3R - 312

# REPORTS

# DATE:

1998

*Public Service Company*
*of New Mexico*
*Alvarado Square MS 0408*
*Albuquerque, NM 87158*



April 2, 1998

Mr. William Olson
Hydrogeologist
Oil Conservation Division
2040 So. Pacheco
Santa Fe, New Mexico 87505

**RE: 1998 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT**

Dear Bill:

PNM is pleased to submit the 1998 Annual Groundwater Report on Unlined Surface Impoundments in the San Juan Basin. Pursuant to PNM's Groundwater Management Program for Unlined Surface Impoundment Closures, the report details the ongoing investigation/remedial activities at unlined surface impoundments having groundwater contamination as identified by PNM. A list of groundwater sites reported in this document is provided below.

Cozzens B1
Dogie Compressor Station East Pit
Dogie Compressor Station North Pit
Florance 32A
Florance Z 40 M
Florance 44
Florance 47X
Florance 124
Hampton 4M
Honolulu Loop Line Drip
Ice Canyon Drip
Jacques 2A
Mangum 1E
McClanahan 22
McClanahan A2E
McCoy Gas Com A1
Miles Federal 1E
Miles Federal 1E Drip
Randleman 1
Reid 16 Drip
Sammons 2
Turner 1A
Turner 3
Zachry 18E

PNM plans to request closure of two of the above sites, the Cozzens B1 and the Sammons 2, in our April 30, 1998 filing of the San Juan Pit Closure Reports to the OCD Santa Fe office. If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,

Maureen Gannon
Project Manager

Attachment

cc: Ingrid Deklau, WFS
*Denny Foust, OCD-Aztec Office*
Bill VonDrehle, WFS

bcc: Colin Adams (w/o analytical results)
Kathy Juckes
Ron Johnson (w/o analytical results)
Mark Sikelianos

PNMGS Well Site: **Dogie Compressor Station East**

# Groundwater Site Summary Report

Copies: WFS(1)
Operator (1)
NMOCD District Office (1)
NMOCD Santa Fe (1)

**Quarter/Year:** 3rd/97, 4th/97 & 1st/98

**Operator:** Williams Field Services
**Sec:** 4 **Twn:** 25N **Rng:** 6W **NW1/4**
**Canyon:** Largo

**Vulnerable Class:** Original
**OCD Ranking:** 40
**Lead Agency:** NMOCD

**Topo Map:** previously submitted
**Well Completion Diagram:** NA
**Site Map with Analysis:** NA
**Groundwater Contour Maps:** NA
**Groundwater Hydrograph:** NA
**Analytical Results:** attached

**Activities for Previous Year:**

PNM excavated the east pit at the Dogie Compressor Station on July 9, 1997. Groundwater was encountered at 14 feet below ground surface. The water was sampled and BTEX concentrations were determined to be above WQCC standards. PNM provided verbal notification to OCD on July 28, 1997, and followed up with written notification on August 1, 1997.

On March 2, 1998, a second groundwater sample was collected out of the excavation and chemical analyses for BTEX, PAHs, WQCC metals, and water quality parameters was conducted. The results of the analysis are provided as an attachment. Analysis confirmed the presence of benzene above WQCC standards.

**Results:**

Results of the March 1998 sampling event reveal benzene, sulfate and chloride concentrations above WQCC standards. These results of this event are provided as an attachment.

**Future Actions:**

PNM will backfill the pit, install groundwater monitoring wells and commence groundwater monitoring at the Dogie Compressor Station East pit location during the second quarter of 1998.

**Public Service Company of New Mexico - Gas Services**
Environmental Services Division - Alvarado Square, MS-0408
Albuquerque, NM 87158

**Contact: Maureen Gannon** **Telephone: 505-241-2974**

Dogie East Pit

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

# ANALYTICAL REPORT

**Date:** *25-Mar-98*

| | | | |
|---|---|---|---|
| **Client:** | PNM - Public Service Company of NM | **Client Sample Info:** | Dogie East Pit |
| **Work Order:** | 9803004 | **Client Sample ID:** | 9803021115 |
| **Lab ID:** | 9803004-01A **Matrix:** AQUEOUS | **Collection Date:** | 3/2/98 11:15:00 AM |
| **Project:** | Dogie East Pit | **COC#:** | 7085 |

| Parameter | Result | Limit | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **BTEX** | | **SW8020A** | | | | Analyst: **DC** |
| Benzene | 190 | 5 | | µg/L | 10 | 3/6/98 |
| Toluene | 580 | 5 | | µg/L | 10 | 3/6/98 |
| Ethylbenzene | 40 | 5 | | µg/L | 10 | 3/6/98 |
| m,p-Xylene | 420 | 10 | | µg/L | 10 | 3/6/98 |
| o-Xylene | 75 | 5 | | µg/L | 10 | 3/6/98 |
| Surr: Fluorobenzene | 91.1 | 70-130 | | %REC | 10 | 3/6/98 |
| Surr: 1,4-Difluorobenzene | 91.4 | 70-130 | | %REC | 10 | 3/6/98 |
| Surr: 4-Bromochlorobenzene | 91.9 | 70-130 | | %REC | 10 | 3/6/98 |

**Qualifiers:**

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

# *ANALYTICAL REPORT*

| | | | |
|---|---|---|---|
| Attn: | *Maureen Gannon* | Date: | 25-Mar-98 |
| Company: | *PNM Gas Services* | Lab No. | *9803004* |
| Address: | *Alevardo Square, Mail Stop 0408* | Sample ID.: | *01A* |
| City, State: | *Albuquerque, NM 87158* | Job No.: | *2-1000* |

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | ***PNM Gas Services - Dogie East Pit*** | | | | |
| Project Location: | ***9803031115*** | | | | |
| Sampled by: | MS,RD,RB | Date: | 2-Mar-98 | Time: | 11:15 |
| Analyzed by: | HR | Date: | 18-Mar-98 | | |

## *Laboratory Analysis*

| Parameter | | Results as Received | Unit of Measure | | Results as Received | Unit of Measure | |
|---|---|---|---|---|---|---|---|
| *Cations* | | | | | | | |
| *Sodium* | *Na* | 1068 | mg/L | | 46.46 | me/L | |
| *Calcium* | *Ca* | 370 | mg/L | | 18.46 | me/L | |
| *Magnesium* | *Mg* | 53.5 | mg/L | | 4.40 | me/L | |
| *Potassium* | *K* | 23.0 | mg/L | | 0.59 | me/L | |
| *Anions* | | | | | | | |
| *Chloride* | *Cl* | 276 | mg/L | | 7.79 | me/L | |
| *Sulfate* | *SO4* | 1300 | mg/L | | 27.07 | me/L | |
| *Carbonate* | *CO3 as CaCO3* | < 1 | mg/L | | < 0.01 | me/L | |
| *Bicarbonate* | *HCO3 as CaCO3* | 1153 | mg/L | | 18.90 | me/L | |
| *Hydroxide* | *OH as CaCO3* | < 1 | mg/L | | < 0.01 | me/L | |
| | | | | | | | |
| *Total Dissolved Solids Calculated, Sum of Cation/Anion* | | 4244 | mg/L | | | | |
| *Total Dissolved Solids Dried @ 180 C* | | 5392 | mg/L | | | | |
| *pH* | | 7.06 | | | | | |
| *Conductivity @ 25 C* | | 5110 | uS/cm | | | | |
| *Total Hardness as CaCO3* | | 1144 | mg/L | | | | |

*Cation-Anion Balance*

16.16 *Difference Cation-Anion, me/L*

123.66 *Total Cation-Anion, me/L*

13.1 *% Difference Cation-Anion*

*Comments*

*Approved by:*

*Date:* 3/25/98

**Mountain States Analytical, Inc.**

*Your Quality Solution*

March 23, 1998

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:
Project: WQCC Metals Analysis
MSAI Group: 21367

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following sample is included in the report.

9803004-01C

All holding times were met for the tests performed on these samples.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager



Corporate Office
1645 West 2200 South Salt Lake City, Utah 84119
801-973-6050 • 1-800-973-6724:MSAI • FAX 801-972-6278

Southwest Utah Program
[illegible]

MEMBER ACIL

# Analytical Report

Mountain States Analytical, Inc.
*The Quality Solution*

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: WQCC Metals Analysis

MSAI Sample: 76103
MSAI Group: 21367
Date Reported: 03/23/98
Discard Date: 04/22/98
Date Submitted: 03/05/98
Date Sampled: 03/02/98
Collected by:
Purchase Order:
Project No.:

Sample ID: 9803004 01C
Matrix: Waste Water

| Test | Analysis | Results as Received | Units | Method Detection Limit |
|---|---|---|---|---|
| 0259B | Mercury by CVAA, w/ww, 7470<br>Method: SW-846 7470 | ND | mg/l | 0.0001 |
| 0392I | Flame/ICP Prep, w/ww, 3005A<br>Method: SW-846 3005A | Batch: w141 | | |
| 0392M | Mercury Prep CVAA, w/ww, 7470<br>Method: SW-846 7470 | Batch: w036 | | |
| 0401 | Prep for HAA, w/ww, 7062/7742<br>Method: SW-846 7062/7742 | Batch: w153 | | |
| 1451 | Selenium by HAA, w/ww, 7742<br>Method: SW-846 7742 | ND | mg/l | 0.002 |
| 7245 | Arsenic by ICP, w/ww, 6010A<br>Method: SW-846 6010A | ND | mg/l | 0.04 |
| 7246 | Barium by ICP, w/ww, 6010A<br>Method: SW-846 6010A | 0.094 | mg/l | 0.003 |
| 7249 | Cadmium by ICP, w/ww, 6010A<br>Method: SW-846 6010A | ND | mg/l | 0.004 |
| 7251 | Chromium by ICP, w/ww, 6010A<br>Method: SW-846 6010A | ND | mg/l | 0.010 |
| 7255 | Lead by ICP, w/ww, 6010A<br>Method: SW-846 6010A | ND | mg/l | 0.050 |
| 7266 | Silver by ICP, w/ww, 6010A<br>Method: SW-846 6010A | ND | mg/l | 0.005 |

Analytical Report



Mountain States Analytical, Inc.
*The Quality Solution*

On Site Technologies, Ltd.

MSAI Sample: 76103
MSAI Group: 21367

Sample ID: 9803004-01C

| Test | Analysis | Results as Received | Units | Method Detection Limit |
|---|---|---|---|---|
| 0939 | Sample Filtering, ww, MSAI<br>Method: IN HOUSE MSAI | Complete | | |

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

# Certificate of Analysis No. H9-9803228-01

On Site Technologies
612 East Murray
Farmington, NM 87401
ATTN: David Cox

03/23/98

**PROJECT:** PAH Analysis
**SITE:** Farmington, NM
**SAMPLED BY:** On Site Technologies
**SAMPLE ID:** 9803004-01B

**PROJECT NO:**
**MATRIX:** WATER
**DATE SAMPLED:** 03/02/98 11:15:00
**DATE RECEIVED:** 03/05/98

## ANALYTICAL DATA

| PARAMETER | RESULTS | PQL* | UNITS |
|---|---|---|---|
| Acenaphthene | ND | 25 | ug/L |
| Acenaphthylene | ND | 25 | ug/L |
| Aniline | ND | 25 | ug/L |
| Anthracene | ND | 25 | ug/L |
| Benzo(a)Anthracene | ND | 25 | ug/L |
| Benzo(b)Fluoranthene | ND | 25 | ug/L |
| Benzo(k)Fluoranthene | ND | 25 | ug/L |
| Benzo(a)Pyrene | ND | 25 | ug/L |
| Benzoic Acid | ND | 120 | ug/L |
| Benzo(g,h,i)Perylene | ND | 25 | ug/L |
| Benzyl alcohol | ND | 25 | ug/L |
| 4-Bromophenylphenyl ether | ND | 25 | ug/L |
| Butylbenzylphthalate | ND | 25 | ug/L |
| di n-Butyl phthalate | ND | 25 | ug/L |
| Carbazole | ND | 25 | ug/L |
| 4-Chloroaniline | ND | 25 | ug/L |
| bis(2-Chloroethoxy)Methane | ND | 25 | ug/L |
| bis(2-Chloroethyl)Ether | ND | 25 | ug/L |
| bis(2-Chloroisopropyl)Ether | ND | 25 | ug/L |
| 4-Chloro-3-Methylphenol | ND | 25 | ug/L |
| 2-Chloronaphthalene | ND | 25 | ug/L |
| 2-Chlorophenol | ND | 25 | ug/L |
| 4-Chlorophenylphenyl ether | ND | 25 | ug/L |
| Chrysene | ND | 25 | ug/L |
| Dibenz(a,h)Anthracene | ND | 25 | ug/L |
| Dibenzofuran | ND | 25 | ug/L |
| 1,2-Dichlorobenzene | ND | 25 | ug/L |
| 1,3-Dichlorobenzene | ND | 25 | ug/L |
| 1,4-Dichlorobenzene | ND | 25 | ug/L |
| 3,3'-Dichlorobenzidine | ND | 50 | ug/L |
| 2,4-Dichlorophenol | ND | 25 | ug/L |
| Diethylphthalate | ND | 25 | ug/L |
| 2,4-Dimethylphenol | ND | 25 | ug/L |
| Dimethyl Phthalate | ND | 25 | ug/L |
| 4,6-Dinitro-2-Methylphenol | ND | 120 | ug/L |
| 2,4-Dinitrophenol | ND | 120 | ug/L |
| 2,4-Dinitrotoluene | ND | 25 | ug/L |
| 2,6-Dinitrotoluene | ND | 25 | ug/L |

METHOD: 8270C, Semivolatile Organics - Water
(continued on next page)

## Certificate of Analysis No. H9-9803228-01

On Site Technologies **SAMPLE ID:** 9803004-01B

**ANALYTICAL DATA** (continued)

| PARAMETER | RESULTS | PQL* | UNITS |
|---|---|---|---|
| 1,2-Diphenylhydrazine | ND | 25 | ug/L |
| bis(2-Ethylhexyl) Phthalate | ND | 25 | ug/L |
| Fluoranthene | ND | 25 | ug/L |
| Fluorene | ND | 25 | ug/L |
| Hexachlorobenzene | ND | 25 | ug/L |
| Hexachlorobutadiene | ND | 25 | ug/L |
| Hexachloroethane | ND | 25 | ug/L |
| Hexachlorocyclopentadiene | ND | 25 | ug/L |
| Indeno(1,2,3-cd) Pyrene | ND | 25 | ug/L |
| Isophorone | ND | 25 | ug/L |
| 2-Methylnaphthalene | ND | 25 | ug/L |
| 2-Methylphenol | 35 | 25 | ug/L |
| 4-Methylphenol | 58 | 25 | ug/L |
| Naphthalene | ND | 25 | ug/L |
| 2-Nitroaniline | ND | 120 | ug/L |
| 3-Nitroaniline | ND | 120 | ug/L |
| 4-Nitroaniline | ND | 120 | ug/L |
| Nitrobenzene | ND | 25 | ug/L |
| 2-Nitrophenol | ND | 25 | ug/L |
| 4-Nitrophenol | ND | 120 | ug/L |
| N-Nitrosodiphenylamine | ND | 25 | ug/L |
| N-Nitroso-Di-n-Propylamine | ND | 25 | ug/L |
| Di-n-Octyl Phthalate | ND | 25 | ug/L |
| Pentachlorophenol | ND | 120 | ug/L |
| Phenanthrene | ND | 25 | ug/L |
| Phenol | ND | 25 | ug/L |
| Pyrene | ND | 25 | ug/L |
| Pyridine | ND | 25 | ug/L |
| 1,2,4-Trichlorobenzene | ND | 25 | ug/L |
| 2,4,5-Trichlorophenol | ND | 50 | ug/L |
| 2,4,6-Trichlorophenol | ND | 25 | ug/L |

METHOD: 8270C, Semivolatile Organics - Water

(continued on next page)

## Certificate of Analysis No. H9-9803228-01

On Site Technologies **SAMPLE ID:** 9803004-01B

| SURROGATES | AMOUNT SPIKED | % RECOVERY | LOWER LIMIT | UPPER LIMIT |
|---|---|---|---|---|
| Nitrobenzene-d5 | 50 ug/L | 88 | 35 | 114 |
| 2-Fluorobiphenyl | 50 ug/L | 100 | 43 | 116 |
| Terphenyl-d14 | 50 ug/L | 200 « | 33 | 141 |
| Phenol-d5 | 75 ug/L | 28 | 10 | 110 |
| 2-Fluorophenol | 75 ug/L | 85 | 21 | 110 |
| 2,4,6-Tribromophenol | 75 ug/L | 84 | 10 | 123 |

ANALYZED BY: RY DATE/TIME: 03/09/98 16:47:00
EXTRACTED BY: DR DATE/TIME: 03/06/98 13:00:00
METHOD: 8270C, Semivolatile Organics - Water
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
« Recovery outside of control limits.

**COMMENTS:**

**QUALITY ASSURANCE:** These analyses are performed in accordance with EPA guidelines for quality assurance.

# Certificate of Analysis No. H9-9803228-01

On Site Technologies
612 East Murray
Farmington, NM 87401
ATTN: David Cox

DATE: 03/23/98

**PROJECT:** PAH Analysis
**SITE:** Farmington, NM
**SAMPLED BY:** On Site Technologies
**SAMPLE ID:** 9803004-01B

**PROJECT NO:**
**MATRIX:** WATER
**DATE SAMPLED:** 03/02/98 11:15:00
**DATE RECEIVED:** 03/05/98

## ANALYTICAL DATA

| PARAMETER | RESULTS | DETECTION LIMIT | UNITS |
|---|---|---|---|
| Liquid-liquid extraction SEMIVOLATILES Method 3520C *** | 03/06/98 | | |
| Analyzed by: DR | | | |
| Date: 03/06/98 13:00:00 | | | |

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

**QUALITY ASSURANCE:** These analyses are performed in accordance with EPA guidelines for quality assurance.

# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murphy Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 3/2/98

Page: 1 of 1

| | | | |
|---|---|---|---|
| Purchase Order No.: | | Job No. | |
| SEND INVOICE TO | Name | Denver Bearden | |
| | Company | PNM Gas Services | Dept. 324-3763 |
| | Address | 603 W. Elm Street | |
| | City, State, Zip | Farmington, NM 87401 | |

| | | | |
|---|---|---|---|
| REPORT RESULTS TO | Name | Maureen Gannon | Title |
| | Company | PNM Gas Services | |
| | Mailing Address | Alverado Square, Mail Stop 0408 | |
| | City, State, Zip | Albuquerque, NM 87158 | |
| | Telephone No. | 505-848-2974 | Telefax No. |

Sampling Location: Dogie East Pit

Sampler: M.S. R.D. R.B

| SAMPLE IDENTIFICATION | SAMPLE DATE | SAMPLE TIME | MATRIX | PRES. | Number of Containers | BTEX 8020 | PAH Semi-Vol 8310 | WQCC Metals Dissolved (water quality cation/anion balance | | | | | | | LAB ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | A | B | C | D | | | | | | |
| 9803021115 | 3/2/98 | | H2O | | 5 | X | X | X | X | | | | | | 9803004-01 |

| | | | |
|---|---|---|---|
| Relinquished by: | Date/Time 3/2/98 1530 | Received by: | Date/Time 3/2/98 1530 |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment: Hand Delivered

Authorized by: _____ Date 3/2/98
(Client Signature Must Accompany Request)

| Rush | 24-48 Hours | 10 Working Days | Special Instructions: |
|---|---|---|---|
| | | | **Results to be sent to both parties.** |

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client