERENCE

\*\*\*\*\*  
 Test Method for  
 Oil and Grease and Petroleum Hydrocarbons  
 in Water and Soil  
 Perkin-Elmer Model 1600 FT-IR  
 Analysis Report  
 \*\*\*\*\*

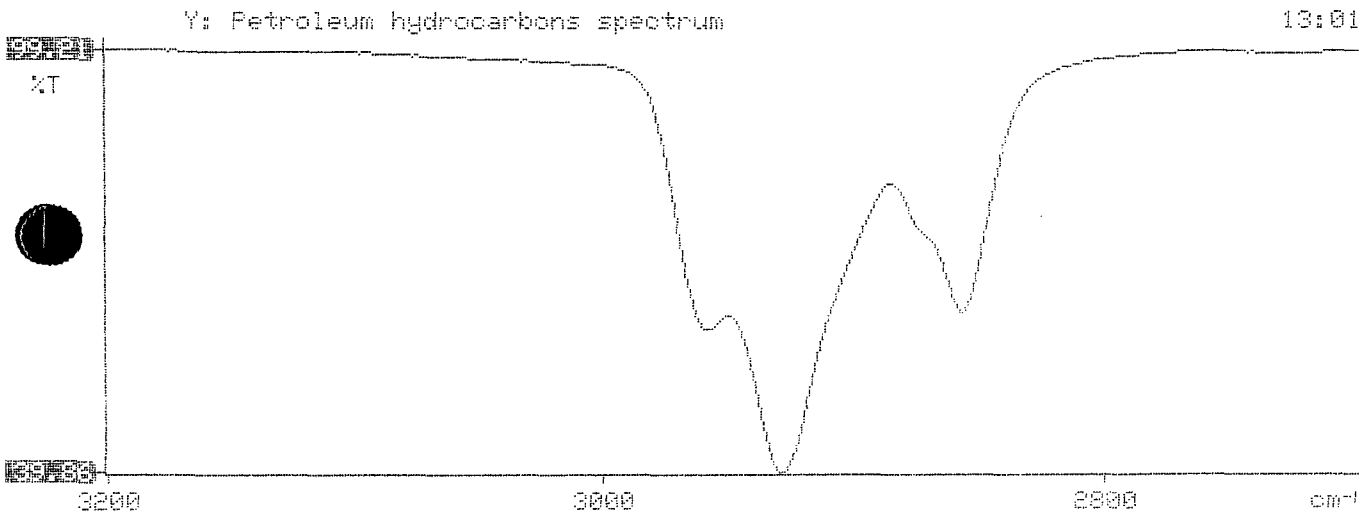
94/08/02 13:01

Sample identification  
 945784

Initial mass of sample, g  
 2.000

Volume of sample after extraction, ml  
 28.000

Petroleum hydrocarbons, ppm  
 3150.052  
 Net absorbance of hydrocarbons (2930 cm<sup>-1</sup>)  
 0.395





CHAIN OF CUSTODY RECORD

Page \_\_\_\_\_ of \_\_\_\_\_

| PROJECT NUMBER<br><b>11957</b>                                                   |         | PROJECT NAME<br><b>Pit Closure Project # 24324</b> |        | CONTACT LABORATORY P. O. NUMBER |  |
|----------------------------------------------------------------------------------|---------|----------------------------------------------------|--------|---------------------------------|--|
| SAMPLERS: (Signature)<br><i>Kelly Padilla</i>                                    |         | DATE:<br><b>7-28-94</b>                            |        |                                 |  |
| LAB ID                                                                           | DATE    | TIME                                               | MATRIX | SAMPLE NUMBER                   |  |
| 5784                                                                             | 7-28-94 | 0840                                               | Soil   | KP 157                          |  |
| 5785                                                                             | 7-28-94 | 1534                                               | Soil   | KP 158                          |  |
| [The following 14 rows of the table are crossed out with a large diagonal line.] |         |                                                    |        |                                 |  |

| TOTAL NUMBERS OF CONTAINERS                                                      |           | SAMPLE TYPE |          | REQUESTED ANALYSIS |  | REMARKS |  |
|----------------------------------------------------------------------------------|-----------|-------------|----------|--------------------|--|---------|--|
| TPH                                                                              | EPA 418.1 | BTEX        | EPA 8020 | Seq                |  |         |  |
| X                                                                                | X         | X           | X        | 141                |  |         |  |
| X                                                                                | X         | X           | X        | 142                |  |         |  |
| [The following 14 rows of the table are crossed out with a large diagonal line.] |           |             |          |                    |  |         |  |

| RELINQUISHED BY: (Signature)<br><i>Kelly Padilla</i> | DATE/TIME<br><b>7-28-94/1645</b> | RECEIVED BY: (Signature)<br><i>Brenda Kress</i> | DATE/TIME<br><b>7-29-94/0840</b> | RECEIVED BY: (Signature) |
|------------------------------------------------------|----------------------------------|-------------------------------------------------|----------------------------------|--------------------------|
| RELINQUISHED BY: (Signature)                         | DATE/TIME                        | RECEIVED BY: (Signature)                        | DATE/TIME                        | RECEIVED BY: (Signature) |

| REQUESTED TURNAROUND TIME:<br><input type="checkbox"/> ROUTINE <input type="checkbox"/> RUSH | CARRIER CO. | CHARGE CODE | SAMPLE RECEIPT REMARKS | RESULTS & INVOICES TO:                                                                                               |
|----------------------------------------------------------------------------------------------|-------------|-------------|------------------------|----------------------------------------------------------------------------------------------------------------------|
|                                                                                              |             |             |                        | <b>FIELD SERVICES LABORATORY<br/>EL PASO NATURAL GAS COMPANY<br/>P. O. BOX 4990<br/>FARMINGTON, NEW MEXICO 87499</b> |

BILL NO.: \_\_\_\_\_

505-599-2144 FAX: 505-599-2261

# RECORD OF SUBSURFACE EXPLORATION

Burlington Environmental Inc.

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # BH-1

Well #

Page 1 of 1

Project Name EPNG PITS

Project Number 14509 Phase 0000.77

Project Location Hammond 41-A 89894

Elevation

Borehole Location Lot 0-S25-727-R8

GWL Depth

Logged By J.F. LaBarbera

Drilled By K. Padilla

Date/Time Started 7/25/95-1435

Date/Time Completed 1515

Well Logged By J.F. LaBarbera

Personnel On-Site K. Padilla, F. Rivera, B. Charlie J. O'Keefe

Contractors On-Site

Client Personnel On-Site

Drilling Method 4 1/4 ID HSA

Air Monitoring Method PID, CGI

| Depth<br>(Feet) | Sample<br>Number | Sample<br>Interval | Sample<br>Type &<br>Recovery<br>(inches) | Sample Description<br>Classification System: USCS                                | USCS<br>Symbol | Depth<br>Lithology<br>Change<br>(feet) | Air Monitoring<br>Units: ppm 145<br>BZ BH S |    |     | Drilling Conditions<br>& Blow Counts |
|-----------------|------------------|--------------------|------------------------------------------|----------------------------------------------------------------------------------|----------------|----------------------------------------|---------------------------------------------|----|-----|--------------------------------------|
| 0               |                  |                    |                                          |                                                                                  |                |                                        |                                             |    |     |                                      |
| 5               |                  |                    |                                          |                                                                                  |                |                                        |                                             |    |     |                                      |
| 10              |                  |                    |                                          |                                                                                  |                |                                        |                                             |    |     |                                      |
| 15              | 1                | 15-15.4            | 8                                        | 15-15.5<br>Brown, soft, CLAY, med.<br>plasticity, v moist.                       | CL             |                                        | 0                                           | 73 | 153 | 1472                                 |
|                 | 2                | 17-18.3            |                                          | 15.5 - GRY, loose, v to 5m SAND,<br>wet, odor, VISUAL impact<br>→ AA - Saturated | SP             |                                        | 0                                           | 25 | 32  | 1455                                 |
| 20              |                  |                    |                                          |                                                                                  |                |                                        |                                             |    |     |                                      |
| 25              |                  |                    |                                          |                                                                                  |                |                                        |                                             |    |     |                                      |
| 30              |                  |                    |                                          |                                                                                  |                |                                        |                                             |    |     |                                      |
| 35              |                  |                    |                                          |                                                                                  |                |                                        |                                             |    |     |                                      |
| 40              |                  |                    |                                          |                                                                                  |                |                                        |                                             |    |     |                                      |

Comments:

Sample IFH 25 of clay from 15-15.4' sent to lab for BTEX/  
TPH analysis. Sand was visually impacted.

Geologist Signature

*John LaBarbera*

CHAIN OF CUSTODY RECORD

| PROJECT NUMBER<br># 24324                                                                                                                                                                                                                                                                  |         | PROJECT NAME<br>Pit Closure Project |      | DATE: 7/25/95 |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------|------|---------------|----------|
| LAB ID                                                                                                                                                                                                                                                                                     |         | DATE                                | TIME | MATRIX        | FIELD ID |
| 947073                                                                                                                                                                                                                                                                                     | 7/25/95 | 0840                                | Soil | JFL 19        | 1        |
| 947074                                                                                                                                                                                                                                                                                     | "       | 1430                                | Soil | JFL 20        | 1        |
| 947075                                                                                                                                                                                                                                                                                     | "       | 1830                                | Soil | JFL 21        | 1        |
| 947076                                                                                                                                                                                                                                                                                     | "       | 1351                                | Soil | JFL 22        | 1        |
| 947077                                                                                                                                                                                                                                                                                     | "       | 1351                                | Soil | JFL 23        | 1        |
| 947078                                                                                                                                                                                                                                                                                     | "       | 1412                                | Soil | JFL 24        | 1        |
| 947079                                                                                                                                                                                                                                                                                     | 7/25/95 | 1400                                | Soil | JFL 25        | 1        |
| <div style="display: flex; justify-content: space-between;"> <div> <p>RELINQUISHED BY: (Signature) <i>John J. Barber</i></p> <p>RELINQUISHED BY: (Signature) _____</p> </div> <div> <p>RECEIVED BY: (Signature) <i>Kelly Swall</i></p> <p>RECEIVED BY: (Signature) _____</p> </div> </div> |         |                                     |      |               |          |
| REQUESTED ANALYSIS                                                                                                                                                                                                                                                                         |         | TOTAL NUMBERS OF CONTAINERS         |      |               |          |
| EPA 418.1                                                                                                                                                                                                                                                                                  | TPH     | EPA 8020                            | BTEX | LAB PID       | PID      |
| SEQUENCE #                                                                                                                                                                                                                                                                                 |         | REMARKS                             |      |               |          |
| 17                                                                                                                                                                                                                                                                                         | 736     | 17                                  | 736  | 17            | 736      |
| 18                                                                                                                                                                                                                                                                                         | 208     | 18                                  | 208  | 18            | 208      |
| 19                                                                                                                                                                                                                                                                                         | 8.5     | 19                                  | 8.5  | 19            | 8.5      |
| 20                                                                                                                                                                                                                                                                                         | 174     | 20                                  | 174  | 20            | 174      |
| 21                                                                                                                                                                                                                                                                                         | 153     | 21                                  | 153  | 21            | 153      |

RELINQUISHED BY: (Signature) *John J. Barber*

RELINQUISHED BY: (Signature) \_\_\_\_\_

RECEIVED BY: (Signature) *Kelly Swall*

RECEIVED BY: (Signature) \_\_\_\_\_

REQUESTED TURNAROUND TIME:  
☐ ROUTINE ☐ RUSH

CARRIER CO. \_\_\_\_\_

BILL NO.: \_\_\_\_\_

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

**FIELD SERVICES LABORATORY**  
**EL PASO NATURAL GAS COMPANY**  
**P. O. BOX 4990**  
**FARMINGTON, NEW MEXICO 87499**

505-599-2144 FAX: 505-599-2261



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

Phase II Drilling  
Hammond 41-A  
(15-15.66')

SAMPLE IDENTIFICATION

|                            | Field ID                                       | Lab ID     |
|----------------------------|------------------------------------------------|------------|
| SAMPLE NUMBER:             | JFL 25                                         | 9470 79    |
| MTR CODE   SITE NAME:      | <sup>RB 7/24/95</sup><br><del>07/2</del> 89894 | N/A        |
| SAMPLE DATE   TIME (Hrs):  | 07/25/95                                       | 14:22      |
| SAMPLED BY:                | N/A                                            |            |
| DATE OF TPH EXT.   ANAL.:  | 7-26-95                                        | 7-26-95    |
| DATE OF BTEX EXT.   ANAL.: | 7-27-95                                        | 7-28-95    |
| TYPE   DESCRIPTION:        | V6                                             | Brown Clay |

REMARKS:

RESULTS

| PARAMETER      | RESULT                                        | UNITS | QUALIFIERS |   |      |       |
|----------------|-----------------------------------------------|-------|------------|---|------|-------|
|                |                                               |       | DF         | Q | M(g) | V(ml) |
| BENZENE        | 0.80                                          | MG/KG | 5          |   |      |       |
| TOLUENE        | 3.1                                           | MG/KG | 5          |   |      |       |
| ETHYL BENZENE  | 0.48                                          | MG/KG | 5          |   |      |       |
| TOTAL XYLENES  | 5.0                                           | MG/KG | 5          |   |      |       |
| TOTAL BTEX     | 9.38                                          | MG/KG |            |   |      |       |
| TPH (418.1)    | <sup>PLB 7/27/95</sup><br><del>6.5</del> 62.5 | MG/KG |            |   | 2.17 | 28    |
| HEADSPACE PID  | 153                                           | PPM   |            |   |      |       |
| PERCENT SOLIDS | 75.6                                          | %     |            |   |      |       |

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

Surrogate Recovery was at 107 % for this sample All QA/QC was acceptable.  
Narrative:

ATI Results attached

DF = Dilution Factor Used

Approved By:

28

Date:

8/22/95

\*\*\*\*\*  
Test Method for  
Oil and Grease and Petroleum Hydrocarbons  
in Water and Soil  
Perkin-Elmer Model 1600 FT-IR  
Analysis Report  
\*\*\*\*\*

95/07/26 14:20

Sample identification

947079

Initial mass of sample, g

2.170

Volume of sample after extraction, ml

28.000

Petroleum hydrocarbons, ppm

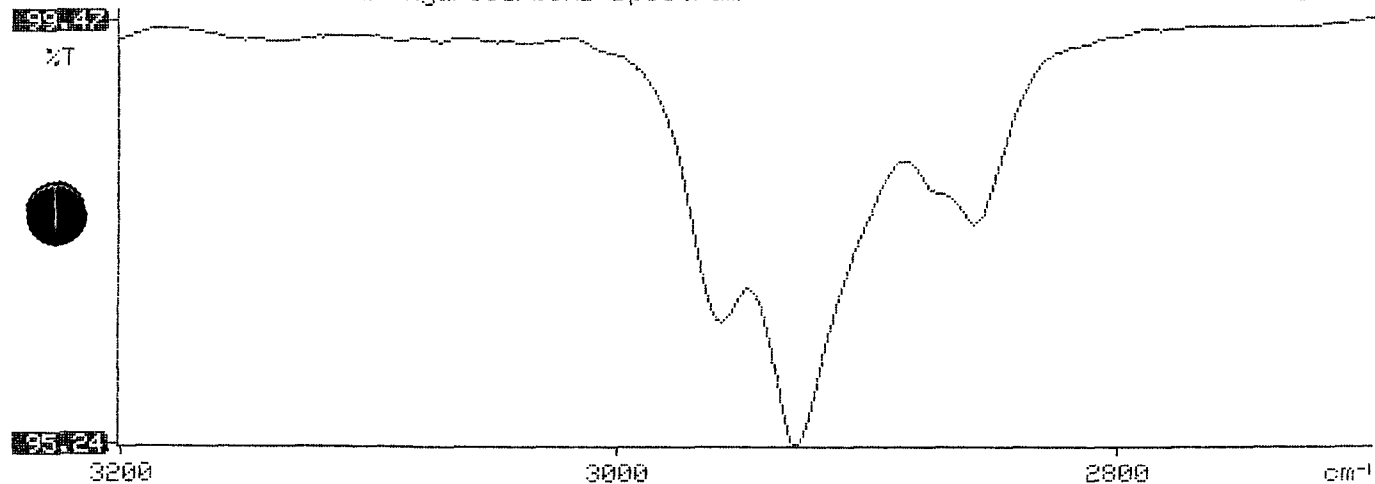
62.517

Net absorbance of hydrocarbons (2930  $\text{cm}^{-1}$ )

0.019

Y: Petroleum hydrocarbons spectrum

14:20





Analytical Technologies, Inc.

# GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)  
CLIENT : EL PASO NATURAL GAS CO. ATI I.D.: 507411  
PROJECT # : 24324  
PROJECT NAME : PIT CLOSURE/PHASE II DRILLING

| SAMPLE ID. #  | CLIENT I.D. | MATRIX | DATE SAMPLED | DATE EXTRACTED | DATE ANALYZED | DIL. FACTOR |
|---------------|-------------|--------|--------------|----------------|---------------|-------------|
| 10            | 947079      | NON-AQ | 07/25/95     | 07/27/95       | 07/28/95      | 5           |
| PARAMETER     |             |        | UNITS        | 10             |               |             |
| BENZENE       |             |        | MG/KG        | 0.80           |               |             |
| TOLUENE       |             |        | MG/KG        | 3.1            |               |             |
| ETHYLBENZENE  |             |        | MG/KG        | 0.48           |               |             |
| TOTAL XYLENES |             |        | MG/KG        | 5.0            |               |             |

## SURROGATE:

BROMOFLUOROBENZENE (%) 107



Analytical**Technologies**, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107  
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. 507411

August 3, 1995

El Paso Natural Gas Co.  
P.O. Box 4990  
Farmington, NM 87499

Project Name/Number: PIT CLOSURE/PHASE II DRILLING 24324

Attention: John Lambdin

On 07/27/95, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8015 analyses were added on 07/27/95 for samples "947068", "947069" and "947077" per Kim Kirby.

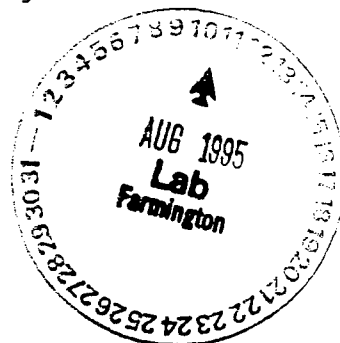
If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Kimberly D. McNeill  
Project Manager

MR:jt

Enclosure

H. Mitchell Rubenstein, Ph.D.  
Laboratory Manager





# EL PASO FIELD SERVICES



## FIELD SERVICES LABORATORY

### ANALYTICAL REPORT

### PIT CLOSURE PROJECT

## SAMPLE IDENTIFICATION

|                            |          |             |
|----------------------------|----------|-------------|
|                            | Field ID | Lab ID      |
| SAMPLE NUMBER:             | CMC275   | 948038      |
| MTR CODE   SITE NAME:      | 89894    | Hammond 41A |
| SAMPLE DATE   TIME (Hrs):  | 12/5/96  | 1300        |
| PROJECT:                   | GEOPROBE |             |
| DATE OF BTEX EXT.   ANAL.: | 12/7/96  | 12/7/96     |
| TYPE   DESCRIPTION:        | PH1      | Water       |

Field Remarks: \_\_\_\_\_

## RESULTS

| PARAMETER     | RESULT | UNITS | QUALIFIERS |   |  |  |
|---------------|--------|-------|------------|---|--|--|
|               |        |       | DF         | Q |  |  |
| BENZENE       | 12.6   | PPB   |            |   |  |  |
| TOLUENE       | 44.4   | PPB   |            |   |  |  |
| ETHYL BENZENE | 2.07   | PPB   |            |   |  |  |
| TOTAL XYLENES | 24.3   | PPB   |            |   |  |  |
| TOTAL BTEX    | 83.4   | PPB   |            |   |  |  |

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 98.6 % for this sample All QA/QC was acceptable.  
DF = Dilution Factor Used

#### Narrative:

Samples were received with bubbles.

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

12/9/96

# EL PASO FIELD SERVICES LABORATORY

## EPA METHOD 8020 - BTEX

File : C:\LABQUEST\CHROM000\120696-0.016  
 Method : C:\LABQUEST\METHODS\10-120296.MET  
 Sample ID : 948038 X1  
 Acquired : Dec 07, 1996 01:46:57  
 Printed : Dec 07, 1996 02:17:23  
 User : MARLON

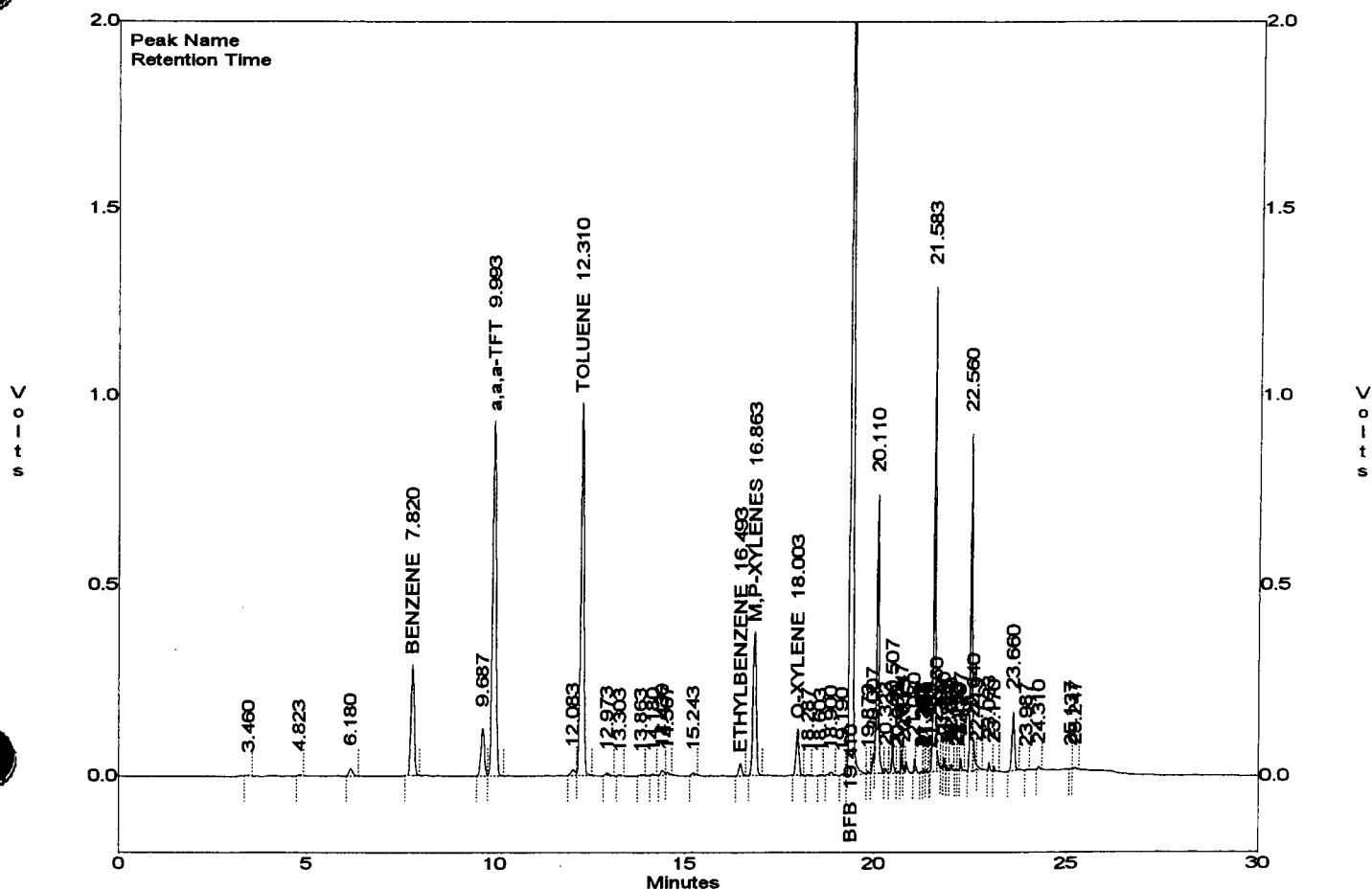
### Channel A Results

| COMPONENT    | RET TIME | AREA     | CONC (ug/L) |
|--------------|----------|----------|-------------|
| BENZENE      | 7.820    | 1649737  | 12.5520     |
| a,a,a-TFT    | 9.993    | 6138148  | 94.9925     |
| TOLUENE      | 12.310   | 5906753  | 44.4075     |
| ETHYLBENZENE | 16.493   | 179970   | 2.0655      |
| M,P-XYLENES  | 16.863   | 2250742  | 17.6359     |
| O-XYLENE     | 18.003   | 627092   | 6.6197      |
| BFB          | 19.410   | 13724518 | 98.6205     |

### Channel A Group Results

| COMPONENT     | RET TIME | AREA    | CONC (ug/L) |
|---------------|----------|---------|-------------|
| TOTAL XYLENES |          | 2877834 | 24.2556     |

C:\LABQUEST\CHROM000\120696-0.016 -- Channel A





# EL PASO FIELD SERVICES



## FIELD SERVICES LABORATORY

### ANALYTICAL REPORT

### PIT CLOSURE PROJECT

## SAMPLE IDENTIFICATION

|                            |          |             |
|----------------------------|----------|-------------|
|                            | Field ID | Lab ID      |
| SAMPLE NUMBER:             | CMC276   | 948039      |
| MTR CODE   SITE NAME:      | 89894    | Hammond 41A |
| SAMPLE DATE   TIME (Hrs):  | 12/5/96  | 1335        |
| PROJECT:                   | GEOPROBE |             |
| DATE OF BTEX EXT.   ANAL.: | 12/7/96  | 12/7/96     |
| TYPE   DESCRIPTION:        | PH2      | Water       |

Field Remarks: \_\_\_\_\_

## RESULTS

| PARAMETER     | RESULT | UNITS | QUALIFIERS |   |  |  |
|---------------|--------|-------|------------|---|--|--|
|               |        |       | DF         | Q |  |  |
| BENZENE       | 1.13   | PPB   |            |   |  |  |
| TOLUENE       | 3.71   | PPB   |            |   |  |  |
| ETHYL BENZENE | <1     | PPB   |            |   |  |  |
| TOTAL XYLENES | 3.55   | PPB   |            |   |  |  |
| TOTAL BTEX    | 8.39   | PPB   |            |   |  |  |

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 99.1 % for this sample All QA/QC was acceptable.  
DF = Dilution Factor Used

### Narrative:

Samples were received with bubbles.

Approved By: \_\_\_\_\_

*John L. Landa*

Date: \_\_\_\_\_

12/9/96

# EL PASO FIELD SERVICES LABORATORY

## EPA METHOD 8020 - BTEX

File : C:\LABQUEST\CHROM000\120696-0.017  
 Method : C:\LABQUEST\METHODS\0-120296.MET  
 Sample ID : 948039 X1  
 Acquired : Dec 07, 1996 02:28:29  
 Printed : Dec 07, 1996 02:58:54  
 User : MARLON

*EPFS*  
*Files only*

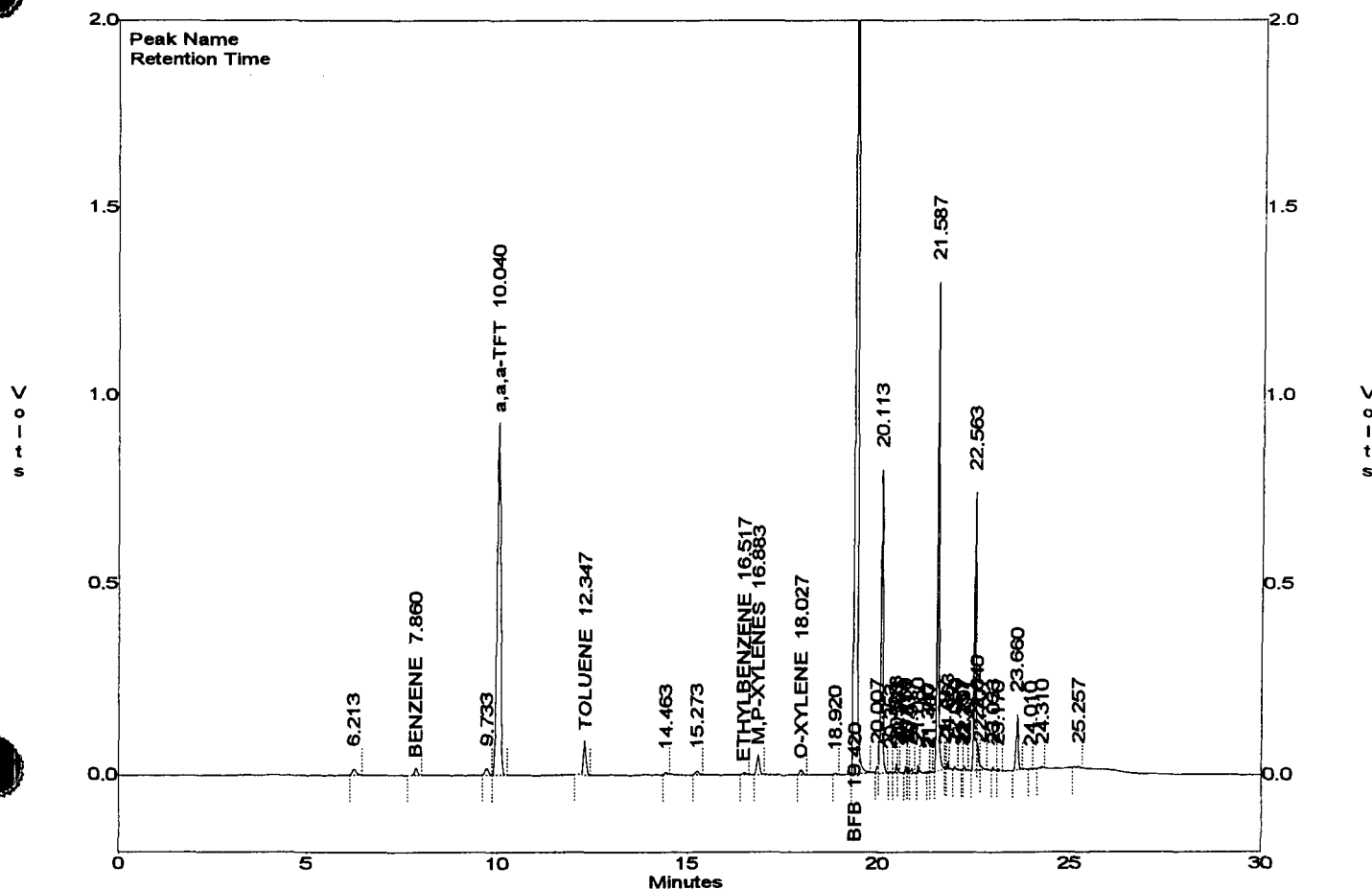
### Channel A Results

| COMPONENT    | RET TIME | AREA     | CONC (ug/L) |
|--------------|----------|----------|-------------|
| BENZENE      | 7.860    | 100273   | 1.1262      |
| a,a,a-TFT    | 10.040   | 6169133  | 95.4720     |
| TOLUENE      | 12.347   | 450840   | 3.7126      |
| ETHYLBENZENE | 16.517   | 29088    | 0.3338      |
| M,P-XYLENES  | 16.883   | 272910   | 2.5023      |
| O-XYLENE     | 18.027   | 73874    | 1.0431      |
| BFB          | 19.420   | 13787067 | 99.0699     |

### Channel A Group Results

| COMPONENT     | RET TIME | AREA   | CONC (ug/L) |
|---------------|----------|--------|-------------|
| TOTAL XYLENES |          | 346785 | 3.5453      |

C:\LABQUEST\CHROM000\120696-0.017 -- Channel A





A 2335

CHAIN OF CUSTODY RECORD

Geoprobe

Project No. 16297 Project Name EPPS GW PITS

Sampler: (Signature) CM Cherry Date:

Date Time Comp. GRAB Sample Number

Type and No. of Sample Containers Preservation Technique Requested Analysis

Remarks

11/22/96 - TRIP BLANK 1 11/22/96 X

248033 0900 V CMC270 2 X PH2 TRK28 DipX1 40153

248034 0930 V CMC271 2 X PH3

248035 1235 V CMC272 2 X PE1 Hammond 4/1A 89894

248036 1305 V CMC273 2 X PE2 (Same as PE1 (CMC272))

248037 1345 V CMC274 2 X PE3 (Water, Bubbles, Foamy)

11/22/96 1500 Received by: (Signature) Retinquished by: (Signature) Date/Time Received by: (Signature) Date/Time Received by: (Signature)

Carrier Co. Carrier Phone No. Date Results Reported / by: (Signature)

Air Bill No. 11/22/96 1500

Received by: (Signature) Retinquished by: (Signature) Date/Time Received by: (Signature) Date/Time Received by: (Signature)

Received by: (Signature) Retinquished by: (Signature) Date/Time Received by: (Signature) Date/Time Received by: (Signature)

Received by: (Signature) Retinquished by: (Signature) Date/Time Received by: (Signature) Date/Time Received by: (Signature)



# EL PASO FIELD SERVICES



## FIELD SERVICES LABORATORY

### ANALYTICAL REPORT

### PIT CLOSURE PROJECT

#### SAMPLE IDENTIFICATION

|                            |          |             |
|----------------------------|----------|-------------|
|                            | Field ID | Lab ID      |
| SAMPLE NUMBER:             | CMC272   | 948035      |
| MTR CODE   SITE NAME:      | 89894    | Hammond 41A |
| SAMPLE DATE   TIME (Hrs):  | 11/22/96 | 1235        |
| PROJECT:                   | Geoprobe |             |
| DATE OF BTEX EXT.   ANAL.: | 12/2/96  | 12/2/96     |
| TYPE   DESCRIPTION:        | PZ1      | Water       |

Field Remarks: \_\_\_\_\_

#### RESULTS

| PARAMETER     | RESULT | UNITS | QUALIFIERS |   |  |  |
|---------------|--------|-------|------------|---|--|--|
|               |        |       | DF         | Q |  |  |
| BENZENE       | 3100   | PPB   | 50         | D |  |  |
| TOLUENE       | 6020   | PPB   | 50         | D |  |  |
| ETHYL BENZENE | 403    | PPB   | 50         | D |  |  |
| TOTAL XYLENES | 3610   | PPB   | 50         | D |  |  |
| TOTAL BTEX    | 13100  | PPB   |            |   |  |  |

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 92.6 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

Narrative: \_\_\_\_\_

Approved By: \_\_\_\_\_

Date: 12/3/96



# EL PASO FIELD SERVICES



## FIELD SERVICES LABORATORY

### ANALYTICAL REPORT

### PIT CLOSURE PROJECT

#### SAMPLE IDENTIFICATION

|                            |          |             |
|----------------------------|----------|-------------|
|                            | Field ID | Lab ID      |
| SAMPLE NUMBER:             | CMC273   | 948036      |
| MTR CODE   SITE NAME:      | 89894    | Hammond 41A |
| SAMPLE DATE   TIME (Hrs):  | 11/22/96 | 1305        |
| PROJECT:                   | Geoprobe |             |
| DATE OF BTEX EXT.   ANAL.: | 12/2/96  | 12/2/96     |
| TYPE   DESCRIPTION:        | PZ2      | Water       |

Field Remarks: \_\_\_\_\_

#### RESULTS

| PARAMETER     | RESULT | UNITS | QUALIFIERS |   |  |  |
|---------------|--------|-------|------------|---|--|--|
|               |        |       | DF         | Q |  |  |
| BENZENE       | 3350   | PPB   | 50         | D |  |  |
| TOLUENE       | 8680   | PPB   | 50         | D |  |  |
| ETHYL BENZENE | 602    | PPB   | 50         | D |  |  |
| TOTAL XYLENES | 8080   | PPB   | 50         | D |  |  |
| TOTAL BTEX    | 20700  | PPB   |            |   |  |  |

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 94.1 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

Narrative: \_\_\_\_\_

Approved By: John Lueder

Date: 12/3/96



# EL PASO FIELD SERVICES



## FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

### SAMPLE IDENTIFICATION

|                            |          |             |
|----------------------------|----------|-------------|
|                            | Field ID | Lab ID      |
| SAMPLE NUMBER:             | CMC274   | 948037      |
| MTR CODE   SITE NAME:      | 89894    | Hammond 41A |
| SAMPLE DATE   TIME (Hrs):  | 11/22/96 | 1345        |
| PROJECT:                   | Geoprobe |             |
| DATE OF BTEX EXT.   ANAL.: | 12/2/96  | 12/2/96     |
| TYPE   DESCRIPTION:        | PZ3      | Water       |

Field Remarks: \_\_\_\_\_

### RESULTS

| PARAMETER     | RESULT | UNITS | QUALIFIERS |   |  |  |
|---------------|--------|-------|------------|---|--|--|
|               |        |       | DF         | Q |  |  |
| BENZENE       | 5.52   | PPB   |            |   |  |  |
| TOLUENE       | 17.3   | PPB   |            |   |  |  |
| ETHYL BENZENE | < 1    | PPB   |            |   |  |  |
| TOTAL XYLENES | 15.2   | PPB   |            |   |  |  |
| TOTAL BTEX    | 38.0   | PPB   |            |   |  |  |

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 91.2 % for this sample All QA/QC was acceptable.  
DF = Dilution Factor Used

Narrative: \_\_\_\_\_

Approved By: John Lander

Date: 12/3/96

CHAIN OF CUSTODY RECORD

Page \_\_\_\_\_ of \_\_\_\_\_

PROJECT NUMBER  
# 24324

PROJECT NAME  
Pit Closure Project

SAMPLERS: (Signature)

DATE: 12/5/96

LAB ID DATE TIME MATRIX FIELD ID

948038 12/5/96 1300 Water CMC275

948039 ↓ 1235 ↓ Trip Blank CMC276

TOTAL NUMBER OF CONTAINERS

SAMPLE TYPE

TPH EPA 418.1

BTEX EPA 8020

LAB PID

SEQUENCE #

CONTRACT LABORATORY P. O. NUMBER

REMARKS

PH) Handed 4/4 89894

Trip Blank

PHA ↓

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED OF LABORATORY BY: (Signature)

REQUESTED TURNAROUND TIME:

☐ ROUTINE ☐ RUSH

CARRIER CO.

SAMPLE RECEIPT REMARKS

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY  
EL PASO NATURAL GAS COMPANY  
P.O. BOX 4990  
FARMINGTON, NEW MEXICO 87499

BILL NO.:

CHARGE CODE

505-599-2144

FAX: 505-599-2261

TABLE 1

## RECON® Soil-Gas and Groundwater Investigation

El Paso Natural Gas Company Sites  
San Juan Basin  
Farmington, New Mexico

| PIT LOCATION NAME                                                                 | METER<br>NUMBER | SAMPLE<br>IDENTIFICATION | PREVIOUS INVESTIGATION                                 |
|-----------------------------------------------------------------------------------|-----------------|--------------------------|--------------------------------------------------------|
| RINCON No. 48                                                                     | 71025           | RINCON48                 | Phase II HSA refusal at 23' bls                        |
| RINCON No. 10                                                                     | 70645           | RINCON10                 | Phase II HSA refusal at 25' bls                        |
| RINCON No. 70                                                                     | 71580           | RINCON70                 | Phase II HSA refusal at 32' bls                        |
| CHACON AMIGOS No. 2                                                               | 93370           | CA2                      | Phase II HSA refusal at 30' bls                        |
| JAEZ A No. 1A                                                                     | 89619           | JAC1A                    | Phase II HSA refusal at 18' bls                        |
| FLORANCE No. 107 PC                                                               | 87017           | FLORANCE107              | Phase II HSA refusal at 29.5' bls                      |
| WALKER COM No. 1                                                                  | 75879           | WALKERCOM1               | Phase II HSA refusal at 27.5' bls                      |
| HEATH F1                                                                          | 72505           | HEATHF1                  | Phase II HSA refusal at 18' bls                        |
| DAY No. 3                                                                         | 90847           | DAY3                     | Phase II HSA refusal at 30' bls                        |
| SULLIVAN No. 1                                                                    | 70760           | SULLIVAN1                | Phase II HSA refusal at 23' bls                        |
| MARCOTTE 1A                                                                       | 89903           | MARCOTTE1A               | Phase II HSA refusal at 18' bls                        |
| TRUJILLO No.1 PC                                                                  | 72089           | TRUJILLO1PC              | GW encountered in phase I excavation                   |
| FEDERAL 6 No. 32                                                                  | 94768           | FEDERAL6No32             | Phase II soil boring indicated GW at less than 20' bls |
| CANYON LARGO 304                                                                  | 93788           | C-LARGO304               | Phase II soil boring indicated GW at less than 20' bls |
| CANYON LARGO 298                                                                  | 93590           | C-LARGO298               | Phase II soil boring indicated GW at less than 20' bls |
| CANYON LARGO 302                                                                  | 93793           | C-LARGO302               | Phase II soil boring indicated GW at less than 20' bls |
| K-17 LINE DRIP                                                                    | N/A             | K17LINEDRIP              | Phase II soil boring indicated GW at less than 20' bls |
| HOWELL No. 3 LINE DRIP                                                            | N/A             | HOWELL#3LD               | Phase II soil boring indicated GW at less than 20' bls |
| LATERAL 2C-1 LINE DRIP                                                            | N/A             | LATERAL2C-1              | Phase II HSA refusal at 42' bls                        |
| CUTLER 2                                                                          | 74289           | CUTLER2                  | Phase II soil boring indicated GW at less than 20' bls |
| LATERAL 2C-22 No. 3 LINE DRIP                                                     | N/A             | L2C-22No3LD              | Phase II soil boring indicated GW at less than 20' bls |
| NICKELS No. 1 DK                                                                  | 73034           | NICKELS#1DK              | Phase II soil boring indicated GW at less than 20' bls |
| McGRATH No. 1                                                                     | 70862           | MACGRATH#1               | Phase II soil boring indicated GW at less than 20' bls |
| FLORA VISTA #1                                                                    | 75718           | FLORAVISTA1              | Phase II soil boring indicated GW at less than 20' bls |
| MARSHALL B-1J                                                                     | 89039           | MB1J                     | Phase II soil boring indicated GW at less than 20' bls |
| ARGO No. 1E                                                                       | 93780           | ARGO#1E                  | Phase II soil boring indicated GW at less than 20' bls |
| TRUNK D LINE DRIP                                                                 | N/A             | TDLD                     | Phase II soil boring indicated GW at less than 20' bls |
| K-31 LINE DRIP                                                                    | N/A             | K31LINEDRIP              | Phase II soil boring indicated GW at less than 20' bls |
| MILES FEDERAL No. 1E                                                              | 94495           | MILES#1E-01              | Phase II soil boring indicated GW at less than 20' bls |
| ELLIOT GAS COM No. M1                                                             | 73147           | EGC#M1                   | Phase II HSA refusal at 22' bls                        |
| ELLIOT GAS COM No. S1                                                             | 75265           | EGC#S1                   | Phase II HSA refusal at 20' bls                        |
| LINDRITH B24                                                                      | 94967           | LINDRITHB24              | Phase II soil boring indicated GW at less than 20' bls |
| LINDRITH 23                                                                       | 74692           | LINDRITH23               | Phase II soil boring indicated GW at less than 20' bls |
| CANEPLA GAS COM No. 1                                                             | 70714           | CGC#1                    | Phase II HSA refusal at 18.5' bls                      |
| OHIO C GVT #3                                                                     | 72890           | OCG3                     | GW encountered during Phase II excavation              |
| C3 LOOP LINE DRIP                                                                 | N/A             | C3LLD                    | No GW encountered in Phase I excavation                |
| SAN JUAN UNIT 28-6 #79 PM                                                         | 72265           | SJU28679PM               | Phase II soil boring indicated GW at less than 20' bls |
| HAMMOND 41A                                                                       | 89894           | H41A                     | Phase II soil boring indicated GW at less than 20' bls |
| HSA = Hollow-stem auger drill rig<br>bls = below land surface<br>GW = groundwater |                 |                          |                                                        |

**RECON® Soil-Gas and Groundwater Investigation**  
**El Paso Natural Gas Company Sites**  
**San Juan Basin**  
**Farmington, New Mexico**

| Location Name                 | U-S-I-R   | Meter No. | Sample I.D.  | Sample Matrix            | No. of Probe Holes | No. of Samples | Depth | Comments                                |
|-------------------------------|-----------|-----------|--------------|--------------------------|--------------------|----------------|-------|-----------------------------------------|
| Rincon No. 48                 | N30-27-6  | 71025     | RINCON48     | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Rincon No. 10                 | C36-27-7  | 70645     | RINCON10     | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Rincon No. 70                 | A27-27-7  | 71580     | RINCON70     | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Chacon Amigos No. 2           | I2-22-3   | 93370     | CA2          | Soil-gas                 | 4                  | 16             | 3-12  | Benzene above action levels             |
| Jaquez A No. 1A               | D5-29-9   | 89619     | JAC1A        | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Florance No. 107 PC           | E8-30-9   | 87017     | FLORANCE107  | Soil-gas                 | 6                  | 24             | 3-12  | BTEX below action levels                |
| Walker Com No. 1              | P25-30-9  | 75879     | WALKERCOM1   | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Heath F1                      | E8-29-9   | 72505     | HEATHF1      | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Day No. 3                     | A17-29-8  | 90847     | DAY3         | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Sullivan No. 1                | M22-32-10 | 70760     | SULLIVAN1    | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Marcotte 1A                   | I5-31-10  | 89903     | MARCOTTE1A   | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Trujillo No. 1 PC             | M21-29-10 | 72089     | TRUJILLO1PC  | Groundwater              | 15                 | 18             | 4-6   | Benzene above action level and offsite  |
| Federal 6 No. 32              | GG-26-7   | 94768     | FEDERAL6N032 | Soil-gas and Groundwater | 6                  | 32             | 3-30  | BTEX above action levels                |
| Canyon Largo 304              | C11-24-6  | 93788     | C-LARGO304   | Soil-gas and Groundwater | 6                  | 15             | 3-21  | BTEX above action levels                |
| Canyon Largo 298              | A3-24-6   | 93590     | C-LARGO298   | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Canyon Largo 302              | J3-24-6   | 93793     | C-LARGO302   | Soil-gas and Groundwater | 8                  | 17             | 3-24  | BTEX below action levels                |
| K-17 Line Drip                | C26-27-8  | N/A       | K17LINEDRIP  | Groundwater              | 3                  | 3              | 18-27 | BTEX below action levels                |
| Howell No. 3 Line Drip        | C3-27-8   | N/A       | HOWELL#3LD   | Groundwater              | 3                  | 3              | 21-27 | BTEX below action levels                |
| Lateral 2C-1 Line Drip        | P36-27-11 | N/A       | LATERAL2C-1  | Soil-gas                 | 3                  | 12             | 3-12  | BTEX below action levels                |
| Cutler 2                      | A14-24-6  | 93793     | CUTLER2      | Groundwater              | 4                  | 4              | 24-27 | BTEX below action levels                |
| Lateral 2C-22 No. 3 Line Drip | G13-24-6  | N/A       | L2C-22N03LD  | Groundwater              | 3                  | 3              | 18-24 | BTEX below action levels                |
| Nickels No. 1 DK              | K11-31-13 | 73034     | NICKELS#1DK  | Groundwater              | 5                  | 5              | 12-15 | Benzene above action levels             |
| McGrath No. 1                 | F7-31-11  | 70862     | MACGRATH#1   | Soil-gas                 | 3                  | 3              | 9     | BTEX below action levels                |
| Flora Vista #1                | F22-30-12 | 75718     | FLORAVISTA1  | Groundwater              | 3                  | 3              | 24-30 | BTEX below action levels                |
| Marshall B-1J                 | O14-27-9  | 89039     | MB1J         | Soil-gas                 | 3                  | 3              | 8-20  | BTEX below action levels                |
| Argo No. 1E                   | N18-27-10 | 93780     | ARGO#1E      | Groundwater              | 3                  | 3              | 24-30 | BTEX below action levels                |
| Trunk D Line Drip             | E20-28-8  | N/A       | TDLD         | Groundwater              | 3                  | 3              | 15-24 | BTEX below action levels                |
| K-31 Line Drip                | N16-25-6  | N/A       | K31LINEDRIP  | Groundwater              | 14                 | 14             | 21-24 | Benzene above action levels and offsite |

**RECON® Soil-Gas and Groundwater Investigation**  
**El Paso Natural Gas Company Sites**  
**San Juan Basin**  
**Farmington, New Mexico**

| Location Name                                       | U-S-T-R   | Meter<br>No. | Sample I.D. | Sample Matrix            | No. of<br>Probe Holes | No. of<br>Samples | Depth | Comments                                |
|-----------------------------------------------------|-----------|--------------|-------------|--------------------------|-----------------------|-------------------|-------|-----------------------------------------|
| Miles Federal No. 1E                                | N5-26-7   | 94495        | MILES#1E    | Groundwater              | 3                     | 3                 | 24-30 | BTEX below action levels                |
| Elliott Gas Com No. M1                              | I33-30-9  | 73147        | EGC#M1      | Soil-gas                 | 3                     | 12                | 3-12  | BTEX below action levels                |
| Elliott Gas Com No. S1                              | M33-30-9  | 75265        | EGC#S1      | Soil-gas                 | 3                     | 12                | 3-12  | BTEX below action levels                |
| Lindriith B24                                       | N9-24-3   | 94967        | LINDRITHB24 | Groundwater              | 3                     | 3                 | 21-27 | Benzene above action levels and offsite |
| Lindriith B23                                       | D9-24-3   | 74691        | LINDRITHB23 | Groundwater              | 3                     | 3                 | 21-27 | BTEX below action levels                |
| Canaple Gas Com No. 1                               | M18-31-10 | 70714        | CGC#1       | Soil-gas                 | 3                     | 12                | 3-12  | BTEX below action levels                |
| Ohio C Gvt #3                                       | P26-28-11 | 72890        | OCG3        | Soil-gas and Groundwater | 3                     | 3                 | 9-17  | Benzene above action levels and offsite |
| C3 Loop Line Drip                                   | D28-29-9  | N/A          | C3LLD       | Soil-gas                 | 3                     | 12                | 3-12  | BTEX below action levels                |
| San Juan Unit 28-6 #79 PM                           | M11-27-6  | 722654       | SJU28679PPM | Groundwater              | 7                     | 7                 | 30-36 | BTEX above action levels                |
| Hammond 41A                                         | O25-27-8  | 89894        | H41A        | Groundwater              | 9                     | 9                 | 15-23 | BTEX above action levels                |
| U-S-T-R = Unit-Section-Township-Range               |           |              |             |                          |                       |                   |       |                                         |
| BTEX = benzene, toluene, ethyl benzene, and xylenes |           |              |             |                          |                       |                   |       |                                         |

# PHILIP

## Sample Analysis Worksheet

| Sample ID    | Probe Hole Number | Depth (Feet) | Analysis Time | Date     | Injection Vol. (µL) | Multiplier | VAC in. Hg | Comments             |
|--------------|-------------------|--------------|---------------|----------|---------------------|------------|------------|----------------------|
| CGC#1-12     | PH-03             | 12           | 1138          | 12/12/95 | 500                 | 0.2        | 10         | Soil-gas             |
| CGC#1-12-D   | PH-03             | 12           | 1330          | 12/12/95 | 500                 | 0.2        | 10         | QC - Duplicate       |
| CGC#1-12-MS  | PH-03             | 12           | 1355          | 12/12/95 | 500                 | 0.2        | 10         | QC - Matrix Spike    |
| Blank-119    | N/A               | N/A          | 1613          | 12/12/95 | 500                 | 0.2        | N/A        | QC - System Blank    |
| Blank-120    | N/A               | N/A          | 0734          | 12/13/95 | 500                 | 0.2        | N/A        | QC - System Blank    |
| STD-1213     | N/A               | N/A          | 0751          | 12/13/95 | 100                 | 1          | N/A        | Calibration Standard |
| Blank-121    | N/A               | N/A          | 0816          | 12/13/95 | 500                 | 0.2        | N/A        | QC - System Blank    |
| Blank-122    | N/A               | N/A          | 0920          | 12/13/95 | 500                 | 0.2        | N/A        | QC - Probe Rod Blank |
| H41A-07      | PH-07             | 15-24        | 1004          | 12/13/95 | 500                 | 0.2        | N/A        | Groundwater          |
| H41A-08      | PH-08             | 15-24        | 1029          | 12/13/95 | 500                 | 0.2        | N/A        | Groundwater          |
| H41A-09      | PH-09             | 15-24        | 1140          | 12/13/95 | 500                 | 0.2        | N/A        | Groundwater          |
| H41A-09-D    | PH-09             | 15-24        | 1210          | 12/13/95 | 500                 | 0.2        | N/A        | Groundwater          |
| H41A-09-MS   | PH-09             | 15-24        | 1252          | 12/13/95 | 500                 | 0.2        | N/A        | Groundwater          |
| Blank-123    | N/A               | N/A          | 1450          | 12/13/95 | 500                 | 0.2        | N/A        | QC - System Blank    |
| Blank-124    | N/A               | N/A          | 0710          | 12/15/95 | 500                 | 0.2        | N/A        | QC - System Blank    |
| STD-1215     | N/A               | N/A          | 0803          | 12/15/95 | 100                 | 1          | N/A        | Calibration Standard |
| Blank-125    | N/A               | N/A          | 0831          | 12/15/95 | 500                 | 0.2        | N/A        | QC - System Blank    |
| Blank-126    | N/A               | N/A          | 0854          | 12/15/95 | 500                 | 0.2        | N/A        | QC - Probe Rod Blank |
| TRUJILLO-08B | PH-08B            | 6            | 1426          | 12/15/95 | 50                  | 2          | N/A        | Groundwater          |
| TRUJILLO-11B | PH-11B            | 6            | 1621          | 12/15/95 | 50                  | 2          | N/A        | Groundwater          |
| TRUJILLO-09B | PH-09B            | 6            | 1702          | 12/15/95 | 50                  | 2          | N/A        | Groundwater          |
| TRUJILLO-127 | PH-127            | 6            | 1807          | 12/15/95 | 500                 | 0.2        | N/A        | QC - System Blank    |

N/A - not applicable  
QC - quality control  
- duplicate analysis

PHILIP  
1-31-96

# PHILIP

## RECON SAMPLE ANALYSIS DRAFT DATA SUMMARY TABLE Project: 13947

| Sample I.D.    | Probe Hole Number | Depth (feet) | Benzene (ug/L) | Toluene (ug/L) | Ethyl benzene (ug/L) | m+p-Xylene (ug/L) | o-Xylene (ug/L) | Comments             |
|----------------|-------------------|--------------|----------------|----------------|----------------------|-------------------|-----------------|----------------------|
| CGC#1-12       | PH-03             | 12           | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | Soil-gas             |
| CGC#1-12-D     | PH-03             | 12           | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - Duplicate       |
| CGC#1-12-MS    | PH-03             | 12           | <1             | 19             | 17                   | 17                | 19              | QC - Matrix Spike    |
| Blank-119      | N/A               | N/A          | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - System Blank    |
| Blank-120      | N/A               | N/A          | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - System Blank    |
| STD-1213       | N/A               | N/A          | 12             | 705            | 705                  | 706               | 707             | Calibration Standard |
| Blank-121      | N/A               | N/A          | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - System Blank    |
| Blank-122      | N/A               | N/A          | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - Probe Rod Blank |
| H41A-07        | PH-07             | 15-24        | ND(1)          | <1             | ND(1)                | ND(1)             | ND(1)           | Groundwater          |
| H41A-08        | PH-08             | 15-24        | 1              | 6              | <1                   | 3                 | 2               | Groundwater          |
| H41A-09        | PH-09             | 15-24        | 444            | 862            | 78                   | 481               | 176             | Groundwater          |
| H41A-09-D      | PH-09             | 15-24        | 465            | 948            | 89                   | 551               | 207             | Groundwater          |
| H41A-09-MS     | PH-09             | 15-24        | 680            | 1,023          | 272                  | 673               | 367             | Groundwater          |
| Blank-123      | N/A               | N/A          | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - System Blank    |
| Blank-124      | N/A               | N/A          | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - System Blank    |
| STD-1215       | N/A               | N/A          | 12-12-13       | 705            | 705                  | 706               | 707             | Calibration Standard |
| Blank-125      | N/A               | N/A          | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - System Blank    |
| Blank-126      | N/A               | N/A          | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - System Blank    |
| TRUJILLO-08B   | PH-08B            | 6            | ND(1)          | ND(1)          | ND(1)                | 108               | ND(1)           | Groundwater          |
| TRUJILLO-11B   | PH-11B            | 6            | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | Groundwater          |
| TRUJILLO-09B   | PH-09B            | 6            | ND(1) 7        | ND(1)          | ND(1)                | ND(1) 35          | ND(1)           | Groundwater          |
| Blank-127      | N/A               | N/A          | ND(1)          | ND(1)          | ND(1)                | ND(1)             | ND(1)           | QC - System Blank    |
| TRUJILLO-09B-D | PH-09B            | 6            | 6              | ND(1)          | ND(1)                | 29                | ND(1)           | QC - Duplicate       |

D = duplicate analysis.  
QC = quality control.  
ug/L = micrograms of compound detected per liter of soil or groundwater vapor analyzed.  
ND = not detected at the lower quantifiable limit indicated in parenthesis.  
N/A = not applicable.

QA Review: *Paul Spindler*  
Review Date: *1-31-96* *AK 2/1/96*



Industrial Services Group  
Central Region

File: 89894

March 31, 2000

Mr. Scott Pope  
El Paso Field Services Company  
614 Reilly Ave.  
Farmington, New Mexico 87401

**RE: Geologic Logs and Well Completion Diagrams for 1999.**

Dear Mr. Pope:

Please find enclosed the geologic logs and well completion diagrams for work completed in 1999.

If you have any questions or require additional information, please do not hesitate to contact me at (505) 326-2262.

Respectfully submitted,

**PHILIP SERVICES CORPORATION**

A handwritten signature in cursive script that reads "Stephen Stellavato".

Stephen Stellavato  
Geologist

*Combining the Strengths of Philip Services Corp., Allwaste and Serv-Tech*

scottlr

4000 Monroe Road • Farmington, NM 87401 • (505) 326-2262 • Fax (505) 326-2388



# RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Albuquerque, New Mexico 87401

505-228-2282 FAX (505) 326-2388

Borehole #

Well #

Page

1

MW 2

1 of 2

Project Name

Project Number

Project Location

PPES GROUNDWATER

62800018

Phase

HAMMOND HIA

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

C. CULLICOTT

R. PADILLA & D. PADILLA

Drilling Method

Air Monitoring Method

AUGER

PID

Location

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

T27N R28W S25 0

15.25'

C. CULLICOTT

R. PADILLA & D. PADILLA

9/10/99 10am

9/10/99

MPLC 89894

| Depth<br>(Feet) | Sample<br>Interval | Sample<br>Type &<br>Recovery<br>(Inches) | Sample Description<br>Classification System: USCS                                                                                                                                     | USCS<br>Symbol | Depth<br>Lithology<br>Change<br>(feet) | Air Monitoring<br>Units: NDU |    |   | Drilling Conditions<br>& Blow Counts |
|-----------------|--------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------------|------------------------------|----|---|--------------------------------------|
|                 |                    |                                          |                                                                                                                                                                                       |                |                                        | BZ                           | BH | S |                                      |
| 0               |                    |                                          |                                                                                                                                                                                       |                |                                        |                              |    |   |                                      |
| 5               | ① 5-7'             |                                          | ① POOR RECOVERY ~ 3"<br>CONSOLIDATED BROWN<br>SILT W/ TREE ROOTS &<br>CALICHE. CLEAN.                                                                                                 |                |                                        |                              |    |   | ① 14 BLOWS<br>SS 0.0 ppm             |
| 10              | ② 10-12'           |                                          | ② FULL RECOVERY<br>10-10 1/2' - LOOSE BROWN FINE<br>SAND. 10 1/2' - VII' BROWN<br>SILTY SAND, STIFFER<br>THAN ABOVE. REST<br>LOOSE FINE TO MED<br>SAND. ALL OLY. NO<br>STAIN OR ODOR. |                |                                        |                              |    |   | ② 24 BLOWS<br>SS 0.0 ppm             |
| 15              | ③ 15-17'           |                                          | ③ FULL RECOVERY.<br>FINE SAND, WATER<br>SATURATED. UNIFORM<br>CLEAN.                                                                                                                  |                |                                        |                              |    |   | ③ 9 BLOWS<br>SS 0.0 ppm              |
| 20              |                    |                                          |                                                                                                                                                                                       |                |                                        |                              |    |   |                                      |
| 25              |                    |                                          |                                                                                                                                                                                       |                |                                        |                              |    |   |                                      |
| 30              |                    |                                          | 15'-25' SAND WITH<br>SLIGHTLY MORE CLAY<br>CONTENT THAN #3.                                                                                                                           |                |                                        |                              |    |   |                                      |
| 35              |                    |                                          | T.D. 25'                                                                                                                                                                              |                |                                        |                              |    |   |                                      |
| 40              |                    |                                          |                                                                                                                                                                                       |                |                                        |                              |    |   |                                      |

T27-R8

89894

Comments:

SUNNY, BREEZY, WARM

DTW 14.3' IN MW 1

Geologist Signature

Cathy Cullcott

# MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.

10000 Road

New Mexico 87401

505/326-2262 FAX (505) 326-2388

Borehole # 1

Well # MW2

Page 2 of 2

Project Name EPFS GROUNDWATER

Project Number 62800018 Phase

Project Location HAMMOND 41A

On-Site Geologist C. CULLICOTT

Personnel On-Site K. PADILLA & D. PADILLA

Contractors On-Site Ø

Client Personnel On-Site Ø

Elevation

Well Location

EWL Depth 15.25'

Installed By K. PADILLA & D. PADILLA

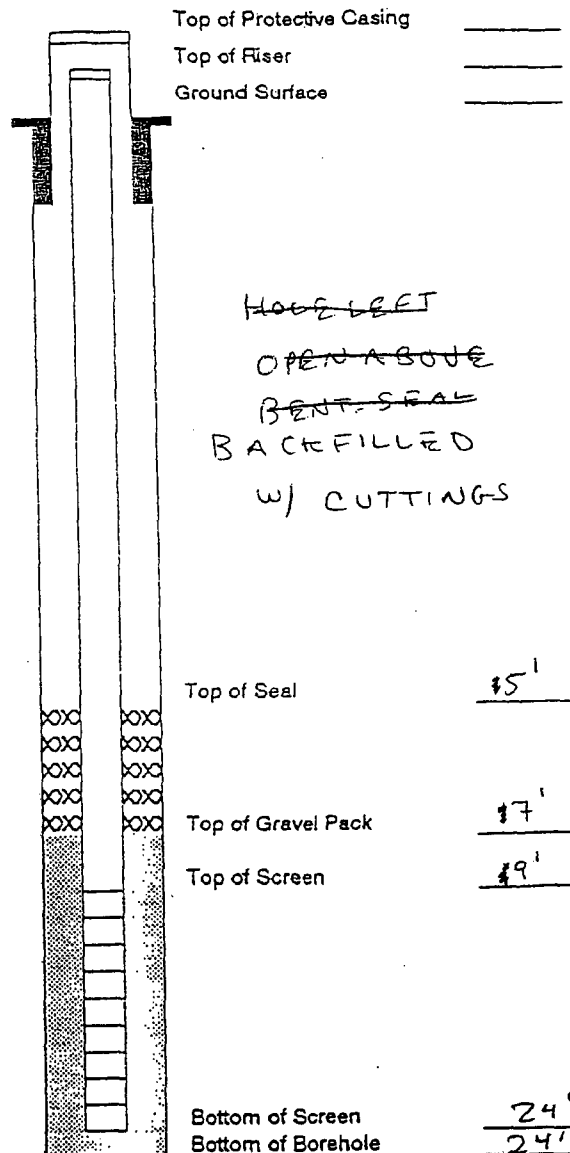
Date/Time Started 9/10/99 10am

Date/Time Completed 9/10/99 12:10pm

meter 89894

## Depths in Reference to Ground Surface

| Item                                | Material | Depth |
|-------------------------------------|----------|-------|
| Top of Protective Casing            |          |       |
| Bottom of Protective Casing         |          |       |
| Top of Permanent Borehole Casing    |          |       |
| Bottom of Permanent Borehole Casing |          |       |
| Top of Concrete                     |          |       |
| Bottom of Concrete                  |          |       |
| Top of Grout                        |          |       |
| Bottom of Grout                     |          |       |
| Top of Well Riser                   | 2"       | +1'   |
| Bottom of Well Riser                | 2"       | 17'   |
| Top of Well Screen                  | 2"       | 19'   |
| Bottom of Well Screen               | 2"       | 24'   |
| Top of Peltonite Seal               | BENT.    | 15'   |
| Bottom of Peltonite Seal            | CHIPS    | 17'   |
| Top of Gravel Pack                  | CO SAND  | 17'   |
| Bottom of Gravel Pack               | CO SAND  | 24'   |
| Top of Natural Cave-In              |          |       |
| Bottom of Natural Cave-In           |          |       |
| Top of Groundwater                  |          |       |
| Total Depth of Borehole             |          | 24'   |



Comments: WELL DRAILED TO 25'. AUGER FILLED WITH INFLOWING SAND, ABLE TO GET PIPE TO ~24' TO SEE WELL

Well Developed w/ 7 gallons removed, 1:05-1:30pm WATER

Geologist Signature

Cathy Cullicott

LEVEL AFTER PURGING IS WITHIN

1/10' OF LEVEL BEFORE PURGE EXCELLENT PRODUCER

WATER IS TURBID, BUT HAS NO OBVIOUS ODOOR.

# RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Albuquerque, New Mexico 87401

TE-2282 FAX (505) 328-2388

Borehole #

Well #

Page

2  
MW3  
1 of 2

Project Name

Project Number

Project Location

EPFS G-W  
02800018 Phase  
HAMMOND HIA

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

C. CULLICOTT  
K. PADILLA & D. PADILLA  
0  
0

Drilling Method

Air Monitoring Method

AUGER  
PID

Location

Borehole Location T27N R8W S25O

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

13.15'  
C. CULLICOTT  
K. PADILLA & D. PADILLA  
9/10/99 12:15 PM  
9/10/99 1:45 PM  
MATE 89834

| Depth (Feet) | Sample Interval | Sample Type & Recovery (Inches) | Sample Description<br>Classification System: USCS                                                                                                                         | USCS Symbol | Depth Lithology Change (feet) | Air Monitoring<br>Units: NDU<br>BZ BH S |  |  | Drilling Conditions & Blow Counts |
|--------------|-----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------|-----------------------------------------|--|--|-----------------------------------|
| 0            |                 |                                 |                                                                                                                                                                           |             |                               |                                         |  |  |                                   |
| 5            | ① 5-7           |                                 | ① 12" RECOVERY<br>6" STIFF BROWN SANDY SILT WITH VISIBLE LAYERING. THEN 6" OF LOOSE, FINE SAND. BOTH ARE BROWN, DRY, & CLEAN.                                             |             |                               |                                         |  |  | ① 45 BLOWS<br>SS 0.0 ppm          |
| 10           | ② 10-12         |                                 | ② FULL RECOVERY<br>UPPER 6" STIFF BROWN SILT. THEN 12" FINE TO MEDIUM SAND, LOOSE BOTTOM 6" STIFF BROWN CLAYEY SILT, DAMP, w/ TREE ROOTS & PIECES OF WOOD. ALL ARE CLEAN. |             |                               |                                         |  |  | ② 32 BLOWS<br>SS 0.0 ppm          |
| 15           | ③ 15-17         |                                 | ③ WATER SATURATED FINE TO MEDIUM SAND, GRAY, CLEAN. Higher % fine sand @ TOP OF SPOON, COARSENS downward.                                                                 |             |                               |                                         |  |  | ③ 9 BLOWS<br>SS 0.0 ppm           |
| 20           |                 |                                 |                                                                                                                                                                           |             |                               |                                         |  |  |                                   |
| 25           |                 |                                 |                                                                                                                                                                           |             |                               |                                         |  |  |                                   |
| 30           |                 |                                 |                                                                                                                                                                           |             |                               |                                         |  |  |                                   |
| 35           |                 |                                 |                                                                                                                                                                           |             |                               |                                         |  |  |                                   |
| 40           |                 |                                 | TD 25'                                                                                                                                                                    |             |                               |                                         |  |  |                                   |

Comments:

SUNNY, BREEZY, WARM

Geologist Signature

Cathy Cullcott

# MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.

1000 Road

New Mexico 87401

505-326-2262 FAX (505) 326-2388

Borehole # 2

Well # MW3

Page 2 of 2

Project Name EPFS.GW

Project Number 02800018 Phase

Project Location HAMMOND 41A

On-Site Geologist C. CULLICOTT

Personnel On-Site F. PADILLA & D. PADILLA

Contractors On-Site

Client Personnel On-Site

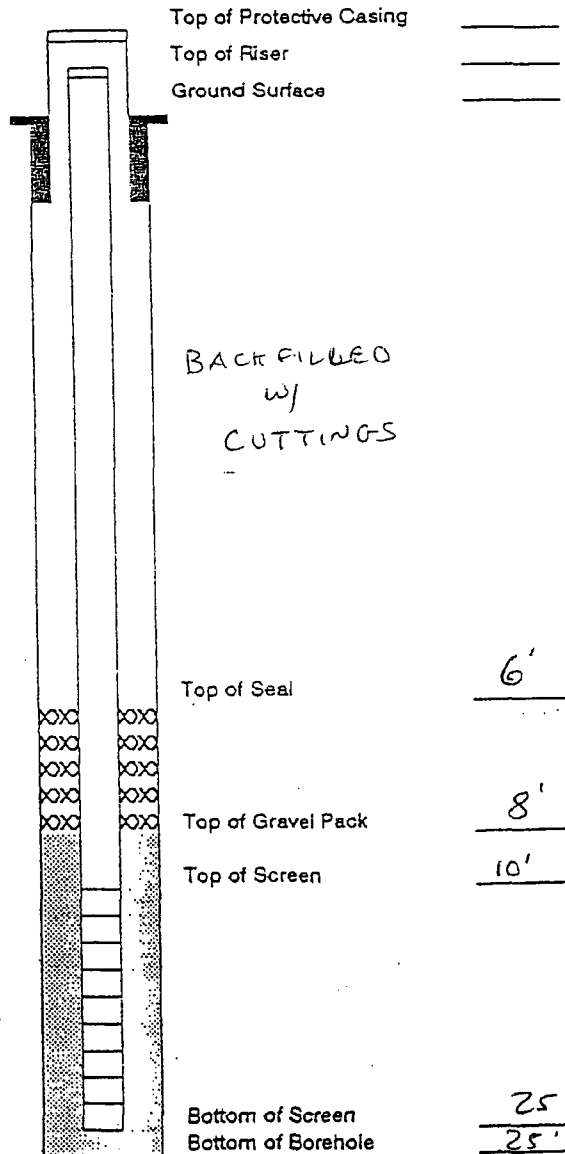
Elevation   
Well Location T27N R8W S25 O  
Well Depth 13.15'  
Installed By F. PADILLA & D. PADILLA

Date/Time Started 9/10/99 12:15pm

Date/Time Completed 9/10/99 1:45pm

meter 89894

| Depths in Reference to Ground Surface |          |       |                          |  |
|---------------------------------------|----------|-------|--------------------------|--|
| Item                                  | Material | Depth |                          |  |
| Top of Protective Casing              |          |       | Top of Protective Casing |  |
| Bottom of Protective Casing           |          |       | Top of Riser             |  |
| Top of Permanent Borehole Casing      |          |       | Ground Surface           |  |
| Bottom of Permanent Borehole Casing   |          |       |                          |  |
| Top of Concrete                       |          |       |                          |  |
| Bottom of Concrete                    |          |       |                          |  |
| Top of Grout                          |          |       |                          |  |
| Bottom of Grout                       |          |       |                          |  |
| Top of Well Riser                     | 2"       | +1    |                          |  |
| Bottom of Well Riser                  | 2"       | 10'   |                          |  |
| Top of Well Screen                    | 2"       | 10'   |                          |  |
| Bottom of Well Screen                 | 2"       | 25'   |                          |  |
| Top of Peltonite Seal                 | BENT     | 6'    |                          |  |
| Bottom of Peltonite Seal              | CHIPS    | 8'    |                          |  |
| Top of Gravel Pack                    | CO       | 8'    |                          |  |
| Bottom of Gravel Pack                 | SAND     | 25'   |                          |  |
| Top of Natural Cave-In                |          |       |                          |  |
| Bottom of Natural Cave-In             |          |       |                          |  |
| Top of Groundwater                    |          |       |                          |  |
| Total Depth of Borehole               |          | 25'   |                          |  |



Remarks: 79 gallons bailed 1:55-2:15pm DTW AFTER PURGING  
14.20' WATER IS TURBID BUT HAS NO ODOR.

Geologist Signature

Cathy Cullicott

# RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-1  
 Well # MW-1  
 Page 1 of       

## PHILIP ENVIRONMENTAL SERVICES INC.

4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

Project Name EPFS GW PITS  
 Project Number 17520 Phase 6001  
 Project Location Hammend 41A 89894

Elevation                       
 Borehole Location T27-R8-S25-LtrO  
 GWL Depth                       
 Logged By CM CHANCE  
 Drilled By K Padilla  
 Date/Time Started 5/5/97-1000  
 Date/Time Completed 5/5/97-1100

Well Logged By CM CHANCE  
 Personnel On-Site D CHARLEY  
 Contractors On-Site                       
 Client Personnel On-Site                       
 Drilling Method 1/4 ID HSA  
 Air Monitoring Method PID

| Depth<br>(Feet) | Sample<br>Number | Sample<br>Interval | Sample<br>Type &<br>Recovery<br>(inches) | Sample Description<br>Classification System: USCS | USCS<br>Symbol | Depth<br>Lithology<br>Change<br>(feet) | Air Monitoring<br>Units: PPM |    |   | Drilling Conditions<br>& Blow Counts |
|-----------------|------------------|--------------------|------------------------------------------|---------------------------------------------------|----------------|----------------------------------------|------------------------------|----|---|--------------------------------------|
|                 |                  |                    |                                          |                                                   |                |                                        | BZ                           | BH | S |                                      |
| 0               |                  |                    |                                          |                                                   |                |                                        |                              |    |   |                                      |
| 5               |                  |                    |                                          |                                                   |                |                                        |                              |    |   |                                      |
| 10              |                  |                    |                                          |                                                   |                |                                        |                              |    |   |                                      |
| 15              |                  |                    |                                          | BACKFILL to 19'                                   |                |                                        |                              |    |   | -GW@16.1' BG                         |
| 20              |                  |                    |                                          | Gry saturated clayey SAND                         |                |                                        |                              |    |   |                                      |
| 25              |                  |                    |                                          |                                                   |                |                                        |                              |    |   |                                      |
| 30              |                  |                    |                                          | TOB26'                                            |                |                                        |                              |    |   |                                      |
| 35              |                  |                    |                                          |                                                   |                |                                        |                              |    |   |                                      |
| 40              |                  |                    |                                          |                                                   |                |                                        |                              |    |   |                                      |

Comments:

No samples collected. Backfill to GW. Will drill to 26' & set well.  
Slight hydrocarbon odor on EWLT.

Geologist Signature

CM Chance

# MONITORING WELL INSTALLATION RECORD

Philip Environmental Services, Inc.

4900 Monroe Rd.

Farmington, NM 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # BH-1

Well # MW-1

Page 1 of 1

Project Name EPFS GW

Project Number 17520

Phase 6002

Site Location Hammond 4/A 89894

On-Site Geologist

CM CHANCE

Personnel On-Site

D CHARLEY

Contractors On-Site

Client Personnel On-Site

Elevation

Well Location T27S25 R8 LTRD

GWL Depth 16.3' BGS

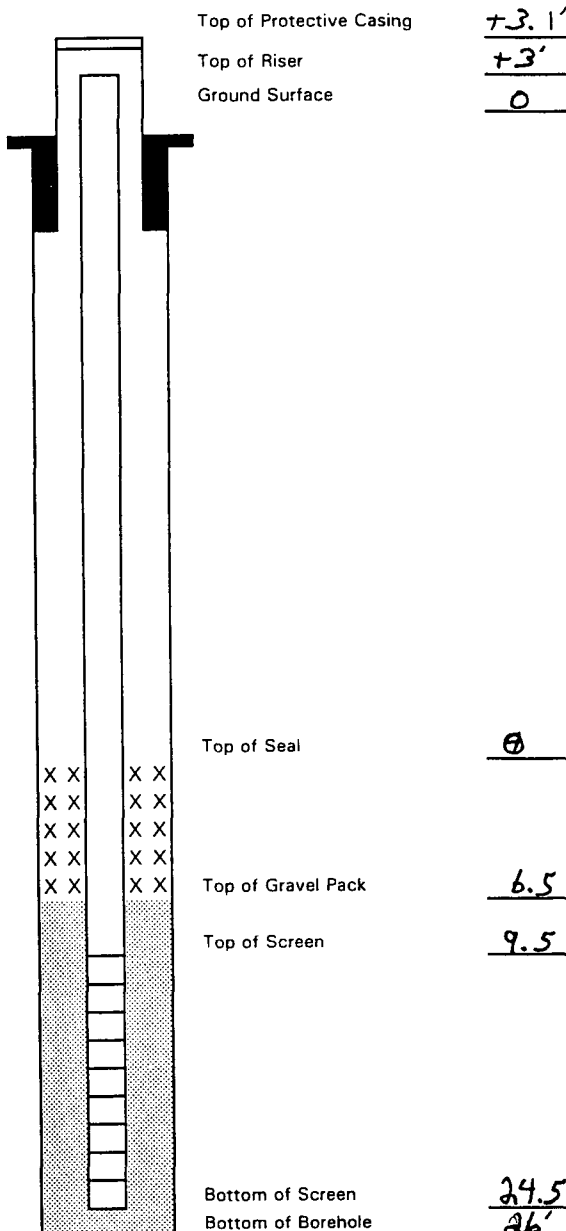
Installed By K Padilla

Date/Time Started 5/5/97 - 1100

Date/Time Completed 5/5/97 - 1220

## Depths in Reference to Ground Surface

| Item                                | Material                  | Depth (feet) |
|-------------------------------------|---------------------------|--------------|
| Top of Protective Casing            | 8" steel well vault       | +3.1'        |
| Bottom of Protective Casing         |                           | 2.0'         |
| Top of Permanent Borehole Casing    |                           | N/A          |
| Bottom of Permanent Borehole Casing |                           | N/A          |
| Top of Concrete                     |                           | N/A          |
| Bottom of Concrete                  |                           | N/A          |
| Top of Grout                        | Type I/II Portland cement | N/A          |
| Bottom of Grout                     | Powder Bentonite          | N/A          |
| Top of Well Riser                   | 4" SCH 40 PVC             | +3'          |
| Bottom of Well Riser                | FLUSH THREAD              | 9.5'         |
| Top of Well Screen                  | 4" SCH 40 PVC             | 9.5'         |
| Bottom of Well Screen               | 0.01 SLOT FLUSH THREAD    | 24.5'        |
| Top of Peltonite Seal               | ENVIROPLUG                | 6.5'         |
| Bottom of Peltonite Seal            |                           | 9.5'         |
| Top of Gravel Pack                  | 10-20 SILICA SAND         | 9.5'         |
| Bottom of Gravel Pack               |                           | 24.5'        |
| Top of Natural Cave-In              |                           | 24.5'        |
| Bottom of Natural Cave-In           |                           | 26'          |
| Top of Groundwater                  |                           | 16.3'        |
| Total Depth of Borehole             |                           | 26'          |



Comments: Bent. seal hydrated w/ 10 gal potable water. Hydrocarbon odor on FWLT.

*CM Chance*

# PHASE III

594-2261

## FIELD PIT REMEDIATION/CLOSURE FORM/PHASE II

GENERAL

Meter: 88894 Location: Hammond #41-A

Coordinates: Letter: 0 Section 25 Township: 27 Range: 8

Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

Date Started : 2-25-97 Area: 07 Run: 51

FIELD OBSERVATIONS

Sample Number(s): MK583

Sample Depth: 19' Feet

Final PID Reading 40 PPM PID Reading Depth 19' Feet  
Yes No

Groundwater Encountered ☒ (1) ☐ (2) Approximate Depth 19' Feet

Final Dimensions: Length 55' Width 50' Depth 19'

CLOSURE

Remediation Method :

Excavation ☒ (1) Approx. Cubic Yards 1140 1194

Onsite Bioremediation ☐ (2)

Backfill Pit Without Excavation ☐ (3)

Overburden Cubic Yards 424 CVYd

Soil Disposition:

Envirotech ☒ (1) ☐ (3) Tierra

Other Facility ☐ (2) Name: \_\_\_\_\_

Pit Closure Date: 3-28-97

Pit Closed By: Philip Enuabason

REMARKS

Remarks : we started digging overburden hit contaminated soil at  
12' dug to 15' it water pit appeared clean at water level  
soil was black after awhile soil look clean but had very HZ pld

Reading Final Reading were N-well 52 PPM S-well 79 PPM W-well 28 PPM  
E-well 54 PPM Bottom 17 PPM composite 40 PPM used 1 1/2 yellow Hydrogen Peroxide  
30%

Signature of Specialist: Morgan Killion



4000 Monroe Road  
Farmington, New Mexico 87401  
PH: (505) 326-2262 • FAX: (505) 326-2388

**DATE:** Friday, April 04, 1997

**TIME:** 12:58 PM

**TO:** Marla  
**COMPANY:** EPFS

**PHONE:**  
**FAX:** 599-2261

**FROM:** Cory Chance

**PHONE:** (505) 326-2262  
**FAX:** (505) 326-2388

**RE:** Closure Form Hammond 41A

**PROJECT NO:** 17764

Number of pages including cover: 2

☐ Hard copy **WILL NOT** follow ❖ ☐ Hard copy **WILL** follow

## **M E S S A G E**

Marla

Attached is a corrected closure form. Total cubic yards excavated was 1194 and we originally put down 1140. Call if you have any questions.

Cory

### **CONFIDENTIALITY CAUTION**

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# **f a x      T R A N S M I S S I O N**

PHASE III

FIELD PIT REMEDIATION/CLOSURE FORM/PHASE II

GENERAL

Meter: 88894 Location: Hammond #41-A

Coordinates: Letter: 0 Section 25 Township: 27 Range: 8

Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

Date Started : 3-25-97 Area: 07 Run: 51

FIELD OBSERVATIONS

Sample Number(s): MK583

Sample Depth: 19' Feet

Final PID Reading 40 PPM PID Reading Depth 19' Feet  
Yes No

Groundwater Encountered ☒ (1) ☐ (2) Approximate Depth 19' Feet

Final Dimensions: Length 55' Width 50' Depth 19'

CLOSURE

Remediation Method :

Excavation ☒ (1) Approx. Cubic Yards 1140

Onsite Bioremediation ☐ (2)

Backfill Pit Without Excavation ☐ (3)

Overburden Cubic Yards 424 CY

Soil Disposition:

Envirotech ☒ (1) ☐ (3) Tierra

Other Facility ☐ (2) Name: \_\_\_\_\_

Pit Closure Date: 3-28-97

Pit Closed By: Philip EnuRocore

REMARKS

Remarks : we started digging overburden hit contaminated soil at 12' dug to 19' it water appeared pit appeared clean at water level soil was black after awhile soil took clean but had very HI PID

Reading Final Reading were N-well 52 PPM S-well 79 PPM W-well 28 PPM E-well 54 PPM Bottom 17 PPM composite 40 PPM used 1 1/2 gallon Hydrogen Peroxide 30%

Signature of Specialist: Morgan Killion



Phase I Excavation

CHAIN OF CUSTODY RECORD

Page \_\_\_\_\_ of \_\_\_\_\_

| PROJECT NUMBER<br># 24324                                                                    |        | PROJECT NAME<br>Pit Closure Project |         | DATE:<br>3-26-97                        |      | TOTAL NUMBERS<br>OF CONTAINERS |      | SAMPLE<br>TYPE                                                                                             |       | REQUESTED ANALYSIS                          |    |                          |   | CONTRACT LABORATORY P. O. NUMBER           |   |            |    |            |                     |
|----------------------------------------------------------------------------------------------|--------|-------------------------------------|---------|-----------------------------------------|------|--------------------------------|------|------------------------------------------------------------------------------------------------------------|-------|---------------------------------------------|----|--------------------------|---|--------------------------------------------|---|------------|----|------------|---------------------|
| SAMPLERS: (Signature)<br>Morgan Killian                                                      |        | DATE<br>3-26-97                     |         | FIELD ID<br>MK583                       |      | MATRIX<br>soil                 |      | TIME<br>1130                                                                                               |       | TPH<br>EPA 418.1                            |    | BTEX<br>EPA 8020         |   | LAB PID                                    |   | SEQUENCE # |    | REMARKS    |                     |
| LAB ID                                                                                       | 970228 | DATE                                | 3-26-97 | TIME                                    | 1130 | MATRIX                         | soil | FIELD ID                                                                                                   | MK583 | SAMPLE TYPE                                 | VC | TPH<br>EPA 418.1         | X | BTEX<br>EPA 8020                           | X | LAB PID    | 67 | SEQUENCE # | Hammond #41-A 89894 |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
|                                                                                              |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |
| RELINQUISHED BY: (Signature)<br>Morgan Killian                                               |        | DATE/TIME<br>3-26-97 1920           |         | RECEIVED BY: (Signature)<br>Danni Deane |      | DATE/TIME<br>4-1-97 1200       |      | RECEIVED BY: (Signature)<br>Morgan Killian                                                                 |       | RELINQUISHED BY: (Signature)<br>Danni Deane |    | DATE/TIME<br>4-1-97 1200 |   | RECEIVED BY: (Signature)<br>Morgan Killian |   |            |    |            |                     |
| REQUESTED TURNAROUND TIME:<br><input type="checkbox"/> ROUTINE <input type="checkbox"/> RUSH |        | DATE/TIME                           |         | RECEIVED BY: (Signature)                |      | DATE/TIME                      |      | RECEIVED BY: (Signature)                                                                                   |       | RELINQUISHED BY: (Signature)                |    | DATE/TIME                |   | RECEIVED BY: (Signature)                   |   |            |    |            |                     |
| CARRIER CO.                                                                                  |        | SAMPLE RECEIPT REMARKS              |         | CHARGE CODE                             |      | RESULTS & INVOICES TO:         |      | FIELD SERVICES LABORATORY<br>EL PASO NATURAL GAS COMPANY<br>P. O. BOX 4990<br>FARMINGTON, NEW MEXICO 87499 |       | 505-599-2144                                |    | FAX: 505-599-2261        |   |                                            |   |            |    |            |                     |
| BILL NO.:                                                                                    |        |                                     |         |                                         |      |                                |      |                                                                                                            |       |                                             |    |                          |   |                                            |   |            |    |            |                     |



4-15-97

**FIELD SERVICES LABORATORY  
ANALYTICAL REPORT  
PIT CLOSURE PROJECT****SAMPLE IDENTIFICATION**

|                            |                                       |               |
|----------------------------|---------------------------------------|---------------|
|                            | Field ID                              | Lab ID        |
| SAMPLE NUMBER:             | <b>MK583</b>                          | 970228        |
| MTR CODE   SITE NAME:      | 89894                                 | Hammond #41-A |
| SAMPLE DATE   TIME (Hrs):  | 3/26/97                               | 1130          |
| PROJECT:                   | PHASE III - Excavation <i>4-15-97</i> |               |
| DATE OF TPH EXT.   ANAL.:  | 3/31/97                               | 3/31/97       |
| DATE OF BTEX EXT.   ANAL.: | 4/7/97                                | 4/7/97        |
| TYPE   DESCRIPTION:        | VC                                    | Brown sand    |

Field Remarks: \_\_\_\_\_

**RESULTS**

| PARAMETER      | RESULT | UNITS | QUALIFIERS |   |      |       |
|----------------|--------|-------|------------|---|------|-------|
|                |        |       | DF         | Q | M(g) | V(ml) |
| BENZENE        | <0.5   | MG/KG |            |   |      |       |
| TOLUENE        | <0.5   | MG/KG |            |   |      |       |
| ETHYL BENZENE  | <0.5   | MG/KG |            |   |      |       |
| TOTAL XYLENES  | <1.5   | MG/KG |            |   |      |       |
| TOTAL BTEX     | <3     | MG/KG |            |   |      |       |
| TPH (418.1)    | <10    | MG/KG |            |   | 2.46 | 28    |
| HEADSPACE PID  | 40     | PPM   |            |   |      |       |
| PERCENT SOLIDS | 91.0   | %     |            |   |      |       |

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 102 for this sample All QA/QC was acceptable.  
Narrative: \_\_\_\_\_

DF = Dilution Factor Used

Approved By: \_\_\_\_\_

INGVZPIT.XLS

Date: \_\_\_\_\_

4/9/97

## EL PASO FIELD SERVICES LABORATORY

## EPA METHOD 8020 - BTEX

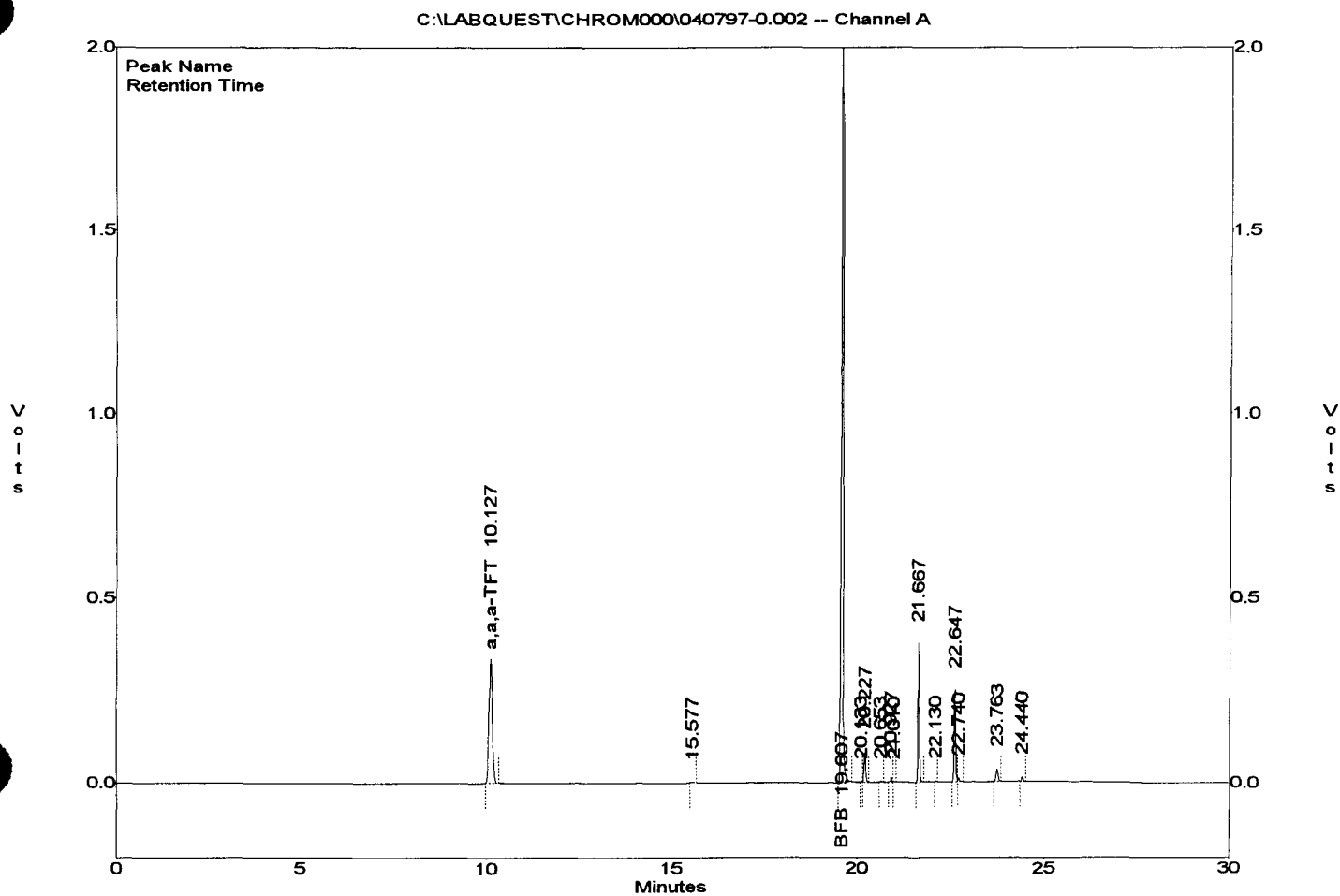
File : C:\LABQUEST\CHROM000\040797-0.002  
 Method : C:\LABQUEST\METHODS\0-013197.MET  
 Sample ID : 970228,5.00G,50U  
 Acquired : Apr 07, 1997 13:34:45  
 Printed : Apr 07, 1997 14:05:11  
 User : MARLON

## Channel A Results

| COMPONENT    | RET TIME | AREA    | CONC (ug/L) |
|--------------|----------|---------|-------------|
| BENZENE      | 7.820    | 0       | 0.0000      |
| a,a,a-TFT    | 10.127   | 2178058 | 99.6062     |
| TOLUENE      | 12.470   | 0       | 0.0000      |
| ETHYLBENZENE | 16.670   | 0       | 0.0000      |
| M,P-XYLENES  | 17.050   | 0       | 0.0000      |
| O-XYLENE     | 18.250   | 0       | 0.0000      |
| BFB          | 19.607   | 8337265 | 101.6819    |

## Channel A Group Results

| COMPONENT     | RET TIME | AREA | CONC (ug/L) |
|---------------|----------|------|-------------|
| TOTAL XYLENES |          | 0    | 0.0000      |



```

*****
*                               *
*       Test Method for         *
* Oil and Grease and Petroleum Hydrocarbons *
*       in Water and Soil      *
*                               *
*       Perkin-Elmer Model 1600 FT-IR      *
*       Analysis Report         *
*                               *
*****

```

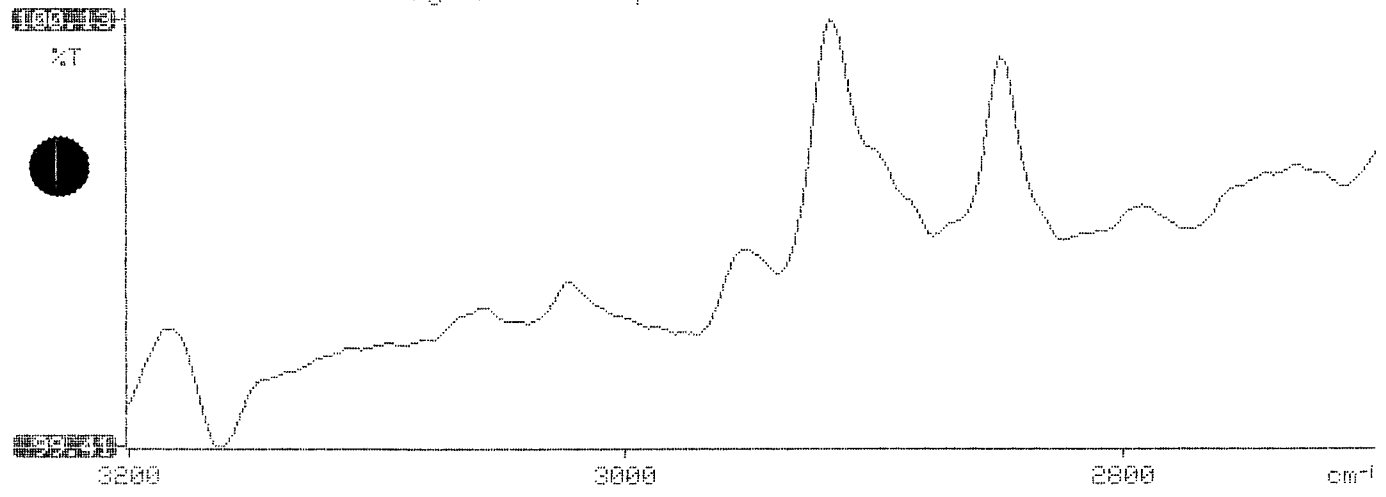
```

* 97/03/31 16:46
*
* Sample identification
* 970228
*
* Initial mass of sample, g
* 2.460
*
* Volume of sample after extraction, ml
* 28.000
*
* Petroleum hydrocarbons, ppm
* -8.839
* Net absorbance of hydrocarbons (2930 cm-1)
* 0.000
*
*
*

```

Y: Petroleum hydrocarbons spectrum

16:46



# BTEX SOIL SAMPLE WORKSHEET

File : 970228  
Soil Mass (g) : 5.00  
Extraction vol. (mL) : 10  
Shot Volume (uL) : 50

Date Printed : 4/9/97  
Multiplier (L/g) : 0.00100  
CAL FACTOR (Analytical): 200  
CAL FACTOR (Report): 0.20000

|                       |      | DILUTION FACTOR:       | 1     | Det. Limit |
|-----------------------|------|------------------------|-------|------------|
| Benzene (ug/L) :      | 0.00 | Benzene (mg/Kg):       | 0.000 | 0.500      |
| Toluene (ug/L) :      | 0.00 | Toluene (mg/Kg):       | 0.000 | 0.500      |
| Ethylbenzene (ug/L) : | 0.00 | Ethylbenzene (mg/Kg):  | 0.000 | 0.500      |
| p & m-xylene (ug/L) : | 0.00 | p & m-xylene (mg/Kg):  | 0.000 | 1.000      |
| o-xylene (ug/L) :     | 0.00 | o-xylene (mg/Kg):      | 0.000 | 0.500      |
|                       |      | Total xylenes (mg/Kg): | 0.000 | 1.500      |
|                       |      | Total BTEX (mg/Kg):    | 0.000 |            |

# NUTRIENT INJECTION

## PHILIP SERVICES CORP.

4000 Monroe Rd.

Farmington, NM 87401

(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GLW PITS  
Project Number/Phase 17520 9000  
Driller K. Padilla  
Date/Time Started 7/9/98  
Date/Time Completed 7/9/98

BH # 1  
BH Location S. of MW1  
Site Name Hammond 4/A 89894

### BOREHOLE

Ground Surface →

Top of Grout 0'

Cement/Bentonite Grout  
(5%Bentonite) →

Top of Bentonite 13'

Bentonite Seal →

Top of Slurry 15'

ORC Slurry →

Top of Groundwater 16'

Depth of Borehole 22'

Comments: 60 pounds ORC 10 gal water. Seal hydrated w/ 5 gal  
potable water

Drillers/Geologist Signature

Cory Chancy

# NUTRIENT INJECTION

## PHILIP SERVICES CORP.

4000 Monroe Rd.

Farmington, NM 87401

(505) 326-2262 FAX (505) 326-2388

|                      |                     |             |                          |
|----------------------|---------------------|-------------|--------------------------|
| Project Name         | <u>EPES GW PITS</u> | BH #        | <u>2</u>                 |
| Project Number/Phase | <u>17520 9000</u>   | BH Location | <u>SE of MW 1</u>        |
| Driller              | <u>K Padilla</u>    | Site Name   | <u>Hammond 4/A 89894</u> |
| Date/Time Started    | <u>7/9/98</u>       |             |                          |
| Date/Time Completed  | <u>7/9/98</u>       |             |                          |

### BOREHOLE

Ground Surface →

Top of Grout 0'

Cement/Bentonite Grout  
(5% Bentonite) →

Top of Bentonite 12'

Bentonite Seal →

Top of Slurry 15'

ORC Slurry →

Top of Groundwater 16'

Depth of Borehole 22'

Comments: 60 pounds ORC 10 gallons water. Seal hydrated w/ 5 gal  
potable water

Drillers/Geologist Signature

Cory Chaney

# NUTRIENT INJECTION

## PHILIP SERVICES CORP.

4000 Monroe Rd.

Farmington, NM 87401

(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GW PITS  
Project Number/Phase 17520, 9000  
Driller K Padilla  
Date/Time Started 7/9/98  
Date/Time Completed 7/9/98

BH # 3  
BH Location E. of MW1  
Site Name Hammond 4/A 89894

### BOREHOLE

Ground Surface →

Top of Grout 0

Cement/Bentonite Grout  
(5% Bentonite) →

Top of Bentonite 13'

Bentonite Seal →

Top of Slurry 15'

ORC Slurry →

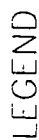
Top of Groundwater 16'

Depth of Borehole 22'

Comments: 50 pounds DRC 10 gal water Seal hydrated w/ 5 gal  
potable water

Drillers/Geologist Signature

Cory Chavez



- DRC Location NOT

|                                       |       |         |       |    |                    |
|---------------------------------------|-------|---------|-------|----|--------------------|
| TITLE:<br>HAMMOND 41 A<br>METER 89894 | DWN:  | TMM     | DES.: | CC | PROJECT NO.: 17520 |
|                                       | CHKD: | CC      | APPD: |    |                    |
|                                       | DATE: | 1/20/98 | REV.: | 0  | FIGURE 1           |
|                                       |       |         |       |    |                    |

FIGURE 1

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

# APCL Analytical Report

Submitted to:  
Montgomery Watson Harza  
Attention: Brian Buttars  
10619 South Jordan Gateway  
Salt Lake City UT 84095  
Tel: (801)617-3200 Fax: (801)617-4200

Service ID #: 801-025368  
Collected by: Ashley Lowe  
Collected on: 10/08/02  
Sample Description: Water  
Project Description: 220013 San Juan River Plant

Received: 10/10/02  
Extracted: N/A  
Tested: 10/14/02  
Reported: 10/16/02

## Analysis of Water Samples

| Component Analyzed | Method | Unit | PQL | Analysis Result |                  |            |
|--------------------|--------|------|-----|-----------------|------------------|------------|
|                    |        |      |     | MW-1 K-31       | MW-2 Hammond 41A | MW-2 K-31  |
|                    |        |      |     | 02-05368-1      | 02-05368-2       | 02-05368-3 |
| BTXE               |        |      |     |                 |                  |            |
| Dilution Factor    |        |      |     | 1               | 1                | 1          |
| BENZENE            | 8021B  | µg/L | 0.5 | 0.6             | <0.5             | 104        |
| ETHYLBENZENE       | 8021B  | µg/L | 0.5 | <0.5            | <0.5             | 2.3        |
| TOLUENE            | 8021B  | µg/L | 0.5 | <0.5            | <0.5             | 1.6        |
| O-XYLENE           | 8021B  | µg/L | 0.5 | 0.8             | <0.5             | 1          |
| M,P-XYLENE         | 8021B  | µg/L | 1   | 0.5J            | 0.5J             | 0.6J       |

| Component Analyzed | Method | Unit | PQL | Analysis Result            |                                |                          |
|--------------------|--------|------|-----|----------------------------|--------------------------------|--------------------------|
|                    |        |      |     | MW-3 GWDLoop<br>02-05368-4 | MW-3 Hammond 41A<br>02-05368-5 | TB02100801<br>02-05368-6 |
| BTXE               |        |      |     |                            |                                |                          |
| Dilution Factor    |        |      |     | 1                          | 1                              | 1                        |
| BENZENE            | 8021B  | µg/L | 0.5 | 4.9                        | <0.5                           | <0.5                     |
| ETHYLBENZENE       | 8021B  | µg/L | 0.5 | 1.6                        | <0.5                           | 0.9                      |
| TOLUENE            | 8021B  | µg/L | 0.5 | 0.5J                       | <0.5                           | <0.5                     |
| O-XYLENE           | 8021B  | µg/L | 0.5 | 0.7                        | <0.5                           | 0.4J                     |
| M,P-XYLENE         | 8021B  | µg/L | 1   | 0.7J                       | 0.6J                           | 1                        |

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

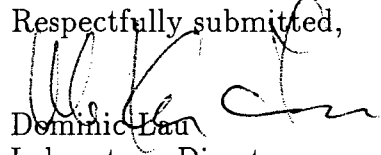
N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

  
Dominic Lau  
Laboratory Director  
Applied P & Ch Laboratory



Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:

Montgomery Watson Harza

Attention: Brian Buttars

10619 South Jordan Gateway

Salt Lake City UT 84095

Tel: (801)617-3200 Fax: (801)617-4200

Service ID #: 801-024755

Collected by: Ashley Lowe

Collected on: 09/05/02

Received: 09/07/02

Extracted: N/A

Tested: 09/10/02

Reported: 09/16/02

Sample Description: Water

Project Description: 4270032-020105 San Juan River Basin

Analysis of Water Samples

| Component Analyzed | Method | Unit | PQL | Analysis Result  |                     |
|--------------------|--------|------|-----|------------------|---------------------|
|                    |        |      |     | MW-1 Hammond 41A | MW-2 GW D Loop Line |
|                    |        |      |     | 02-04755-1       | 02-04755-2          |
| BTXE               |        |      |     |                  |                     |
| Dilution Factor    |        |      |     | 1                | 1                   |
| BENZENE            | 8021B  | µg/L | 0.5 | 2.7              | 2.0                 |
| ETHYLBENZENE       | 8021B  | µg/L | 0.5 | 2.2              | 1.0                 |
| TOLUENE            | 8021B  | µg/L | 0.5 | 0.5              | 0.7                 |
| O-XYLENE           | 8021B  | µg/L | 0.5 | 0.4J             | 0.7                 |
| M,P-XYLENE         | 8021B  | µg/L | 1   | 1                | 1                   |

# CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

LABORATORY APCL  
Contract El Paso Corp., San Juan River Basin

MWH

Phone (801) 617-3200 FAX (801) 617-4200

MWH Contact Brian Butters

Project San Juan River Basin

Project Number 4270032-020105

Date Due 21 days

Sampler's Name Ashley Lowe  
(print clearly)

Chain of Custody ID 020906401  
Page 1 of 1  
Air Bill No. 834715209737

| Location ID         | Sample ID | Depth Interval (ft) | Date Collected | Time Collected | Matrix (a) | Sampling Technique (b) | ANALYSES REQUESTED |                     |                 |                                     |                      |                    |                     |                     |                             |  |  |  |  |
|---------------------|-----------|---------------------|----------------|----------------|------------|------------------------|--------------------|---------------------|-----------------|-------------------------------------|----------------------|--------------------|---------------------|---------------------|-----------------------------|--|--|--|--|
|                     |           |                     |                |                |            |                        | BTEX SW-846 8021B  | Alkalinity SM 2320B | TDS USEPA 160.1 | NM WQCC Metals SW-846 6010B & 7470A | Cations SW-846 6010B | Anions USEPA 300.0 | Nitrate USEPA 300.0 | Nitrite USEPA 300.0 | No Preservative in one vial |  |  |  |  |
| GW D Loop Line Drip | MW-2      |                     | 09/05/02       | 13:54          | Wg         | B                      | ✓                  |                     |                 |                                     |                      |                    |                     |                     |                             |  |  |  |  |
| GW D Loop Line Drip | MW-3      |                     | 09/05/02       | 14:37          | Wg         | B                      | ✓                  |                     |                 |                                     |                      |                    |                     |                     |                             |  |  |  |  |
| GW Hammond 41A      | MW-1      |                     | 09/05/02       | 15:35          | Wg         | B                      | ✓                  |                     |                 |                                     |                      |                    |                     |                     |                             |  |  |  |  |
| TB02090501          |           |                     | 09/05/02       |                |            |                        |                    |                     |                 |                                     |                      |                    |                     |                     |                             |  |  |  |  |

4255

(a) Matrix:  
AA - Air  
SO - Soil  
WS - Surface Water  
WG - Ground Water

(b) Sampling Technique:  
Composite=C  
Grab=G  
Hand Auger=HA

Location IDs:  
Submersible Pump=SP  
Bladder Pump=BP  
Bailer=B  
Wellhead Faucet=WF  
Hydroponch=HP

North Flare Pit=NF  
South Flare Pit=SF  
San Juan River Plant=SJ

| Relinquished by/Affiliation | Received by/Affiliation | Date     | Time   |
|-----------------------------|-------------------------|----------|--------|
| <u>Ashley Lowe/AESE</u>     | <u>[Signature]</u>      | 09/06/02 | 10:00  |
|                             |                         | 09/11/02 | 11:35A |

## LABORATORY USE ONLY

### SAMPLES WERE:

- Shipped or hand delivered  
Notes: Feed -fx
- Ambient or Chilled  
Notes:
- Temperature 4.8°C
- Received Broken/Leaking (Improperly Sealed)  
Y N  
Notes:
- Properly Preserved  
Y N  
Notes:
- Received Within Holding Times  
Y N  
Notes:

### COC Tape Was:

- Present on Outer Package  
Y N NA
- Unbroken on Outer Package  
Y N NA
- Present on Sample  
Y N NA
- Unbroken on Sample  
Y N NA

Discrepancies Between Sample Labels and COC Record?  
Y N

Notes:

PINNACLE  
LABORATORIES

2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number      **205204**  
June 06, 2002

AMEC EARTH & ENVIRONMENTAL  
2060 AFTON PLACE  
FARMINGTON, NM 87401

EL PASO FIELD SERVICES  
614 RIELLY STREET  
FARMINGTON, NM 87401

Project Name                      HAMMOND #41A  
Project Number                  1517000121

Attention:                      LISA WINN/SCOTT POPE

On 05/24/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure

PINNACLE  
LABORATORIES

2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

|              |                              |               |            |
|--------------|------------------------------|---------------|------------|
| CLIENT       | : AMEC EARTH & ENVIRONMENTAL | PINNACLE ID   | : 205204   |
| PROJECT #    | : 1517000121                 | DATE RECEIVED | : 05/24/02 |
| PROJECT NAME | : HAMMOND #41A               | REPORT DATE   | : 06/06/02 |

| PINNACLE<br>ID # | CLIENT DESCRIPTION | MATRIX  | DATE<br>COLLECTED |
|------------------|--------------------|---------|-------------------|
| 205204 - 01      | HAM-0205-MW1       | AQUEOUS | 05/21/02          |
| 205204 - 02      | HAM-0205-MW2       | AQUEOUS | 05/21/02          |



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : AMEC EARTH & ENVIRONMENTAL  
PROJECT # : 1517000121  
PROJECT NAME : HAMMOND #41A

PINNACLE I.D.: 205204

| SAMPLE |              |         | DATE     | DATE      | DATE     | DIL.   |
|--------|--------------|---------|----------|-----------|----------|--------|
| D. #   | CLIENT I.D.  | MATRIX  | SAMPLED  | EXTRACTED | ANALYZED | FACTOR |
| 1      | HAM-0205-MW1 | AQUEOUS | 05/21/02 | NA        | 05/24/02 | 1      |
| 2      | HAM-0205-MW2 | AQUEOUS | 05/21/02 | NA        | 05/24/02 | 1      |

| PARAMETER     | DET. LIMIT | UNITS | HAM-0205-MW1 | HAM-0205-MW2 |
|---------------|------------|-------|--------------|--------------|
| BENZENE       | 0.5        | UG/L  | 4.4          | < 0.5        |
| TOLUENE       | 0.5        | UG/L  | < 0.5        | < 0.5        |
| ETHYLBENZENE  | 0.5        | UG/L  | < 0.5        | < 0.5        |
| TOTAL XYLENES | 1.0        | UG/L  | < 1.0        | < 1.0        |

SURROGATE:  
BROMOFLUOROBENZENE (%) 99 102  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
I/A

PINNACLE  
LABORATORIES

2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

|              |                              |                |            |
|--------------|------------------------------|----------------|------------|
| EST          | : EPA 8021 MODIFIED          | PINNACLE I.D.  | : 205204   |
| LAB I. D.    | : 052402                     | DATE EXTRACTED | : N/A      |
| CLIENT       | : AMEC EARTH & ENVIRONMENTAL | DATE ANALYZED  | : 05/24/02 |
| PROJECT #    | : 1517000121                 | SAMPLE MATRIX  | : AQUEOUS  |
| PROJECT NAME | : HAMMOND #41A               |                |            |

| PARAMETER    | UNITS |      |
|--------------|-------|------|
| BENZENE      | UG/L  | <0.5 |
| TOLUENE      | UG/L  | <0.5 |
| ETHYLBENZENE | UG/L  | <0.5 |
| OTOL XYLENES | UG/L  | <1.0 |

INSTRUMENT: 1000  
ROMOFLUOROBENZENE (%) 100  
INTEGRATION LIMITS: ( 80 - 120 )  
ANALYST NOTES:  
/A



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Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
LCS/LCSD

|              |                              |                |            |
|--------------|------------------------------|----------------|------------|
| TEST         | : EPA 8021 MODIFIED          | PINNACLE I.D.  | : 205204   |
| BATCH #      | : 052402                     | DATE EXTRACTED | : N/A      |
| CLIENT       | : AMEC EARTH & ENVIRONMENTAL | DATE ANALYZED  | : 05/24/02 |
| PROJECT #    | : 1517000121                 | SAMPLE MATRIX  | : AQUEOUS  |
| PROJECT NAME | : HAMMOND #41A               | UNITS          | : UG/L     |

| PARAMETER     | SAMPLE<br>RESULT | CONC<br>SPIKE | SPIKED<br>SAMPLE | %<br>REC | DUP<br>SPIKE | DUP<br>% REC | RPD | REC<br>LIMITS | RPD<br>LIMITS |
|---------------|------------------|---------------|------------------|----------|--------------|--------------|-----|---------------|---------------|
| BENZENE       | <0.5             | 20.0          | 20.9             | 105      | 19.5         | 98           | 7   | ( 80 - 120 )  | 20            |
| OLUENE        | <0.5             | 20.0          | 21.1             | 106      | 19.8         | 99           | 6   | ( 80 - 120 )  | 20            |
| THYLBENZENE   | <0.5             | 20.0          | 21.6             | 108      | 20.3         | 102          | 6   | ( 80 - 120 )  | 20            |
| TOTAL XYLENES | <1.0             | 60.0          | 66.4             | 111      | 62.7         | 105          | 6   | ( 80 - 120 )  | 20            |

TEST NOTES:  
N/A

$$\text{Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{PD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
MS/MSD

|              |                              |                |            |
|--------------|------------------------------|----------------|------------|
| EST          | : EPA 8021 MODIFIED          | PINNACLE I.D.  | : 205204   |
| ISMSD #      | : 205202-01                  | DATE EXTRACTED | : N/A      |
| CLIENT       | : AMEC EARTH & ENVIRONMENTAL | DATE ANALYZED  | : 05/24/02 |
| PROJECT #    | : 1517000121                 | SAMPLE MATRIX  | : AQUEOUS  |
| PROJECT NAME | : HAMMOND #41A               | UNITS          | : UG/L     |

| PARAMETER    | SAMPLE<br>RESULT | CONC<br>SPIKE | SPIKED<br>SAMPLE | %<br>REC | DUP<br>SPIKE | DUP<br>% REC | RPD | REC<br>LIMITS | RPD<br>LIMITS |
|--------------|------------------|---------------|------------------|----------|--------------|--------------|-----|---------------|---------------|
| ENZENE       | 3.0              | 20.0          | 21.6             | 93       | 21.4         | 92           | 1   | ( 80 - 120 )  | 20            |
| OLUENE       | <0.5             | 20.0          | 19.8             | 99       | 19.9         | 100          | 1   | ( 80 - 120 )  | 20            |
| THYLBENZENE  | 5.0              | 20.0          | 24.5             | 98       | 23.9         | 95           | 2   | ( 80 - 120 )  | 20            |
| OTAL XYLENES | 2.4              | 60.0          | 65.0             | 104      | 64.8         | 104          | 0   | ( 80 - 120 )  | 20            |

HEMIST NOTES:  
/A

$$\text{Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{PD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

SHADDED AREAS ARE FOR LAB USE ONLY.

**PLEASE FILL THIS FORM IN COMPLETELY.**

| <b>PROJECT MANAGER:</b> LISA WINN<br><b>COMPANY:</b> AMEC<br><b>ADDRESS:</b> 2060 AFTON place<br>Farmington NM. 87401<br><b>PHONE:</b> (505) 327-7929<br><b>FAX:</b> (505) 326-5721<br><b>BILL TO:</b> SCOTT POPE<br><b>COMPANY:</b> EL PASO Field Services<br><b>ADDRESS:</b> 614 Reilly AVE<br>Farmington NM. 87401 |        | <b>ANALYSIS REQUEST</b><br><table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:10%;">SAMPLE ID</th> <th style="width:10%;">DATE</th> <th style="width:10%;">TIME</th> <th style="width:10%;">MATRIX</th> <th style="width:10%;">LAB D</th> <th style="width:10%;">LAB O</th> <th style="width:10%;">LAB P</th> <th style="width:10%;">LAB Q</th> <th style="width:10%;">LAB R</th> <th style="width:10%;">LAB S</th> <th style="width:10%;">LAB T</th> <th style="width:10%;">LAB U</th> <th style="width:10%;">LAB V</th> <th style="width:10%;">LAB W</th> <th style="width:10%;">LAB X</th> <th style="width:10%;">LAB Y</th> <th style="width:10%;">LAB Z</th> </tr> <tr> <td>HAM-0205-MW1</td> <td>5-1-02</td> <td>1140</td> <td>H<sub>2</sub>O</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>HAM-0205-MW2</td> <td>5-1-02</td> <td>1235</td> <td>H<sub>2</sub>O</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> |                  | SAMPLE ID | DATE  | TIME  | MATRIX | LAB D | LAB O | LAB P | LAB Q | LAB R | LAB S | LAB T | LAB U | LAB V | LAB W | LAB X | LAB Y | LAB Z | HAM-0205-MW1 | 5-1-02 | 1140 | H <sub>2</sub> O |  |  |  |  |  |  |  |  |  |  |  |  |  | HAM-0205-MW2 | 5-1-02 | 1235 | H <sub>2</sub> O |  |  |  |  |  |  |  |  |  |  |  |  |  | <b>CONTAINERS</b><br><table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:10%;">NUMBER</th> <th style="width:10%;">DATE</th> <th style="width:10%;">TIME</th> <th style="width:10%;">LAB D</th> <th style="width:10%;">LAB O</th> <th style="width:10%;">LAB P</th> <th style="width:10%;">LAB Q</th> <th style="width:10%;">LAB R</th> <th style="width:10%;">LAB S</th> <th style="width:10%;">LAB T</th> <th style="width:10%;">LAB U</th> <th style="width:10%;">LAB V</th> <th style="width:10%;">LAB W</th> <th style="width:10%;">LAB X</th> <th style="width:10%;">LAB Y</th> <th style="width:10%;">LAB Z</th> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> |  | NUMBER | DATE | TIME | LAB D | LAB O | LAB P | LAB Q | LAB R | LAB S | LAB T | LAB U | LAB V | LAB W | LAB X | LAB Y | LAB Z | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | <b>RECEIVED BY:</b><br>Signature: _____ Time: _____<br>Printed Name: _____ Date: _____<br>Company: _____<br>RECEIVED BY: (LAB) _____<br>Signature: _____ Time: _____<br>Printed Name: _____ Date: _____<br>Company: _____ |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|--------|------|------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--------------|--------|------|------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| SAMPLE ID                                                                                                                                                                                                                                                                                                             | DATE   | TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | MATRIX           | LAB D     | LAB O | LAB P | LAB Q  | LAB R | LAB S | LAB T | LAB U | LAB V | LAB W | LAB X | LAB Y | LAB Z |       |       |       |       |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |        |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                           |  |
| HAM-0205-MW1                                                                                                                                                                                                                                                                                                          | 5-1-02 | 1140                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | H <sub>2</sub> O |           |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |        |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                           |  |
| HAM-0205-MW2                                                                                                                                                                                                                                                                                                          | 5-1-02 | 1235                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | H <sub>2</sub> O |           |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |        |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                           |  |
| NUMBER                                                                                                                                                                                                                                                                                                                | DATE   | TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | LAB D            | LAB O     | LAB P | LAB Q | LAB R  | LAB S | LAB T | LAB U | LAB V | LAB W | LAB X | LAB Y | LAB Z |       |       |       |       |       |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |        |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                           |  |
| 2                                                                                                                                                                                                                                                                                                                     |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |           |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |        |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                           |  |
| 2                                                                                                                                                                                                                                                                                                                     |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |           |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |              |        |      |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |        |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                           |  |

Development  
Purging

# WELL DEVELOPMENT AND PURGING DATA FORM

ameco

Well Number MW1

Project Name EPFS GW project

Client Company Elk Paso Field Services

Site Name HAMMOND 41A (898941)

Site Address SAN JUAN CO

Project Manager LISA WINN

Page 1 of 1  
Project No. 1517000121

## Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal  
☐ Stabilization of Indicator Parameters  
☐ Other

## Methods of Development

Pump  
☐ Centrifugal  
☐ Submersible  
☐ Peristaltic  
☐ Other  
☒ Boiler  
☒ Bottom Valve  
☐ Double Check Valve  
☐ Stainless-steel Kemmerer

## Water Volume Calculation

Initial Depth of Well (feet) 26.51  
Initial Depth to Water (feet) 18.16  
Height of Water Column in Well (feet) 8.35  
Diameter (inches): Well 6.35 Gravel Pack 6.35

| Item            | Water Volume in Well | Gravel Pack |
|-----------------|----------------------|-------------|
| Well Casing     | 4.35                 | 5.45        |
| Gravel Pack     |                      | 16.35       |
| Drilling Fluids |                      |             |
| Total           |                      | 16.35       |

## Instruments

☒ pH Meter  
☒ DO Monitor  
☒ Conductivity Meter  
☒ Temperature Meter  
☐ Other  
Serial No. (if applicable)  
YSL 63  
YSL 95  
YSL 63  
YSL 63

Water Disposal  
KIT Separator Brownfield A.M.

## Water Removal Data

| Date    | Time | Development Method | Removal Rate (gal/min) | Intake Depth (feet) | Ending Water Depth (feet) | Water Volume Removed (gallons) | Product Volume Removed (gallons) | Temperature (°C) | pH   | Conductivity (umhos/cm) | Dissolved Oxygen (mg/L) | Comments                            |
|---------|------|--------------------|------------------------|---------------------|---------------------------|--------------------------------|----------------------------------|------------------|------|-------------------------|-------------------------|-------------------------------------|
| 5-21-02 | 1122 | X                  |                        |                     |                           | 3.5                            | 3.5                              | 17.4             | 7.37 | 2852                    |                         | Cloudy Light Green mild Sulfur Odor |
|         | 1125 | X                  |                        |                     |                           | 3.5                            | 7                                | 14.4             | 7.56 | 27.61                   |                         | "                                   |
|         | 1129 | X                  |                        |                     |                           | 3.5                            | 10.5                             | 14.1             | 7.63 | 26.68                   |                         | "                                   |
|         | 1134 | X                  |                        |                     |                           | 3.5                            | 14                               | 14.0             | 7.68 | 27.31                   |                         | "                                   |
|         | 1137 | X                  |                        |                     | 18.79                     | 3.5                            | 17.5                             | 14.1             | 7.72 | 27.25                   | 0.69                    | no change                           |

Comments Sampled for BTEX 1140

Developer's Signature(s) Chris A. M...

Date 5-21-02

Reviewer JMM

Date 5/22/02

- ☐ Development
- ☒ Purging

## WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 2

Page 1 of 1

Project Name EPFS Gw. project

Project Manager Lisa Krinn

Project No. 151700012

Client Company El Paso Field Services

Site Address Rural SAN JUAN CO

### Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal  
☒ Stabilization of Indicator Parameters  
☐ Other \_\_\_\_\_

☐ Other

## Methods of Development

| Equipment                            | Material                                          |
|--------------------------------------|---------------------------------------------------|
| Pump                                 | Baller                                            |
| <input type="checkbox"/> Centrifugal | <input checked="" type="checkbox"/> Bottom Valve  |
| <input type="checkbox"/> Submersible | <input type="checkbox"/> Double Check Valve       |
| <input type="checkbox"/> Peristaltic | <input type="checkbox"/> Stainless-steel Kemmerer |
| <input type="checkbox"/> Other _____ |                                                   |

## Water Volume Calculation

Initial Depth of Well (feet) 28.07  
Initial Depth to Water (feet) 17.62  
Height of Water Column in Well (feet) 10.45  
Diameter (inches): Well 2" Gravel Pack

| Item            | Water Volume in Well |          | Gallons to be Removed |
|-----------------|----------------------|----------|-----------------------|
|                 | Cubic Feet           | Gallons  |                       |
| Well Casing     | 10.46                | 1.70 x 3 | 5.10                  |
| Gravel Pack     |                      |          |                       |
| Drilling Fluids |                      |          |                       |
| Total           |                      |          | 5.10                  |

## Instruments

☒ pH Meter YSL 63

☒ DO Monitor YSL 95

☒ Conductivity Meter YSL 63

☒ Temperature Meter YSL 63

☐ Other \_\_\_\_\_

## Water Disposal

KWT2 Separator Bloomfield A/M.

### Water Removal Data

[illegible]

Comments: Sampled for BTEX 1235

Developer's Signature(s)

Date 5-21-02

Reviewer

Date 2/2/20

**amec**

Project No.: K12000121

Task: 2

Date: 5-21-02

[illegible]

Comments:

Date: 5-21-02

SHADED AREAS ARE FOR LAB USE ONLY

*Pinnacle Laboratories Inc.*

# CHAIN OF CUSTODY

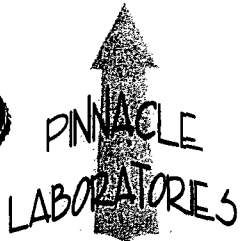
DATE: 5-25-02 PAGE: 1 OF 1

## PLI Accession

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| PROJECT MANAGER: 6.554 w/m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        |
| COMPANY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | AMEC                   |
| ADDRESS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2060 AFTON place       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Farmington NM. 97401   |
| PHONE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | (505) 327-7928         |
| FAX:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | (505) 326-5721         |
| BILL TO:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SCOTT PAGE             |
| COMPANY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | EL PASO Field Services |
| ADDRESS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 614 Reilly AVE         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Farmington NM. 97401   |
| SAMPLE ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DATE TIME ANALYST      |
| HAM-0205-MW 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 5/1/02 1140 HAO        |
| HAM-0205-MW 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 5/1/02 1135 HAO        |
| Petroleum Hydrocarbons (418.1) TRPH<br>(MOD.8015) Diesel/Direct Inject<br>(M8015) Gas/Purge & Trap<br>8021 (BTEX)/8015 (Gasoline) MTBE<br>8021 (BTEX) <input type="checkbox"/> MTBE <input type="checkbox"/> TMB <input type="checkbox"/> PCE<br>8021 (TCL)<br>8021 (EDX)<br>8021 (HALO)<br>8021 (CUST)<br>504.1 EDB <input type="checkbox"/> / DBCP <input type="checkbox"/><br>8260 (TCL) Volatile Organics<br>8260 (Full) Volatile Organics<br>8260 (CUST) Volatile Organics<br>8260 (Landfill) Volatile Organics<br>Pesticides /PCB (608/8081/8082)<br>Herbicides (615/8151)<br>Base/Neutral/Acid Compounds GC/MS (625/8270)<br>Polynuclear Aromatics (610/8310/8270-SIMS)<br>General Chemistry:<br>Priority Pollutant Metals (13)<br>Target Analyte List Metals (23)<br>RCRA Metals (8)<br>RCRA Metals by TCLP (Method 1311)<br>Metals:<br>NUMBER OF CONTAINERS |                        |

| PROJECT INFORMATION |              | PRIORITY/HORIZATION REQUIRED OR RUSH PROJECTS                                                                                    |                                              |
|---------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| PROJ. NO.           | 1517000121   | (RUSH) <input type="checkbox"/> 24hr <input type="checkbox"/> 48hr <input type="checkbox"/> 72hr <input type="checkbox"/> 1 WEEK | (NORMAL) <input checked="" type="checkbox"/> |
| PROJ. NAME          | EPLS GW PROJ | CERTIFICATION REQUIRED: <input type="checkbox"/> NM <input type="checkbox"/> SDWA <input type="checkbox"/> OTHER                 |                                              |
| P.O. NO.            |              | METHANOL PRESERVATION <input type="checkbox"/>                                                                                   |                                              |
| SHIPPED VIA         | G.A. Hand    | COMMENTS: FIXED FEE: <input type="checkbox"/>                                                                                    |                                              |
| SAMPLE RECEIPT      |              |                                                                                                                                  |                                              |
| NO. CONTAINERS      |              |                                                                                                                                  |                                              |
| CLISTOPAL SEALS     |              |                                                                                                                                  |                                              |
| RECEIVED INFO:      |              |                                                                                                                                  |                                              |
| BILL TO:            |              |                                                                                                                                  |                                              |

| REINQUISHED BY |       | REINQUISHED BY |       |
|----------------|-------|----------------|-------|
| Signature:     | Time: | Signature:     | Time: |
| Printed Name:  | Date: | Printed Name:  | Date: |
| Company:       |       | Company:       |       |



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number      **202125**  
March 05, 2002

AMEC EARTH & ENVIRONMENTAL  
2060 AFTON PLACE  
FARMINGTON, NM 87401

EL PASO FIELD SERVICES  
614 RIELLY STREET  
FARMINGTON, NM 87401

Project Name                      HAMMOND #41A  
Project Number                  1517000121

Attention:                      LISA WINN/SCOTT POPE

On 02/27/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.  
General Manager

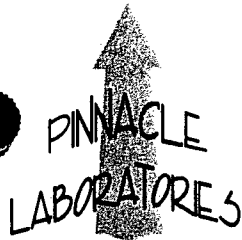
MR: jt

Enclosure

PINNACLE  
LABORATORIES

2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

|              |                              |               |            |
|--------------|------------------------------|---------------|------------|
| CLIENT       | : AMEC EARTH & ENVIRONMENTAL | PINNACLE ID   | : 202125   |
| PROJECT #    | : 1517000121                 | DATE RECEIVED | : 02/27/02 |
| PROJECT NAME | : HAMMOND #41A               | REPORT DATE   | : 03/05/02 |
| PINNACLE     |                              |               | DATE       |
| ID #         | CLIENT DESCRIPTION           | MATRIX        | COLLECTED  |
| 02125 - 01   | HAM-0202-MW1                 | AQUEOUS       | 02/25/02   |
| 02125 - 02   | HAM-0202-MW2                 | AQUEOUS       | 02/25/02   |



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : AMEC EARTH & ENVIRONMENTAL  
PROJECT # : 1517000121  
PROJECT NAME : HAMMOND #41A

PINNACLE I.D.: 202125

| SAMPLE |              |         | DATE     | DATE      | DATE     | DIL.   |
|--------|--------------|---------|----------|-----------|----------|--------|
| ID. #  | CLIENT I.D.  | MATRIX  | SAMPLED  | EXTRACTED | ANALYZED | FACTOR |
| 01     | HAM-0202-MW1 | AQUEOUS | 02/25/02 | NA        | 02/27/02 | 1      |
| 02     | HAM-0202-MW2 | AQUEOUS | 02/25/02 | NA        | 02/27/02 | 1      |

| PARAMETER     | DET. LIMIT | UNITS | HAM-0202-MW1 | HAM-0202-MW2 |
|---------------|------------|-------|--------------|--------------|
| BENZENE       | 0.5        | UG/L  | 3.9          | < 0.5        |
| TOLUENE       | 0.5        | UG/L  | < 0.5        | < 0.5        |
| ETHYLBENZENE  | 0.5        | UG/L  | 0.50         | < 0.5        |
| TOTAL XYLENES | 1.0        | UG/L  | < 1.0        | < 1.0        |

SURROGATE:  
BROMOFLUOROBENZENE (%) 91 89  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
N/A



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

|              |                              |                |            |
|--------------|------------------------------|----------------|------------|
| TEST         | : EPA 8021 MODIFIED          | PINNACLE I.D.  | : 202125   |
| BLANK I. D.  | : 022702                     | DATE EXTRACTED | : N/A      |
| CLIENT       | : AMEC EARTH & ENVIRONMENTAL | DATE ANALYZED  | : 02/27/02 |
| PROJECT #    | : 1517000121                 | SAMPLE MATRIX  | : AQUEOUS  |
| PROJECT NAME | : HAMMOND #41A               |                |            |

| PARAMETER     | UNITS |      |
|---------------|-------|------|
| BENZENE       | UG/L  | <0.5 |
| TOLUENE       | UG/L  | <0.5 |
| ETHYLBENZENE  | UG/L  | <0.5 |
| TOTAL XYLENES | UG/L  | <1.0 |

SURROGATE:

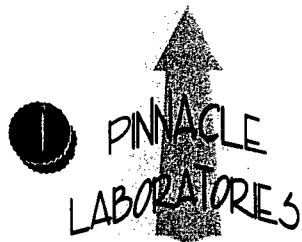
BROMOFLUOROBENZENE (%)

92

SURROGATE LIMITS:

( 80 - 120 )

ADDITIONAL NOTES:



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
LCS/LCSD

TEST : EPA 8021 MODIFIED  
BATCH # : 022702  
CLIENT : AMEC EARTH & ENVIRONMENTAL  
PROJECT # : 1517000121  
PROJECT NAME : HAMMOND #41A

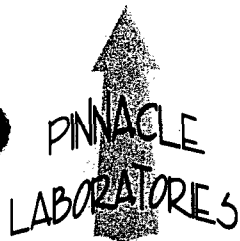
PINNACLE I.D. : 202125  
DATE EXTRACTED : N/A  
DATE ANALYZED : 02/27/02  
SAMPLE MATRIX : AQUEOUS  
UNITS : UG/L

| PARAMETER     | SAMPLE<br>RESULT | CONC<br>SPIKE | SPIKED<br>SAMPLE | %<br>REC | DUP<br>SPIKE | DUP<br>% REC | RPD | REC<br>LIMITS | RPD<br>LIMITS |
|---------------|------------------|---------------|------------------|----------|--------------|--------------|-----|---------------|---------------|
| BENZENE       | <0.5             | 20.0          | 19.5             | 98       | 19.6         | 98           | 1   | ( 80 - 120 )  | 20            |
| TOLUENE       | <0.5             | 20.0          | 19.0             | 95       | 19.2         | 96           | 1   | ( 80 - 120 )  | 20            |
| ETHYLBENZENE  | <0.5             | 20.0          | 18.7             | 94       | 18.7         | 94           | 0   | ( 80 - 120 )  | 20            |
| TOTAL XYLENES | <1.0             | 60.0          | 57.4             | 96       | 57.9         | 97           | 1   | ( 80 - 120 )  | 20            |

REMARKS:  
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
MS/MSD

|              |                              |                |            |
|--------------|------------------------------|----------------|------------|
| TEST         | : EPA 8021 MODIFIED          | PINNACLE I.D.  | : 202125   |
| MSMSD #      | : 202123-01                  | DATE EXTRACTED | : N/A      |
| CLIENT       | : AMEC EARTH & ENVIRONMENTAL | DATE ANALYZED  | : 02/27/02 |
| PROJECT #    | : 1517000121                 | SAMPLE MATRIX  | : AQUEOUS  |
| PROJECT NAME | : HAMMOND #41A               | UNITS          | : UG/L     |

| PARAMETER     | SAMPLE<br>RESULT | CONC<br>SPIKE | SPIKED<br>SAMPLE | %<br>REC | DUP<br>SPIKE | DUP<br>% REC | RPD | REC<br>LIMITS | RPD<br>LIMITS |
|---------------|------------------|---------------|------------------|----------|--------------|--------------|-----|---------------|---------------|
| BENZENE       | <0.5             | 20.0          | 20.1             | 101      | 19.5         | 98           | 3   | ( 80 - 120 )  | 20            |
| TOLUENE       | <0.5             | 20.0          | 19.7             | 99       | 19.1         | 96           | 3   | ( 80 - 120 )  | 20            |
| ETHYLBENZENE  | <0.5             | 20.0          | 19.2             | 96       | 18.7         | 94           | 3   | ( 80 - 120 )  | 20            |
| TOTAL XYLENES | <1.0             | 60.0          | 59.2             | 99       | 57.5         | 96           | 3   | ( 80 - 120 )  | 20            |

ANALYST NOTES:  
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

|                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>PROJECT MANAGER:</b> Lisa Winn<br><b>COMPANY:</b> AMEC<br><b>ADDRESS:</b> 2060 Afton Place<br>Farmington NM. 87401<br><b>PHONE:</b> (505) 327-7928<br><b>FAX:</b> (505) 326-5721<br><b>BILL TO:</b> SOTT pop<br><b>COMPANY:</b> EL Paso Field Services<br><b>ADDRESS:</b> 614 Reilly Ave<br>Farmington NM. 87401 |  | <b>ANALYSIS REQUEST</b><br>Petroleum Hydrocarbons (418.1) TRPH<br>(MOD.8015) Diesel/Direct Inject<br>(M8015) Gas/Purge & Trap<br>8021 (BTEX)/8015 (Gasoline) MTBE<br>8021 (BTEX) <input type="checkbox"/> MTBE <input type="checkbox"/> TMB <input type="checkbox"/> PCE<br>8021 (TCL)<br>8021 (EDX)<br>8021 (HALO)<br>8021 (CUST)<br>504.1 EDB <input type="checkbox"/> / DBCP <input type="checkbox"/>                                                                                           |  | <b>NUMBERS OF CONTAINERS</b><br>Metals:<br>RCRA Metals by TCLP (Method 1311)<br>RCRA Metals (8)<br>Target Analyte List Metals (23)<br>Priority Pollutant Metals (13)<br>General Chemistry:<br>Polynuclear Aromatics (610/8310/8270-SIMS)<br>Base/Neutral/Acid Compounds GC/MS (625/8270)<br>Herbicides (615/8151)<br>Pesticides /PCB (608/8081/8082)<br>8260 (Landfill) Volatile Organics<br>8260 (CUST) Volatile Organics<br>8260 (Full) Volatile Organics<br>8260 (TCL) Volatile Organics |  |
| <b>SAMPLE ID</b><br>HAM-0202-MW1 2-25-02/255 H <sub>2</sub> O<br>HAM-0202-MW2 2-25-02/350 H <sub>2</sub> O                                                                                                                                                                                                          |  | <b>DATE</b><br>2-25-02                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | <b>TIME</b><br>1500                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| <b>PROJECT INFORMATION</b><br>PROJ. NO: 1517000/21<br>PROJ. NAME: EPS G.W. project<br>P.O. NO.:<br>SHIPPED VIA: Greyhound<br>SAMP. RECEIPT:                                                                                                                                                                         |  | <b>PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS</b><br>(RUSH) <input type="checkbox"/> 24hr <input type="checkbox"/> 48hr <input type="checkbox"/> 72hr <input type="checkbox"/> 1 WEEK (NORMAL) <input checked="" type="checkbox"/><br>CERTIFICATION REQUIRED: <input type="checkbox"/> NM <input type="checkbox"/> SDWA <input type="checkbox"/> OTHER<br>METHANOL PRESERVATION <input type="checkbox"/><br>COMMENTS: FIXED FEE <input type="checkbox"/><br>HAMMOND #41A<br>meter # (89994) |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>RELINQUISHED BY:</b><br>Signature: [Signature]<br>Printed Name: Chris A. Macer<br>Date: 2-26-02<br>Company: See reverse side (Force Majeure)                                                                                                                                                                     |  | <b>RELINQUISHED BY:</b><br>Signature: [Signature]<br>Printed Name: [Blank]<br>Date: [Blank]<br>Company: [Blank]                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>RECEIVED BY:</b><br>Signature: [Signature]<br>Printed Name: [Blank]<br>Date: [Blank]<br>Company: [Blank]                                                                                                                                                                                                         |  | <b>RECEIVED BY:</b><br>Signature: [Signature]<br>Printed Name: [Blank]<br>Date: [Blank]<br>Company: [Blank]                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |

Page 1 of 1

## Project Manager List with

Project No. / 517 XXXX/21

Client Company El Paso Field Services

Site Name HAMMOND #41A (89999)

Site Address Rural SAN TAN TOWN CO.

## Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal

☐ Other

## Methods of Development

|                                      | Pump                                              | Boiler |
|--------------------------------------|---------------------------------------------------|--------|
| <input type="checkbox"/> Centrifugal | <input checked="" type="checkbox"/> Bottom Valve  |        |
| <input type="checkbox"/> Submersible | <input type="checkbox"/> Double Check Valve       |        |
| <input type="checkbox"/> Peristaltic | <input type="checkbox"/> Stainless-steel Kemmerer |        |
| <input type="checkbox"/> Other       |                                                   |        |

### Water Volume Calculation

Initial Depth of Well (feet) 26.51

Initial Depth to Water (feet) 1.8

Height of Water Column in Well (feet) 8.6

| Item            | Water Volume in Well |          | Gallons to be Removed |
|-----------------|----------------------|----------|-----------------------|
|                 | Cubic Feet           | Gallons  |                       |
| Well Casing     | 8.65                 | 5.64 X 3 | 16.92                 |
| Gravel Pack     |                      |          |                       |
| Drilling Fluids |                      |          |                       |
| Total           |                      |          | 16.92                 |

## Instruments

Serial No. (If applicable)

☒ pH Meter

X 5763

☐ DO Monitor

☒ Conductivity Meter

5163

☒ Temperature Meter

5763

☐ Other

## Water Disposal

K-17 Speaker Bloomfield NH

## Water Removal Data

[illegible]

Comments Sampled for BTEX 1255

Developer's Signature(s) *David M. Smith*

Dated - 25-02

## Review

Answer John Date 3/1/02

Date 3/1/02





Pinnacle Laboratories Inc.

# CHAIN OF CUSTODY

DATE 2-26-02 PAGE 1 OF 1

LABORATORY ACCESSION

SHADED AREAS ARE FOR LAB USE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER Lisa Kinn

COMPANY:

AMEC

ADDRESS:

2060 Alford Place  
Farmington, NM 87401

PHONE:

(505) 327-7928

FAX:

(505) 326-5721

BILL TO:

SOFT PAGE

COMPANY:

El Paso Field Services

ADDRESS:

614 Reilly Ave  
Farmington, NM 87401

SAMPLE ID

DATE

TIME

ANALYST

LAB ID

Petroleum Hydrocarbons (418.1) TRPH  
(MOD.8015) Diesel/Direct Inject

(M8015) Gas/Purge & Trap

8021 (BTEX)/8015 (Gasoline) MTBE

8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE

8021 (TCL)

8021 (EDX)

8021 (HALO)

8021 (CUST)

504.1 EDB ☐ / DBCP ☐

8260 (TCL) Volatile Organics

8260 (Full) Volatile Organics

8260 (CUST) Volatile Organics

8260 (Landfill) Volatile Organics

Pesticides /PCB (608/8081/8082)

Herbicides (615/8151)

Base/Neutral/Acid Compounds GC/MS (625/8270)

Polynuclear Aromatics (610/8310/8270-SIMS)

General Chemistry:

Priority Pollutant Metals (13)

Target Analyte List Metals (23)

RCRA Metals (8)

RCRA Metals by TCLP (Method 1311)

Metals:

NUMBER OF CONTAINERS

PROJECT INFORMATION

PROJ NO: 1517000121

PROJ NAME: EPLS GWR project

P.O. NO:

SHIPPED VIA: Greyhound

SAMPLE RECEIPT

NO. CONTAINERS

CUSTOMER'S NAME

RECEIVED IN LAB

DATE/TIME

RECEIVED BY

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK

CERTIFICATION REQUIRED: ☐ NM ☐ SOWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

HAMMOND #41A  
meter # (899994)

SIGNATURE: [Signature] TIME: 5:00

PRINTED NAME: [Name] DATE: 2-26-02

COMPANY: [Company]

See reverse side (Force Majeure)

SIGNATURE: [Signature] TIME: [Time]

PRINTED NAME: [Name] DATE: [Date]

COMPANY: [Company]

RECEIVED BY: [Signature]

DATE/TIME: [Date/Time]

RECEIVED BY: [Signature]

RECEIVED BY: [Signature]

SIGNATURE: [Signature] TIME: [Time]

PRINTED NAME: [Name] DATE: [Date]

COMPANY: [Company]

RECEIVED BY: [Signature]

DATE/TIME: [Date/Time]

RECEIVED BY: [Signature]

DATE/TIME: [Date/Time]

RECEIVED BY: [Signature]

DATE/TIME: [Date/Time]

RECEIVED BY: [Signature]

**amec**

Project No.: 15/2000/21

Task: 2

Date: 2-25-02

[illegible]

Comments: \_\_\_\_\_

Date: 2-25-02