3R - 264

# GENERAL CORRESPONDENCE

YEAR(S):
2005 - 1998

MARTIN YATES, III
1912 - 1985
FRANK W. YATES
1936 - 1986

YATES PETROLEUM CORPORATION

105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210-2118
TELEPHONE (505) 748-1471

S. P. YATES
CHAIRMAN OF THE BOARD
JOHN A. YATES
PRESIDENT
PEYTON YATES
EXECUTIVE VICE PRESIDENT
RANDY G. PATTERSON
SECRETARY
DENNIS G. KINSEY
TREASURER

3R0264

RECEIVED
SEP 26 2005
OIL CONSERVATION DIVISION

September 23, 2005

Mr. Mark E. Fesmire, P.E. Director
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Miller D#1 Pit Site
Case #3R-264
San Juan County, New Mexico

Dear Mr. Fesmire:

Pursuant to our communication on the internet, I am enclosing a copy of the letter from the New Mexico Oil Conservation Division that closes the Miller D#1 Site Groundwater Program. We hereby request that you remove the Miller D#1 from your water spill contaminations sites posted on the web.

If you have any questions please give me a call at 505-748-4349.

Very truly yours,

**YATES PETROLEUM CORPORATION**

Chuck Moran
Landman

CEM/th

Enclosure:

Drew Peddersby Darrick Stelling

# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**
Governor
**Joanna Prukop**
Cabinet Secretary

**Lori Wrotenbery**
Director
**Oil Conservation Division**

June 11, 2003

Ms. Lisa Norton
Yates Petroleum Corporation
105 South Fourth St.
Artesia, New Mexico 88210

**RE: MILLER D#1 PIT SITE**
**CASE # 3R-264**
**SAN JUAN COUNTY, NEW MEXICO**

Dear Ms. Norton:

The New Mexico Oil Conservation Division (OCD) has reviewed Yates Petroleum Corporation's April 28, 2003 "GROUND WATER ASSESSMENT, MILLER D1, SAN JUAN COUNTY, NEW MEXICO" and April 4, 2003 "GROUND WATER ASSESSMENT, MILLER D1, SAN JUAN COUNTY, NEW MEXICO". These documents contain the results of Yates' remediation and monitoring of contaminated soils and ground water related to a former unlined pit at Yates' Miller D#1 pit site located in Unit M, Section 20, Township 30 North, Range 13 West, San Juan County, New Mexico. The documents also request final closure approval of the site.

The soil and ground water remediation activities are satisfactory and OCD approves the final site closure on the condition that Yates plug and abandon all monitor wells by cutting the casing below the ground surface and filling the casing annulus with a cement grout containing 3-5% bentonite. Please be advised that OCD approval does not relieve Yates of responsibility if remaining contaminants are found to pose a future threat to surface water, ground water, human health or the environment. In addition, OCD approval does not relieve Yates of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions, please contact me at (505) 476-3491.

Sincerely,

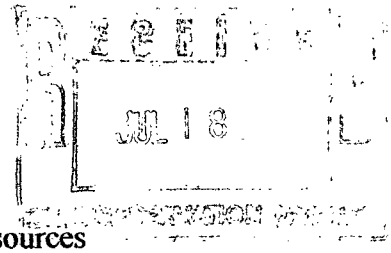
William C. Olson
Hydrologist
Environmental Bureau

cc: Denny Foust, OCD Aztec District Office
Kyle Kerr, Envirotech, Inc.

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

3R264



July 16, 2003

Job # 00110-005

Energy, Minerals, and Natural Resources
State of New Mexico Oil Conservation Division
Attn: Bill Olson
1220 S. St. Francis Road
Santa Fe, New Mexico 87501

Phone (505) 476-3491

**RE: MONITOR WELL PLUG AND ABANDON AT THE MILLER D-1 WELL SITE LOCATED IN SAN JUAN COUNTY, NEW MEXICO**

Dear Mr. Olson:

Envirotech Inc. has completed the decommissioning and abandonment of three (3) monitor wells located at the Miller D-1 well site located in San Juan County, New Mexico. The decommissioning and abandonment of the monitor wells was completed on July 15, 2003. All casing was removed, the aboveground completion was removed, and the boring hole was filled with a cement slurry mixture.

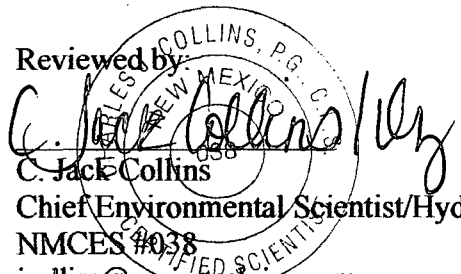
If you have any questions or need additional information, please do not hesitate to contact me at (505) 632-0615.

We recommend no further action at this site and that the site be considered closed. If you have any questions or need additional information, please do not hesitate to contact us at (505) 632-0615.

Respectfully Submitted,
ENVIROTECH INC.

Kyle Kerr
Environmental Scientist
NMCES #299
kpkerr@envirotech-inc.com

Reviewed by:



C. Jack Collins
Chief Environmental Scientist/Hydrogeologist
NMCES #038
jcollins@envirotech-inc.com

Morris D. Young
President
NMCES #098
myoung@envirotech-inc.com

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

April 28, 2003

Job # 00110-001

RECEIVED

MAY 01 2003

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Energy, Minerals, and Natural Resources
State of New Mexico Oil Conservation Division
Attn: Bill Olson
1220 S. St. Francis Road
Santa Fe, New Mexico 87501

**RE: GROUND WATER ASSESSMENT, MILLER D1, SAN JUAN COUNTY, NEW MEXICO**

Dear Mr. Olson:

Enclosed, please find a copy of the Groundwater Assessment report dated March 7, 2001, and a water level map with water gradient information from the December 2002 sampling event for the Miller D1 located in San Juan County, New Mexico.

Should you have any questions or need additional information, please do not hesitate to contact us at (505) 632-0615.

Sincerely,

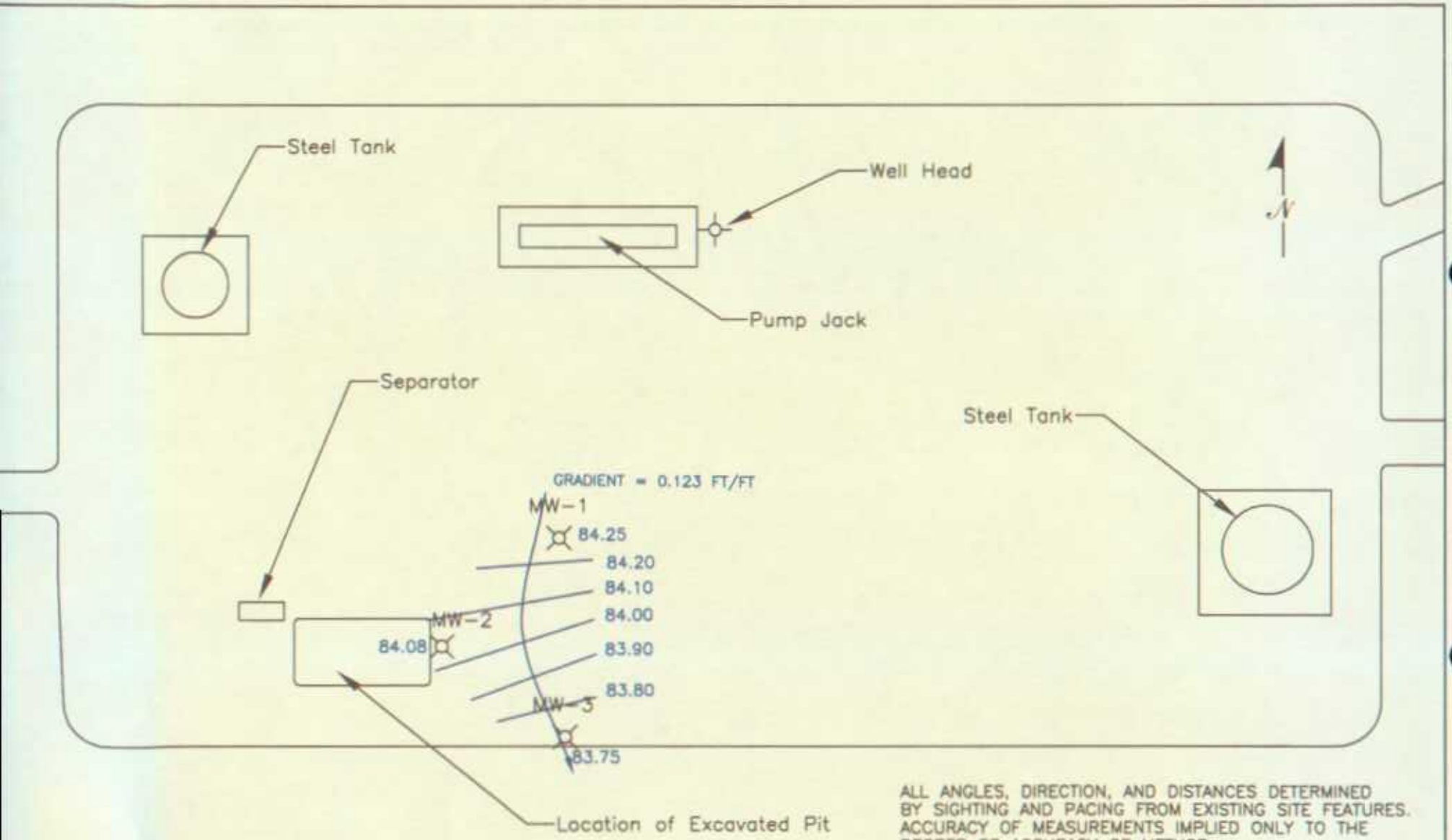
**ENVIROTECH INC.**

Kyle Kerr
Environmental Scientist
kpkerr@envirotech-inc.com

Enclosure: Ground Water Assessment Report
Water Level Map

Cc: File No. 00110

KPK/F:\Projects\Yates Petroleum\December 01\Cover Letter-Olson2.doc




ALL ANGLES, DIRECTION, AND DISTANCES DETERMINED BY SIGHTING AND PACING FROM EXISTING SITE FEATURES. ACCURACY OF MEASUREMENTS IMPLIED ONLY TO THE DEGREE OF ACCURACY OF METHOD.

LEGEND

- Monitor Well Location
- MW-2 Monitor Well Number
- 79.0' Groundwater Contour, Contour Interval = 0.1 foot
- Groundwater Flow Direction

YATES PETROLEUM CORPORATION
MILLER D-1 SEPARATOR
PIT REMEDIATION
"M" SEC. 21, T30N, R13W
SAN JUAN COUNTY, NM

REVISIONS
BY KPK DATE 04/25/03
BY ___ DATE ___

JOB 00110-004

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632-0615

WATER LEVEL MAP
SAMPLE DATE: 12/03/02

DATE 01/22/01 DRAWN TLC
SCALE 1 = 30 APPROVED CJC

FIGURE 1

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# GROUND WATER ASSESSMENT

# AT

# MILLER D1
# SAN JUAN COUNTY
# NEW MEXICO



# FOR

# YATES PETROLEUM CORPORATION
# 105 SOUTH 4TH STREET
# ARTESIA, NEW MEXICO

# PROJECT NO. 00110-001

# MARCH 7, 2001

5796 U.S. HIGHWAY 64 • FARMINGTON, NM 87401 • (505) 632-0615

# GROUND WATER ASSESSMENT

AT

MILLER D1
SAN JUAN COUNTY
NEW MEXICO

SUBMITTED FOR

Mr. David Haggith
Yates Petroleum Corporation
105 South 4th Street
Artesia, New Mexico 88210
(505) 748-4223

SUBMITTED BY

Envirotech, Inc.
5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

Project No. 00110-001

March 7, 2001

## Introduction

Envirotech Inc of Farmington, New Mexico, was contracted by Yates Petroleum Corporation of Artesia, New Mexico, to drill, install, complete, and sample three monitor wells at the Miller D1well site. The site is located in SW,SW, Sec. 21, T.30N.,R.13W of San Juan County, New Mexico. It is within the old flood plain and the shallow valley formed by the La Plata River. The location of the site is shown on ***Figure 1***, Area Map, from U.S.G.S Farmington North Topographic Map. The purpose of the monitor wells was to test for any groundwater that may have been impacted at a former unlined separator pit. This pit had previously been excavated and backfilled with clean fill material by Envirotech during the Fall of 1999.

## Monitor Well Installation

Three monitor wells were installed to establish the ground water flow gradient, and test the water for any possible hydrocarbon contamination. The location of the monitor wells and the former separator pit is shown on ***Figure 2***. Site Map. The wells were drilled using a portable truck mounted drill rig, equipped with hollow stem augers. All 3 wells were drilled and completed to approximately 24 feet below ground surface during January 16 & 17, 2001. Ground water was encountered at approximately 15 feet below ground surface. The wells were completed using 2" SCHD 40 flush joint threaded PVC casing and 15 feet of 0.010 slot screen.
Sediments encountered included 10 -15 feet of Recent to Quaternary Alluvium, sand, clay and up to 10 feet of pebble to cobble sized material. Consolidated shales and sandstone sediments were encountered at approximately 21 feet below ground surface. These sediments are believed to be Tertiary in age, similar to those exposed on either side of the La Plata River. During drilling, soil samples were collected for lithology and measurement of hydrocarbon vapors using a photo ionization detector (PID). Soil boring and monitor well completion logs are included as ***Appendix B***.

## Sampling and Analysis

The monitor wells were developed by purging with a disposable bailer. Water samples were collected after purging the wells of 3 well casing volumes of water. The samples were analyzed for benzene, toluene, ethylene benzene, and total xylenes, (BTEX), by USEPA Method 8021B, total petroleum hydrocarbons (TPH), by USEPA Method 8015, RCRA metals by USEPA Method 6010B, PAHS by USEPA Method 8310, and major cations/anions water quality analysis. Samples were collected from MW-1 & MW-2 on January 17, 2001. MW-3 was dry during this time period when it was completed. It was checked approximately two weeks later on February 2, 2001, found to have water and was then sampled. Water levels were measured on the other 2 wells on that same day.

Top of casing (TOC) relative elevations were surveyed assuming MW-1 had an elevation of 100.00 ft. Ground water gradient is to the south and east at 0.12 ft./ft and is shown on ***Figure 3***. This gradient may or may not be representative as it is not known if MW-3 water level has stabilized. Additional monitoring will verify this gradient. Elevations and water level measurements are summarized in ***Table 1.***

Monitor wells MW-1 & MW-2 had detectable amounts of BTEX, but these were well below the New Mexico Water Quality Standards (NMWQCC). Monitor well MW-3 BTEX was below detection levels. BTEX analysis are shown on ***Figure 4*** and summarized in ***Table 2***.

TPH results were all below detection limits and are summarized in ***Table 3***. RCRA metals arsenic, barium, cadmium, chromium, lead, selenium and silver were detected in the ground water but were below NMWQCC standards. The RCRA metal analysis are summarized in ***Table 4***. PAHS analysis were all below detection limits.

Cation/Anion analysis showed total dissolved solids TDS to vary from 1600 to 1800 mg/L, indicating a usable quality water for agriculture, but below standards for drinking water. The water is moderately hard and has chlorides that vary from 456 to 545 mg/L that would give it a slightly salty taste.

Based on the results of this sampling, there is only minimal impact on the ground water from the former separator pit and it is confined to the perimeter of the old pit. As requested by the New Mexico Oil Conservation Division (OCD), three more quarters of monitoring and sampling are scheduled for the year.

Certificates of analysis from the laboratory for all samples are included as ***Appendix B.***

## Closure and Limitations

The undersigned certifies they are familiar with the work completed in this report and that the work was done in accordance with generally acceptable practices of geology, hydrology and environmental science. The results presented within this report are representative of the conditions present during the time the investigation and sampling was conducted.

Respectfully Submitted by:
**Envirotech Inc.**

C. Jack Collins, P.G. # 1822
Chief Geologist/Environmental Scientist
NMCES # 038

Reviewed by :

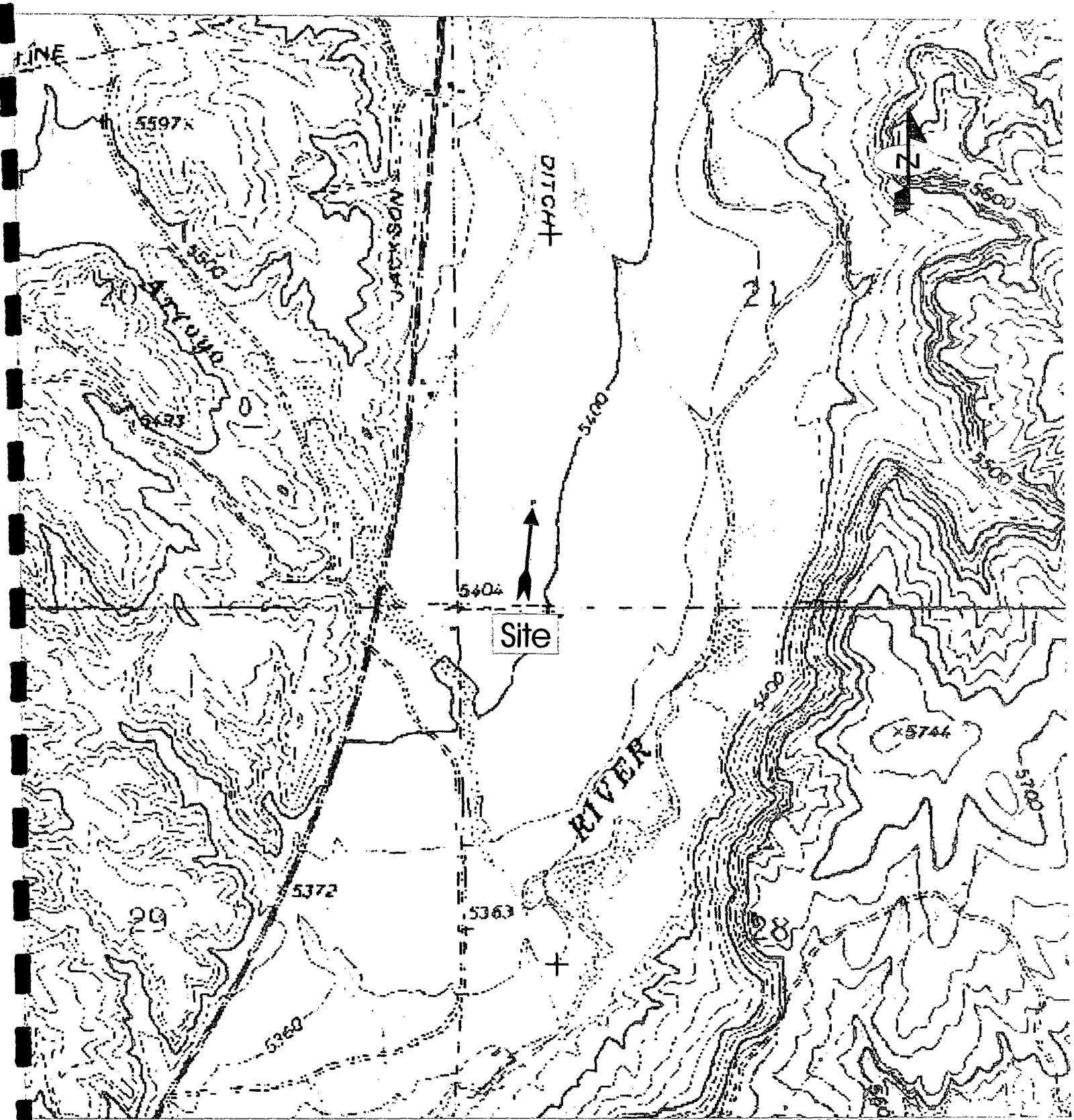
Morris D. Young
President
NMCES # 096

# APPENDIX A.

## Figures

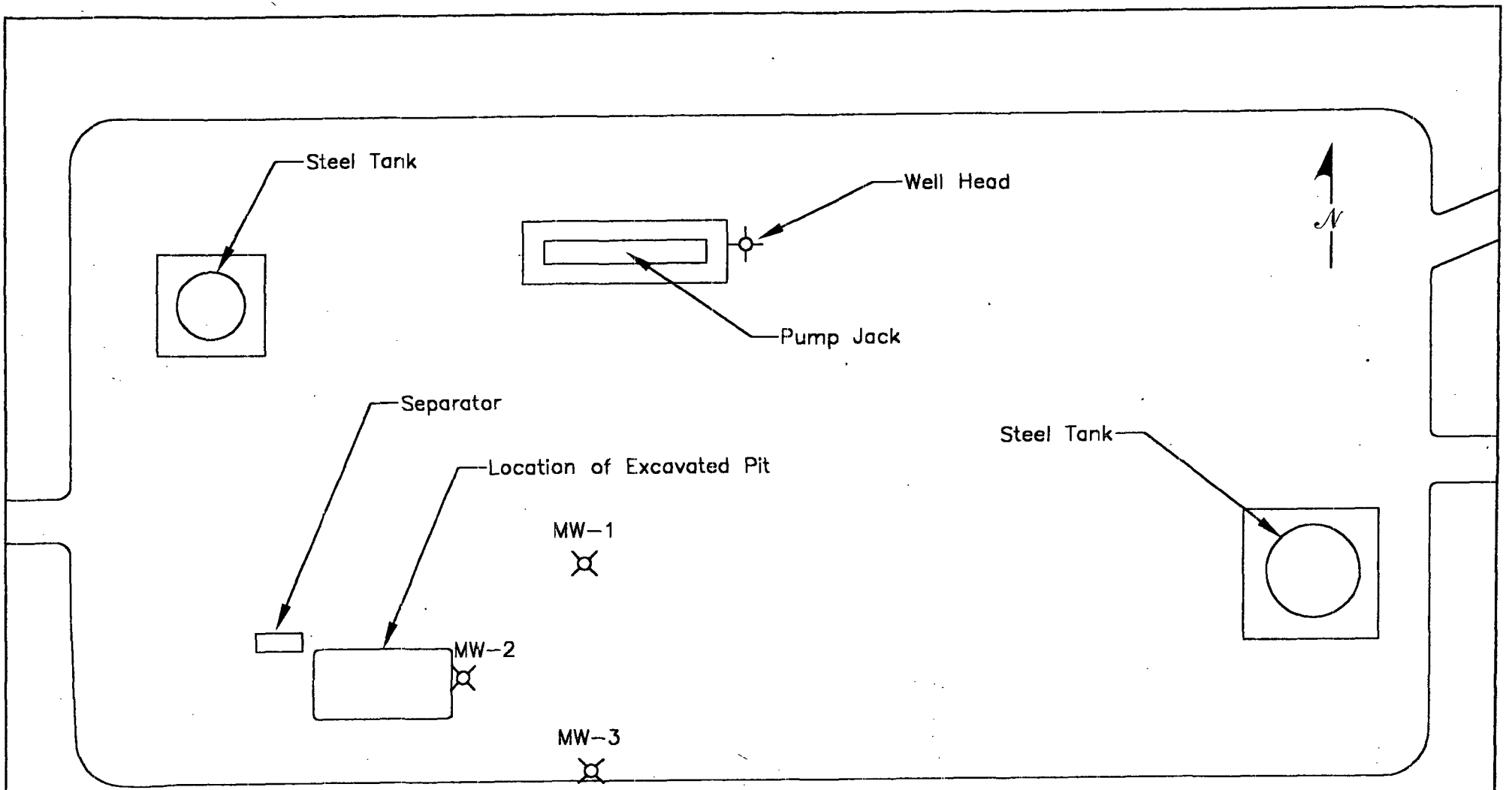
## Tables

## Monitor Well Lithology Logs




Source: Farmington North, New Mexico 7.5 Minute U.S.G.S. Topographic Quadrangle Map M Section 21 T30N R13W
Scale: 1:24,000 1" = 2000'

| | | |
|---|---|---|
| Yates Petroleum Corporation<br>Miller D-1 Separator Pit Remediation<br>"M" Section 21, T30N, R13W<br>San Juan County, New Mexico | ENVIROTECH INC.<br>ENVIRONMENTAL SCIENTISTS & ENGINEERS<br>5796 U.S. HIGHWAY 64<br>FARMINGTON, NEW MEXICO 87401<br>PHONE (505) 632-0615 | Area Map<br>Miller D-1 Separator Pit Remediation<br>Figure 1 |
| Project# 00110001 \| Date Drawn: 03/01/01 | | Drawn By: Jodi Saunders \| PROJECT MANAGER: Harlan Brown |




ALL ANGLES, DIRECTION, AND DISTANCES DETERMINED BY SIGHTING AND PACING FROM EXISTING SITE FEATURES. ACCURACY OF MEASUREMENTS IMPLIED ONLY TO THE DEGREE OF ACCURACY OF METHOD.

LEGEND

MW-2 Monitor Well Location

MW-2 Monitor Well Number

YATES PETROLEUM CORPORATION
MILLER D-1 SEPARATOR
PIT REMEDIATION
"M", SEC. 21, T30N, R13W
SAN JUAN COUNTY, NM

REVISIONS
BY ___ DATE ___
BY ___ DATE ___

JOB 00110001

ENVIROTECH INC.

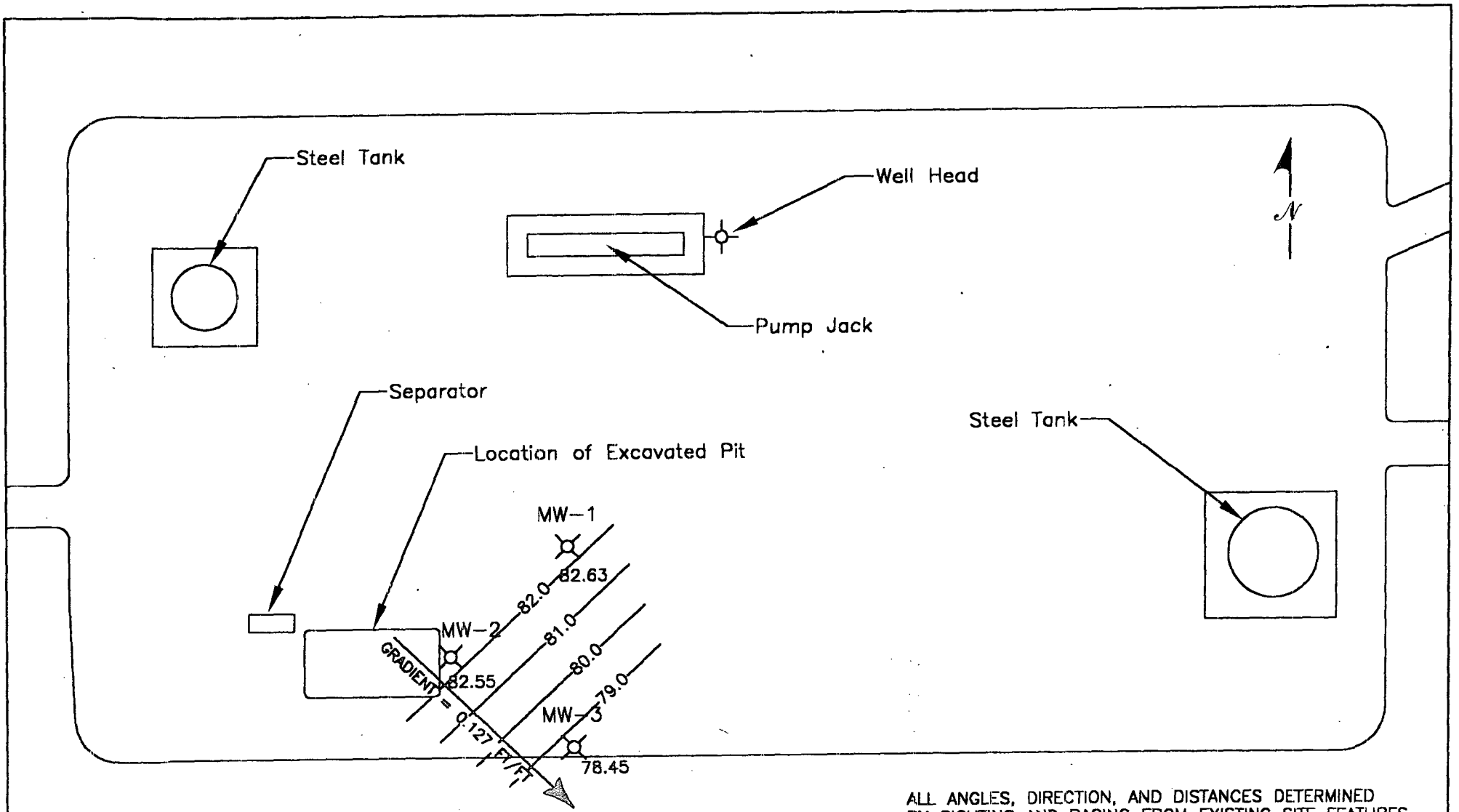
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632-0615

SITE MAP

SAMPLE DATE: 01/17/01 AND 02/01/01

DATE 01/22/01 DRAWN TLC
SCALE 1 = 30 APPROVED CJC

FIGURE 2




ALL ANGLES, DIRECTION, AND DISTANCES DETERMINED BY SIGHTING AND PACING FROM EXISTING SITE FEATURES. ACCURACY OF MEASUREMENTS IMPLIED ONLY TO THE DEGREE OF ACCURACY OF METHOD.

LEGEND

- Monitor Well Location
- MW-2 Monitor Well Number
- 78.0' Groundwater Contour, Contour Interval = 1 foot
- Groundwater Flow Direction

YATES PETROLEUM CORPORATION
MILLER D-1 SEPARATOR
PIT REMEDIATION
"M", SEC. 21, T30N, R13W
SAN JUAN COUNTY, NM

REVISIONS
BY ___ DATE ___
BY ___ DATE ___

JOB 00110001

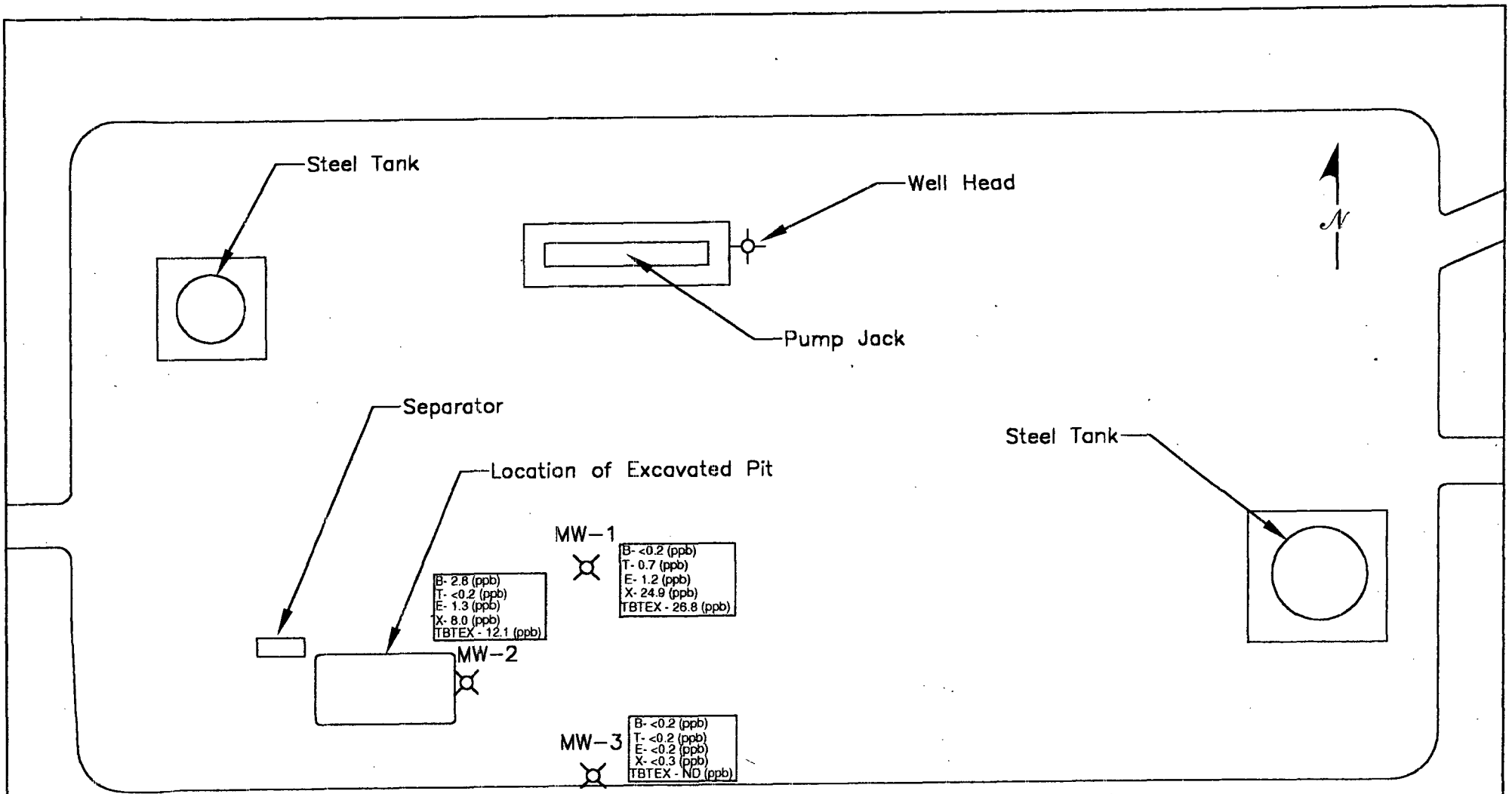
ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632-0615

# WATER LEVEL MAP

SAMPLE DATE: 01/17/01 AND 02/01/01

DATE 01/22/01 DRAWN TLC
SCALE 1 = 30 APPROVED CJC

FIGURE 3




ALL ANGLES, DIRECTION, AND DISTANCES DETERMINED BY SIGHTING AND PACING FROM EXISTING SITE FEATURES. ACCURACY OF MEASUREMENTS IMPLIED ONLY TO THE DEGREE OF ACCURACY OF METHOD.

LEGEND

Monitor Well Location

MW-2 Monitor Well Number

B- Benzene (ppb)
T- Toluene (ppb)
E- Ethylbenzene (ppb)
X- Total Xylenes (ppb)
TBTEX - Total BTEX (ppb)

YATES PETROLEUM CORPORATION
MILLER D-1 SEPARATOR
PIT REMEDIATION
"M", SEC. 21, T30N, R13W
SAN JUAN COUNTY, NM

REVISIONS
BY ____ DATE ____
BY ____ DATE ____

JOB 00110001

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632-0615

BTEX CONCENTRATION IN GROUNDWATER
SAMPLE DATE: 01/17/01 AND 02/01/01

DATE 01/22/01 DRAWN TLC
SCALE 1 = 30 APPROVED CJC

FIGURE 4

Company Yates Petroleum Corp.
Miller D1 Separator Pit
Date Mar-01
Job 00110001

Table 1
Water Level Measurements

| Well # | Sample Date | Water Depth (ft.) TOC | TOC Elevation ft | WL Elevation ft |
|---|---|---|---|---|
| MW-1 | 2/2/2001 | 17.37 | 100.00 | 82.63 |
| MW-2 | 2/2/2001 | 18.31 | 100.86 | 82.55 |
| MW-3 | 2/2/2001 | 23.77 | 102.22 | 78.450 |

Company Yates Petroleum Corp
Miller D-1Seperator
Pit Remeditation
Date Mar-01
Job # 00110001

Table 2
Laboratory Results of Ground Water Sample Analyses for BTEX

| NMED Action Levels | | | 10 | 750 | 750 | 620 | NA |
|---|---|---|---|---|---|---|---|
| Well # | Sample Date | Sample Depth (ft.) TOC | ppb(ug/L) Benzene | Touluene | Ethyl-Benzene | Total Xylenes | Total BTEX |
| MW-1 | 01/17/01 | 17.4-19.4 | <0.2 | 0.7 | 1.2 | 24.9 | 26.8 |
| MW-2 | 01/17/01 | 18.3-20.3 | 2.8 | <0.2 | 1.3 | 8 | 12.1 |
| MW-3 | 02/02/01 | 23.8-25.8 | <0.2 | <0.2 | <0.2 | <0.3 | ND |

Note: Values in Bold Exceed New Mexico Water Qualtiy Control Commission (NMWQCC) Standards
ND = Not Detected ppb = parts per billion

| | |
|---|---|
| Company | Yates Petroleum Corp. |
| | Miller D-1Seperator |
| | Pit Remeditation |
| Date | Mar-01 |
| Job # | 00110001 |

Table 3
Laboratory Results of Ground Water Sample Analyses for Total Petroleum Hydrocarbons

| EPA METHOD 8015 | | ppm(mg/L) | | | |
|---|---|---|---|---|---|
| Well # | Sample Date | Sample Depth (ft.) TOC | Gasoline Range (C5-C10 | Diesel Range (C10-C28) | Total Petroleum Hydrocarbons |
| MW-1 | 1/17/2001 | 17.4-19.4 | <0.2 | <0.1 | <0.2 |
| MW-2 | 1/17/2001 | 18.3-20.3 | <0.2 | <0.1 | <0.2 |
| MW-3 | 2/2/2001 | 23.8-25.8 | <0.2 | <0.1 | <0.2 |

Note: Values in Bold Exceed New Mexico Water Qualtiy Control Commission (NMWQCC) Standards
ND = Not Detected ppm = parts per million

Company Yates Petroleum Corp
Miller D-1 Seperator
Pit Remediation
Date Mar-01
Job # 00110001

Table 4
Laboratory Results of Ground Water Sample Trace Metal Analysis

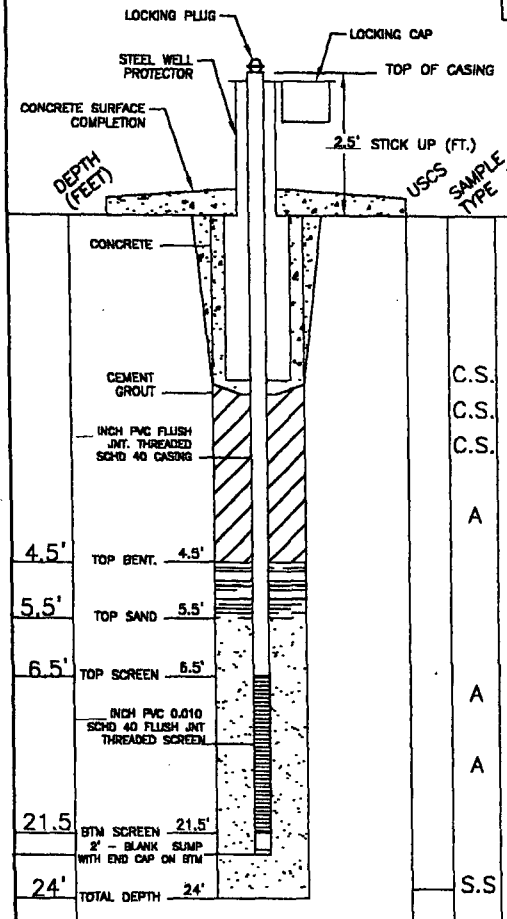
| | | | ppm(mg/L) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Well # | Sample Date | Sample Depth (ft.) TOC | Arsenic | Barium | Cadmium | Chromium | Lead | Mercury | Selenium | Silver |
| MW-1 | 1/17/2001 | 17.4-19.4 | 0.017 | 0.039 | 0.014 | 0.014 | 0.094 | <0.001 | 0.007 | 0.018 |
| MW-2 | 1/17/2001 | 18.3-20.3 | 0.010 | 0.033 | 0.007 | 0.004 | 0.089 | <0.001 | 0.002 | 0.008 |
| MW-3 | 2/2/2001 | 23.8-25.8 | 0.045 | 0.060 | 0.016 | 0.010 | 0.027 | <0.001 | 0.009 | <0.001 |

Note: Values in Bold Exceed New Mexico Water Qualtiy Control Commission (NMWQCC) Standards
ND = Not Detected ppm = parts per million

# ABOVE GRADE WELL COMPLETION DIAGRAM / LITHOLOGY LOG

MW 1

SB




| DEPTH (FEET) | USCS | SAMPLE TYPE | HEADSPACE (PPM) | LITHOLOGY | SAMPLE DESCRIPTION |
|---|---|---|---|---|---|
| | | | | | SAND, CLAY, TAN BROWN |
| | | | | | DRY, NO ODOR, CLAY HARD |
| | | | | | SAND FINE–MED YELLOW–ORANGE |
| 4 | | | 0.0 | | DRY, SOFT, NO ODOR |
| | | C.S. | | | |
| | | C.S. | | | SAME AS ABOVE |
| | | C.S. | | | CLAY, RED BROWN, DRY, NO ODOR |
| 8 | | | | | PEBBLE, COBBLE 1 1/2"–3" |
| | | A | N.S. | | HARD DRILLING |
| 12 | | | | | SANDY, CLAY/COBBLES AS ABOVE |
| | | A | N.S. | | |
| | | | | | DRILLS LIKE SAND/COBBLES |
| 16 | | A | | | |
| | | | W.L. | | SAND, FINE, SLIGHTLY CONSOLIDATED |
| 20 | | S.S | | | YELLOW–GREEN, SLIGHTLY MOIST |
| | | A | | | |
| | | | | | SAND, FIRM, WET, NO ODOR |
| 24 | | | | | TD – 24' |
| 28 | | | | | |
| 32 | | | | | |
| 36 | | | | | |

Well Materials Used:

8 Sks 10–12 Silica Sand
1 Sks Bentonite Chips
1 Sks Class "A" Cement
1 Sks Quickcrete
___ Ft Blank Casing
___ Ft Screen

Well Development:
5 gal. Bailed
_____ Pumped
_____ Gallons of Water

Remarks:

DRILLER: KELLY
HELPER: T.J.
DRILLING COMPANY: ENVIROTECH
DRILLING METHOD: H.S. AUGER

BIT SIZE: 7 1/2
TOTAL BORING DEPTH: 24'
DATE STARTED: 01/16/01
SAMPLER TYPE: CS, SS, AUGER

LOCATION: MILLER D#1
ELEVATION:
DATE COMPLETED 01/16/01
GEOLOGIST: JACK

YATES PETROLEUM
MILLER D #1

REVISIONS
BY ___ DATE ___
BY ___ DATE ___

JOB # 00110001

ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632–0615
AbvGrdlog.dwg

MW-1

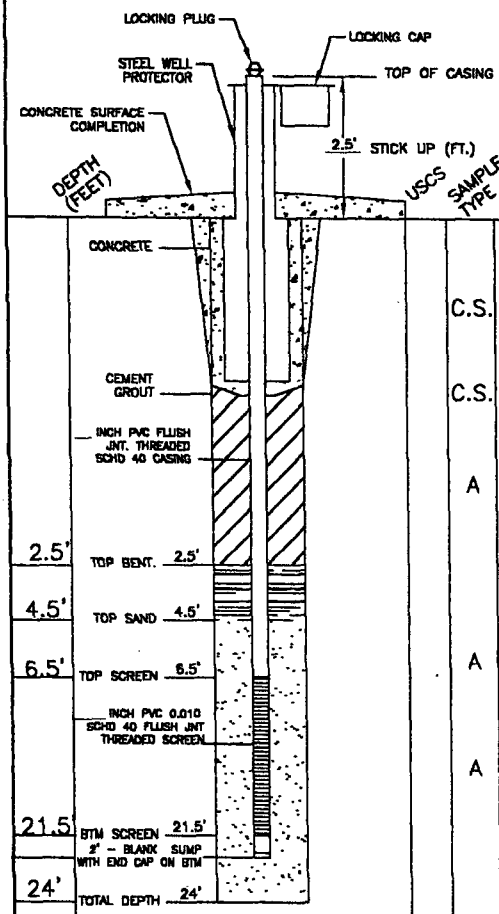
DATE 01/07/01 DRAWN CJC
SCALE NONE APPROVED ___

PAGE 1 OF 1

# ABOVE GRADE WELL COMPLETION DIAGRAM / LITHOLOGY LOG

MW 2

SB




| USCS | SAMPLE TYPE | HEADSPACE (PPM) | LITHOLOGY | SAMPLE DESCRIPTION | DEPTH (FEET) |
|---|---|---|---|---|---|
| | C.S. | 0.0 | | SAND, CLAY, BROWN<br>SAND, FINE WITH CLAY YELLOW ORANGE<br>CLAY, NO ODOR | 4 |
| | C.S. | 0.0 | | CLAY, FIRM, RED ORANGE DRY, NO ODOR | |
| | A | | | PEBBLE–COBBLE (3")<br>WITH SAND AND CLAY, MATRIX | 8 |
| | A | 0.0 | | | 12 |
| | A | | | BECOMING MORE SANDY, LESS COBBLES | 16 |
| | | W.L. | | SAND, FINE–MEDIUM/COBBLES | |
| | S.S | 0.0 | | SAND, FINE LIGHT GREY–GREEN<br>SLIGHTY MOIST FIRM/CONSOLIDATED<br>DRILLS HARD WITH CLAY | 20 |
| | A | 0.0 | | CLAY, TAN BROWN, STICKY, NO ODOR<br>TD – 24' | 24 |
| | | | | | 28 |
| | | | | | 32 |
| | | | | | 36 |

## Well Materials Used:

8 Sks 10–12 Silica Sand
1 Sks Bentonite Chips
1 Sks Class "A" Cement
1 Sks Quickcrete
___ Ft Blank Casing
___ Ft Screen

Well Development:
7 gal. Bailed
_____ Pumped
_____ Gallons of Water

Remarks:

DRILLER: KELLY
HELPER: T.J.
DRILLING COMPANY: ENVIROTECH
DRILLING METHOD: H.S. AUGER

BIT SIZE: 7 5/8
TOTAL BORING DEPTH: 24'
DATE STARTED: 01/17/01
SAMPLER TYPE: CS, SS

LOCATION: MILLER D #1
ELEVATION: _____
DATE COMPLETED 01/17/01
GEOLOGIST: JACK

YATES PETROLEUM
MILLER D #1

ENVIROTECH INC.

MW-2

REVISIONS
BY ___ DATE _____
BY ___ DATE _____

JOB # 00110001

ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632-0615
AbvGrdlog.dwg

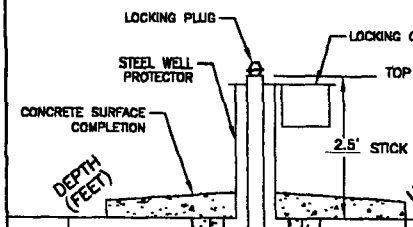
DATE 01/07/01 DRAWN CJC
SCALE NONE APPROVED ___

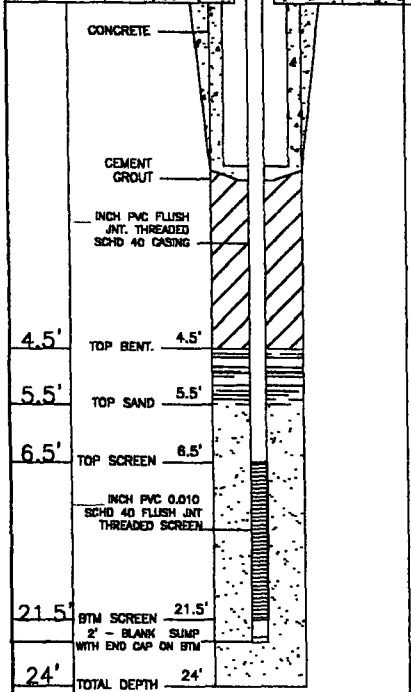
PAGE 1 OF 1

# ABOVE GRADE WELL COMPLETION DIAGRAM / LITHOLOGY LOG

MW 3

SB




| USCS | SAMPLE TYPE | HEADSPACE (PPM) | LITHOLOGY | SAMPLE DESCRIPTION | DEPTH (FEET) |
|---|---|---|---|---|---|
| | A | | | CLAY, TAN–BROWN, DRY, SOFT, NO ODOR | |
| | | 0.0 | | | 4 |
| | S.S. | | | SAND, FINE–MEDIUM, YELLOW–TAN, DRY, NO ODOR | |
| | | | | | 8 |
| | | | | SAME AS ABOVE | |
| | S.S. | 0.0 | | PEBBLES/COBBLES WITH SAND MATRIX, DRY, NO ODOR | 12 |
| | A | | | | |
| | | 0.0 | | HARD DRILLING | 16 |
| | A | | | | |
| | A | | | SAND/GRAVEL, SOFT | |
| | | | | | 20 |
| | A | | | SANDY, CLAY, TAN–BROWN FIRM, CONSOLIDATED | |
| | | | | | 24 |
| | | | | TD 24' | |
| | | | | | 28 |
| | | | | | 32 |
| | | | | | 36 |

## Well Materials Used:

8 Sks 10–12 Silica Sand
1 Sks Bentonite Chips
1 Sks Class "A" Cement
1 Sks Quickcrete
___ Ft Blank Casing
___ Ft Screen

Well Development:
3/4 gal. Bailed
_____ Pumped
_____ Gallons of Water

Remarks:

DRILLER: KELLY
HELPER: T.J.
DRILLING COMPANY: ENVIROTECH
DRILLING METHOD: H.S. AUGER

BIT SIZE: 7 5/8
TOTAL BORING DEPTH: 24'
DATE STARTED: 01/17/01
SAMPLER TYPE: CS, SS

LOCATION: MILLER D #1
ELEVATION:
DATE COMPLETED 01/17/01
GEOLOGIST: JACK

YATES PETROLEUM
MILLER D #1

ENVIROTECH INC.

MW-3

REVISIONS
BY ___ DATE ___
BY ___ DATE ___

JOB # 00110001

ENVIRONMENTAL SCIENTISTS & ENGINEERS
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FARMINGTON, NEW MEXICO 87401
(505) 632-0615
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DATE 01/07/01 DRAWN CJC
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PAGE 1 OF 1

# APPENDIX B

## Laboratory Certificates of Analysis

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## CATION / ANION ANALYSIS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 1 | Date Reported: | 01-22-01 |
| Laboratory Number: | 19113 | Date Sampled: | 01-17-01 |
| Chain of Custody: | 8472 | Date Received: | 01-17-01 |
| Sample Matrix: | Water | Date Extracted: | N/A |
| Preservative: | Cool | Date Analyzed: | 01-19-01 |
| Condition: | Cool & Intact | | |

| Parameter | Analytical Result | Units | | Units |
|---|---|---|---|---|
| **pH** | **7.04** | s.u. | | |
| **Conductivity @ 25° C** | **3,650** | umhos/cm | | |
| **Total Dissolved Solids @ 180C** | **1,810** | mg/L | | |
| **Total Dissolved Solids (Calc)** | **1,750** | mg/L | | |
| **SAR** | **0.0** | ratio | | |
| **Total Alkalinity as CaCO3** | **342** | mg/L | | |
| **Total Hardness as CaCO3** | **1,540** | mg/L | | |
| **Bicarbonate as HCO3** | **342** | mg/L | 5.61 | meq/L |
| **Carbonate as CO3** | **<0.1** | mg/L | 0.00 | meq/L |
| **Hydroxide as OH** | **<0.1** | mg/L | 0.00 | meq/L |
| **Nitrate Nitrogen** | **0.4** | mg/L | 0.01 | meq/L |
| **Nitrite Nitrogen** | **0.005** | mg/L | 0.00 | meq/L |
| **Chloride** | **456** | mg/L | 12.86 | meq/L |
| **Fluoride** | **1.20** | mg/L | 0.06 | meq/L |
| **Phosphate** | **0.5** | mg/L | 0.02 | meq/L |
| **Sulfate** | **529** | mg/L | 11.01 | meq/L |
| **Iron** | **0.013** | mg/L | | |
| **Calcium** | **443** | mg/L | 22.11 | meq/L |
| **Magnesium** | **106** | mg/L | 8.72 | meq/L |
| **Potassium** | **5.6** | mg/L | 0.14 | meq/L |
| **Sodium** | **<0.1** | mg/L | 0.00 | meq/L |
| **Cations** | | | 30.97 | meq/L |
| **Anions** | | | 29.57 | meq/L |
| **Cation/Anion Difference** | | | **4.75%** | |

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983. Water And Waste Water", 18th ed., 1992.

Comments: **La Plata ( Miller D #1 )**

Christine M Walker
Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## CATION / ANION ANALYSIS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 2 | Date Reported: | 01-22-01 |
| Laboratory Number: | 19114 | Date Sampled: | 01-17-01 |
| Chain of Custody: | 8472 | Date Received: | 01-17-01 |
| Sample Matrix: | Water | Date Extracted: | N/A |
| Preservative: | Cool | Date Analyzed: | 01-19-01 |
| Condition: | Cool & Intact | | |

| Parameter | Analytical Result | Units | | Units |
|---|---|---|---|---|
| **pH** | **7.12** | s.u. | | |
| **Conductivity @ 25° C** | **3,220** | umhos/cm | | |
| **Total Dissolved Solids @ 180C** | **1,600** | mg/L | | |
| **Total Dissolved Solids (Calc)** | **1,550** | mg/L | | |
| **SAR** | **0.0** | ratio | | |
| **Total Alkalinity as CaCO3** | **344** | mg/L | | |
| **Total Hardness as CaCO3** | **1,380** | mg/L | | |
| **Bicarbonate as HCO3** | **344** | mg/L | 5.64 | meq/L |
| **Carbonate as CO3** | **<0.1** | mg/L | 0.00 | meq/L |
| **Hydroxide as OH** | **<0.1** | mg/L | 0.00 | meq/L |
| **Nitrate Nitrogen** | **0.5** | mg/L | 0.01 | meq/L |
| **Nitrite Nitrogen** | **0.003** | mg/L | 0.00 | meq/L |
| **Chloride** | **545** | mg/L | 15.37 | meq/L |
| **Fluoride** | **1.24** | mg/L | 0.07 | meq/L |
| **Phosphate** | **0.2** | mg/L | 0.01 | meq/L |
| **Sulfate** | **316** | mg/L | 6.58 | meq/L |
| **Iron** | **0.327** | mg/L | | |
| **Calcium** | **354** | mg/L | 17.66 | meq/L |
| **Magnesium** | **122** | mg/L | 10.04 | meq/L |
| **Potassium** | **1.6** | mg/L | 0.04 | meq/L |
| **Sodium** | **<0.1** | mg/L | 0.00 | meq/L |
| **Cations** | | | 27.74 | meq/L |
| **Anions** | | | 27.67 | meq/L |
| **Cation/Anion Difference** | | | **0.27%** | |

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983. Water And Waste Water", 18th ed., 1992.

Comments: **La Plata ( Miller D #1 )**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

# CHAIN OF CUSTODY RECORD

08472

| Client / Project Name | Project Location |
|---|---|
| Yates Petroleum (Miller D #1) | La Plata (Miller D #1) |
| Sampler: CJC | Client No. 000110-001 |

ANALYSIS / PARAMETERS

| Sample No./ Identification | Sample Date | Sample Time | Lab Number | Sample Matrix | No. of Containers | BTEX - 8021 TPH 8015 | Total Metals (A) | Anion - Cation | PAH's | Trans. DEA | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 1-17-01 | 1240 | 19113 | Water | 6 | ✓✓ | ✓ | ✓ | ✓ | | | |
| MW-2 | 1-17-01 | 1400 | 19114 | Water | 6 | ✓✓ | ✓ | ✓ | ✓ | | | |

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Josh Saunders | 1-17-01 | 1630 | R. Ayers | 1-17-01 | 1630 |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |

ENVIROTECH INC.
5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

| Sample Receipt | Y | N | N/A |
|---|---|---|---|
| Received Intact | ✓ | | |
| Cool - Ice/Blue Ice | ✓ | | |

# Hall Environmental Analysis Laboratory

**Date:** *01-Feb-01*

**CLIENT:** Envirotech
**Lab Order:** 0101085
**Project:** Yates Petroleum
**Lab ID:** 0101085-01

**Client Sample ID:** MW-1/19115
**Collection Date:** 1/17/01 12:40:00 PM
**Matrix:** AQUEOUS

| Analyses | Result | Limit | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **PAHS BY 8310** | | **SW8310** | | | | Analyst: BL |
| Naphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| 1-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| 2-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Acenaphthylene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Acenaphthene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Fluorene | ND | 0.60 | | µg/L | 1 | 1/26/01 |
| Phenanthrene | ND | 0.60 | | µg/L | 1 | 1/26/01 |
| Anthracene | ND | 0.60 | | µg/L | 1 | 1/26/01 |
| Fluoranthene | ND | 0.30 | | µg/L | 1 | 1/26/01 |
| Pyrene | ND | 0.30 | | µg/L | 1 | 1/26/01 |
| Benz(a)anthracene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Chrysene | ND | 0.20 | | µg/L | 1 | 1/26/01 |
| Benzo(b)fluoranthene | ND | 0.050 | | µg/L | 1 | 1/26/01 |
| Benzo(k)fluoranthene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Benzo(a)pyrene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Dibenz(a,h)anthracene | ND | 0.040 | | µg/L | 1 | 1/26/01 |
| Benzo(g,h,i)perylene | ND | 0.030 | | µg/L | 1 | 1/26/01 |
| Indeno(1,2,3-cd)pyrene | ND | 0.080 | | µg/L | 1 | 1/26/01 |
| Surr: Benzo(e)pyrene | 85.6 | 77-104 | | %REC | 1 | 1/26/01 |

**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

# Hall Environmental Analysis Laboratory

**Date:** *01-Feb-01*

**CLIENT:** Envirotech
**Lab Order:** 0101085
**Project:** Yates Petroleum
**Lab ID:** 0101085-02

**Client Sample ID:** MW-2/ 19116
**Collection Date:** 1/17/01 2:00:00 PM
**Matrix:** AQUEOUS

| Analyses | Result | Limit | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **PAHS BY 8310** | | SW8310 | | | | Analyst: BL |
| Naphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| 1-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| 2-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Acenaphthylene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Acenaphthene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Fluorene | ND | 0.80 | | µg/L | 1 | 1/26/01 |
| Phenanthrene | ND | 0.60 | | µg/L | 1 | 1/26/01 |
| Anthracene | ND | 0.60 | | µg/L | 1 | 1/26/01 |
| Fluoranthene | ND | 0.30 | | µg/L | 1 | 1/26/01 |
| Pyrene | ND | 0.30 | | µg/L | 1 | 1/26/01 |
| Benz(a)anthracene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Chrysene | ND | 0.20 | | µg/L | 1 | 1/26/01 |
| Benzo(b)fluoranthene | ND | 0.050 | | µg/L | 1 | 1/26/01 |
| Benzo(k)fluoranthene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Benzo(a)pyrene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Dibenz(a,h)anthracene | ND | 0.040 | | µg/L | 1 | 1/26/01 |
| Benzo(g,h,i)perylene | ND | 0.030 | | µg/L | 1 | 1/26/01 |
| Indeno(1,2,3-cd)pyrene | ND | 0.080 | | µg/L | 1 | 1/26/01 |
| Surr: Benzo(e)pyrene | 87.2 | 77-104 | | %REC | 1 | 1/26/01 |

**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

# Hall Environmental Analysis Laboratory

Date: *01-Feb-01*

**CLIENT:** Envirotech
**Work Order:** 0101085
**Project:** Yates Petroleum

## QC SUMMARY REPORT
### Method Blank

Sample ID: MB-216 Batch ID: 216 Test Code: SW8310 Units: µg/L Analysis Date: 1/26/01 Prep Date: 1/23/01

Client ID: Run ID: HPLC_010126A SeqNo: 11829

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | ND | 2.5 | | | | | | | | | |
| 1-Methylnaphthalene | ND | 2.5 | | | | | | | | | |
| 2-Methylnaphthalene | ND | 2.5 | | | | | | | | | |
| Acenaphthylene | ND | 2.5 | | | | | | | | | |
| Acenaphthene | ND | 2.5 | | | | | | | | | |
| Fluorene | ND | 0.60 | | | | | | | | | |
| Phenanthrene | ND | 0.60 | | | | | | | | | |
| Anthracene | ND | 0.60 | | | | | | | | | |
| Fluoranthene | ND | 0.30 | | | | | | | | | |
| Pyrene | ND | 0.30 | | | | | | | | | |
| Benz(a)anthracene | ND | 0.020 | | | | | | | | | |
| Chrysene | ND | 0.20 | | | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.050 | | | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.020 | | | | | | | | | |
| Benzo(a)pyrene | ND | 0.020 | | | | | | | | | |
| Dibenz(a,h)anthracene | ND | 0.040 | | | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.030 | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | ND | 0.080 | | | | | | | | | |
| Surr: Benzo(e)pyrene | 920 | 0 | 1000 | 0 | 92.0 | 77 | 104 | 0 | | | |

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1

# Hall Environmental Analysis Laboratory

Date: *01-Feb-01*

**CLIENT:** Envirotech
**Work Order:** 0101085
**Project:** Yates Petroleum

## QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-216 Batch ID: 216 Test Code: SW8310 Units: µg/L Analysis Date: 1/30/01 Prep Date: 1/23/01
Client ID: Run ID: HPLC_010126A SeqNo: 11830

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 24.63 | 2.5 | 40.4 | 0 | 61.0 | 44 | 79 | 0 | | | |
| Acenaphthylene | 26.71 | 2.5 | 40.4 | 0 | 66.1 | 48 | 88 | 0 | | | |
| Acenaphthene | 25.53 | 2.5 | 40.4 | 0 | 63.2 | 51 | 88 | 0 | | | |
| Fluorene | 2.492 | 0.60 | 4.1 | 0 | 60.8 | 55 | 92 | 0 | | | |
| Phenanthrene | 2.198 | 0.60 | 3.07 | 0 | 71.6 | 70 | 96 | 0 | | | |
| Fluoranthene | 1.704 | 0.30 | 1.92 | 0 | 88.8 | 76 | 101 | 0 | | | |
| Pyrene | 3.375 | 0.30 | 3.85 | 0 | 87.7 | 77 | 101 | 0 | | | |
| Benzo(a)pyrene | 0.212 | 0.020 | 0.253 | 0 | 83.8 | 67 | 127 | 0 | | | |
| Benzo(g,h,i)perylene | 0.523 | 0.030 | 0.553 | 0 | 94.6 | 80 | 112 | 0 | | | |
| Surr: Benzo(e)pyrene | 940.2 | 0 | 1000 | 0 | 94.0 | 77 | 104 | 0 | | | |

Sample ID: LCSD-216 Batch ID: 216 Test Code: SW8310 Units: µg/L Analysis Date: 1/30/01 Prep Date: 1/23/01
Client ID: Run ID: HPLC_010126A SeqNo: 11831

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 22.31 | 2.5 | 40.4 | 0 | 55.2 | 44 | 79 | 24.63 | 9.88 | 35 | |
| Acenaphthylene | 25.63 | 2.5 | 40.4 | 0 | 63.4 | 48 | 88 | 26.71 | 4.12 | 36 | |
| Acenaphthene | 24.8 | 2.5 | 40.4 | 0 | 61.4 | 51 | 88 | 25.53 | 2.92 | 30 | |
| Fluorene | 2.544 | 0.60 | 4.1 | 0 | 62.0 | 55 | 92 | 2.492 | 2.07 | 30 | |
| Phenanthrene | 2.128 | 0.60 | 3.07 | 0 | 69.3 | 70 | 96 | 2.198 | 3.24 | 17 | S |
| Fluoranthene | 1.577 | 0.30 | 1.92 | 0 | 82.1 | 76 | 101 | 1.704 | 7.74 | 13 | |
| Pyrene | 3.15 | 0.30 | 3.85 | 0 | 81.8 | 77 | 101 | 3.375 | 6.90 | 13 | |
| Benzo(a)pyrene | 0.223 | 0.020 | 0.253 | 0 | 88.1 | 67 | 127 | 0.212 | 5.06 | 17 | |
| Benzo(g,h,i)perylene | 0.479 | 0.030 | 0.553 | 0 | 86.6 | 80 | 112 | 0.523 | 8.76 | 17 | |
| Surr: Benzo(e)pyrene | 872.9 | 0 | 1000 | 0 | 87.3 | 77 | 104 | 940.2 | 7.42 | 0 | |

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

1

# CHAIN OF CUSTODY RECORD

08474

| Client / Project Name | Project Location | ANALYSIS / PARAMETERS |
|---|---|---|
| Yates Petroleum | LaPlata (Miller DH1) | |
| Sampler: CJC | Client No. 000110-001 | |

| Sample No./ Identification | Sample Date | Sample Time | Lab Number | Sample Matrix | No. of Containers | 8310 PAH | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 1-17-01 | 1240 | 19115 | water | 1 | ✓ | | | | | | |
| MW-2 | 1-17-01 | 1400 | 19116 | " | 1 | ✓ | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Jodi Saunders | 1-17-01 | 1630 | Ann L. Aguilar | 1-17-01 | 1630 |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |

ENVIROTECH INC.
5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

| Sample Receipt | Y | N | N/A |
|---|---|---|---|
| Received Intact | ✓ | | |
| Cool - Ice/Blue Ice | ✓ | | |

# Hall Environmental Analysis Laboratory

**Date:** *01-Feb-01*

**CLIENT:** Envirotech
**Lab Order:** 0101085
**Project:** Yates Petroleum
**Lab ID:** 0101085-01

**Client Sample ID:** MW-1/19115
**Collection Date:** 1/17/01 12:40:00 PM
**Matrix:** AQUEOUS

| Analyses | Result | Limit | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **PAHS BY 8310** | | **SW8310** | | | | Analyst: **BL** |
| Naphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| 1-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| 2-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Acenaphthylene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Acenaphthene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Fluorene | ND | 0.80 | | µg/L | 1 | 1/26/01 |
| Phenanthrene | ND | 0.60 | | µg/L | 1 | 1/26/01 |
| Anthracene | ND | 0.60 | | µg/L | 1 | 1/26/01 |
| Fluoranthene | ND | 0.30 | | µg/L | 1 | 1/26/01 |
| Pyrene | ND | 0.30 | | µg/L | 1 | 1/26/01 |
| Benz(a)anthracene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Chrysene | ND | 0.20 | | µg/L | 1 | 1/26/01 |
| Benzo(b)fluoranthene | ND | 0.050 | | µg/L | 1 | 1/26/01 |
| Benzo(k)fluoranthene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Benzo(a)pyrene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Dibenz(a,h)anthracene | ND | 0.040 | | µg/L | 1 | 1/26/01 |
| Benzo(g,h,i)perylene | ND | 0.030 | | µg/L | 1 | 1/26/01 |
| Indeno(1,2,3-cd)pyrene | ND | 0.080 | | µg/L | 1 | 1/26/01 |
| Surr: Benzo(e)pyrene | 85.6 | 77-104 | | %REC | 1 | 1/26/01 |

**Qualifiers:**

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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

# Hall Environmental Analysis Laboratory

**Date:** *01-Feb-01*

**CLIENT:** Envirotech
**Lab Order:** 0101085
**Project:** Yates Petroleum
**Lab ID:** 0101085-02

**Client Sample ID:** MW-2/ 19116
**Collection Date:** 1/17/01 2:00:00 PM
**Matrix:** AQUEOUS

| Analyses | Result | Limit | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **PAHS BY 8310** | | **SW8310** | | | | Analyst: BL |
| Naphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| 1-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| 2-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Acenaphthylene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Acenaphthene | ND | 2.5 | | µg/L | 1 | 1/26/01 |
| Fluorene | ND | 0.80 | | µg/L | 1 | 1/26/01 |
| Phenanthrene | ND | 0.60 | | µg/L | 1 | 1/26/01 |
| Anthracene | ND | 0.60 | | µg/L | 1 | 1/26/01 |
| Fluoranthene | ND | 0.30 | | µg/L | 1 | 1/26/01 |
| Pyrene | ND | 0.30 | | µg/L | 1 | 1/26/01 |
| Benz(a)anthracene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Chrysene | ND | 0.20 | | µg/L | 1 | 1/26/01 |
| Benzo(b)fluoranthene | ND | 0.050 | | µg/L | 1 | 1/26/01 |
| Benzo(k)fluoranthene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Benzo(a)pyrene | ND | 0.020 | | µg/L | 1 | 1/26/01 |
| Dibenz(a,h)anthracene | ND | 0.040 | | µg/L | 1 | 1/26/01 |
| Benzo(g,h,i)perylene | ND | 0.030 | | µg/L | 1 | 1/26/01 |
| Indeno(1,2,3-cd)pyrene | ND | 0.080 | | µg/L | 1 | 1/26/01 |
| Surr: Benzo(e)pyrene | 87.2 | 77-104 | | %REC | 1 | 1/26/01 |

**Qualifiers:**

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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

Hall Environmental Analysis Laboratory

**Date:** *01-Feb-01*

**CLIENT:** Envirotech
**Work Order:** 0101085
**Project:** Yates Petroleum

# QC SUMMARY REPORT
## Method Blank

Sample ID: **MB-216** Batch ID: **216** Test Code: **SW8310** Units: **µg/L** Analysis Date: **1/26/01** Prep Date: **1/23/01**
Client ID: Run ID: **HPLC_010126A** SeqNo: **11829**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | ND | 2.5 | | | | | | | | | |
| 1-Methylnaphthalene | ND | 2.5 | | | | | | | | | |
| 2-Methylnaphthalene | ND | 2.5 | | | | | | | | | |
| Acenaphthylene | ND | 2.5 | | | | | | | | | |
| Acenaphthene | ND | 2.5 | | | | | | | | | |
| Fluorene | ND | 0.80 | | | | | | | | | |
| Phenanthrene | ND | 0.60 | | | | | | | | | |
| Anthracene | ND | 0.60 | | | | | | | | | |
| Fluoranthene | ND | 0.30 | | | | | | | | | |
| Pyrene | ND | 0.30 | | | | | | | | | |
| Benz(a)anthracene | ND | 0.020 | | | | | | | | | |
| Chrysene | ND | 0.20 | | | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.050 | | | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.020 | | | | | | | | | |
| Benzo(a)pyrene | ND | 0.020 | | | | | | | | | |
| Dibenz(a,h)anthracene | ND | 0.040 | | | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.030 | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | ND | 0.080 | | | | | | | | | |
| Surr: Benzo(e)pyrene | 920 | 0 | 1000 | 0 | 92.0 | 77 | 104 | 0 | | | |

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

**Date:** *01-Feb-01*

**CLIENT:** Envirotech
**Work Order:** 0101085
**Project:** Yates Petroleum

# QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: **LCS-216** Batch ID: **216** Test Code: **SW8310** Units: **µg/L** Analysis Date: **1/30/01** Prep Date: **1/23/01**
Client ID: Run ID: **HPLC_010126A** SeqNo: **11830**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 24.63 | 2.5 | 40.4 | 0 | 61.0 | 44 | 79 | 0 | | | |
| Acenaphthylene | 26.71 | 2.5 | 40.4 | 0 | 66.1 | 48 | 88 | 0 | | | |
| Acenaphthene | 25.53 | 2.5 | 40.4 | 0 | 63.2 | 51 | 88 | 0 | | | |
| Fluorene | 2.492 | 0.80 | 4.1 | 0 | 60.8 | 55 | 92 | 0 | | | |
| Phenanthrene | 2.198 | 0.60 | 3.07 | 0 | 71.6 | 70 | 96 | 0 | | | |
| Fluoranthene | 1.704 | 0.30 | 1.92 | 0 | 88.8 | 76 | 101 | 0 | | | |
| Pyrene | 3.375 | 0.30 | 3.85 | 0 | 87.7 | 77 | 101 | 0 | | | |
| Benzo(a)pyrene | 0.212 | 0.020 | 0.253 | 0 | 83.8 | 67 | 127 | 0 | | | |
| Benzo(g,h,i)perylene | 0.523 | 0.030 | 0.553 | 0 | 94.6 | 80 | 112 | 0 | | | |
| Surr: Benzo(e)pyrene | 940.2 | 0 | 1000 | 0 | 94.0 | 77 | 104 | 0 | | | |

Sample ID: **LCSD-216** Batch ID: **216** Test Code: **SW8310** Units: **µg/L** Analysis Date: **1/30/01** Prep Date: **1/23/01**
Client ID: Run ID: **HPLC_010126A** SeqNo: **11831**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 22.31 | 2.5 | 40.4 | 0 | 55.2 | 44 | 79 | 24.63 | 9.88 | 35 | |
| Acenaphthylene | 25.63 | 2.5 | 40.4 | 0 | 63.4 | 48 | 88 | 26.71 | 4.12 | 36 | |
| Acenaphthene | 24.8 | 2.5 | 40.4 | 0 | 61.4 | 51 | 88 | 25.53 | 2.92 | 30 | |
| Fluorene | 2.544 | 0.80 | 4.1 | 0 | 62.0 | 55 | 92 | 2.492 | 2.07 | 30 | |
| Phenanthrene | 2.128 | 0.60 | 3.07 | 0 | 69.3 | 70 | 96 | 2.198 | 3.24 | 17 | S |
| Fluoranthene | 1.577 | 0.30 | 1.92 | 0 | 82.1 | 76 | 101 | 1.704 | 7.74 | 13 | |
| Pyrene | 3.15 | 0.30 | 3.85 | 0 | 81.8 | 77 | 101 | 3.375 | 6.90 | 13 | |
| Benzo(a)pyrene | 0.223 | 0.020 | 0.253 | 0 | 88.1 | 67 | 127 | 0.212 | 5.06 | 17 | |
| Benzo(g,h,i)perylene | 0.479 | 0.030 | 0.553 | 0 | 86.6 | 80 | 112 | 0.523 | 8.78 | 17 | |
| Surr: Benzo(e)pyrene | 872.9 | 0 | 1000 | 0 | 87.3 | 77 | 104 | 940.2 | 7.42 | 0 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

# Hall Environmental Analysis Laboratory

**Date:** *19-Feb-01*

**CLIENT:** Envirotech
**Lab Order:** 0102024
**Project:** Yates Pet.
**Lab ID:** 0102024-01

**Client Sample ID:** MW-3/19166
**Collection Date:** 2/2/01 10:25:00 AM
**Matrix:** AQUEOUS

| Analyses | Result | Limit | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **PAHS BY 8310** | | **SW8310** | | | | Analyst: BL |
| Naphthalene | ND | 2.5 | | µg/L | 1 | 2/19/01 |
| 1-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 2/19/01 |
| 2-Methylnaphthalene | ND | 2.5 | | µg/L | 1 | 2/19/01 |
| Acenaphthylene | ND | 2.5 | | µg/L | 1 | 2/19/01 |
| Acenaphthene | ND | 2.5 | | µg/L | 1 | 2/19/01 |
| Fluorene | ND | 0.80 | | µg/L | 1 | 2/19/01 |
| Phenanthrene | ND | 0.60 | | µg/L | 1 | 2/19/01 |
| Anthracene | ND | 0.60 | | µg/L | 1 | 2/19/01 |
| Fluoranthene | ND | 0.30 | | µg/L | 1 | 2/19/01 |
| Pyrene | ND | 0.30 | | µg/L | 1 | 2/19/01 |
| Benz(a)anthracene | ND | 0.020 | | µg/L | 1 | 2/19/01 |
| Chrysene | ND | 0.20 | | µg/L | 1 | 2/19/01 |
| Benzo(b)fluoranthene | ND | 0.050 | | µg/L | 1 | 2/19/01 |
| Benzo(k)fluoranthene | ND | 0.020 | | µg/L | 1 | 2/19/01 |
| Benzo(a)pyrene | ND | 0.020 | | µg/L | 1 | 2/19/01 |
| Dibenz(a,h)anthracene | ND | 0.040 | | µg/L | 1 | 2/19/01 |
| Benzo(g,h,i)perylene | ND | 0.030 | | µg/L | 1 | 2/19/01 |
| Indeno(1,2,3-cd)pyrene | ND | 0.080 | | µg/L | 1 | 2/19/01 |
| Surr: Benzo(e)pyrene | 103 | 77-104 | | %REC | 1 | 2/19/01 |

**Qualifiers:**

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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

Hall Environmental Analysis Laboratory

**Date:** *19-Feb-01*

**CLIENT:** Envirotech
**Work Order:** 0102024
**Project:** Yates Pet.

# QC SUMMARY REPORT
## Method Blank

Sample ID: **MB-258** Batch ID: **258** Test Code: **SW8310** Units: **µg/L** Analysis Date: **2/14/01** Prep Date: **2/8/01**

Client ID: Run ID: **HPLC_010214A** SeqNo: **14355**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | ND | 2.5 | | | | | | | | | |
| 1-Methylnaphthalene | ND | 2.5 | | | | | | | | | |
| 2-Methylnaphthalene | ND | 2.5 | | | | | | | | | |
| Acenaphthylene | ND | 2.5 | | | | | | | | | |
| Acenaphthene | ND | 2.5 | | | | | | | | | |
| Fluorene | ND | 0.80 | | | | | | | | | |
| Phenanthrene | ND | 0.60 | | | | | | | | | |
| Anthracene | ND | 0.60 | | | | | | | | | |
| Fluoranthene | ND | 0.30 | | | | | | | | | |
| Pyrene | ND | 0.30 | | | | | | | | | |
| Benz(a)anthracene | ND | 0.020 | | | | | | | | | |
| Chrysene | ND | 0.20 | | | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.050 | | | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.020 | | | | | | | | | |
| Benzo(a)pyrene | ND | 0.020 | | | | | | | | | |
| Dibenz(a,h)anthracene | ND | 0.040 | | | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.030 | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | ND | 0.080 | | | | | | | | | |
| Surr: Benzo(e)pyrene | 976.9 | 0 | 1000 | 0 | 97.7 | 77 | 104 | 0 | | | |

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

# Hall Environmental Analysis Laboratory

**Date:** *19-Feb-01*

**CLIENT:** Envirotech
**Work Order:** 0102024
**Project:** Yates Pet.

## QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: **LCS-258** Batch ID: **258** Test Code: **SW8310** Units: **µg/L** Analysis Date: **2/15/01** Prep Date: **2/8/01**
Client ID: Run ID: **HPLC_010214A** SeqNo: **14356**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 23.66 | 2.5 | 40.4 | 0 | 58.6 | 44 | 79 | 0 | | | |
| Acenaphthylene | 25.81 | 2.5 | 40.4 | 0 | 63.9 | 48 | 88 | 0 | | | |
| Acenaphthene | 25.31 | 2.5 | 40.4 | 0 | 62.7 | 51 | 88 | 0 | | | |
| Fluorene | 2.702 | 0.80 | 4.1 | 0 | 65.9 | 55 | 92 | 0 | | | |
| Phenanthrene | 2.324 | 0.60 | 3.07 | 0 | 75.7 | 70 | 96 | 0 | | | |
| Fluoranthene | 1.77 | 0.30 | 1.92 | 0 | 92.2 | 76 | 101 | 0 | | | |
| Pyrene | 3.705 | 0.30 | 3.85 | 0 | 96.2 | 77 | 101 | 0 | | | |
| Benzo(a)pyrene | 0.266 | 0.020 | 0.253 | 0 | 105 | 67 | 127 | 0 | | | |
| Benzo(g,h,i)perylene | 0.606 | 0.030 | 0.553 | 0 | 110 | 80 | 112 | 0 | | | |

Sample ID: **LCSD-258** Batch ID: **258** Test Code: **SW8310** Units: **µg/L** Analysis Date: **2/15/01** Prep Date: **2/8/01**
Client ID: Run ID: **HPLC_010214A** SeqNo: **14357**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 22.86 | 2.5 | 40.4 | 0 | 56.6 | 44 | 79 | 23.66 | 3.46 | 35 | |
| Acenaphthylene | 24.97 | 2.5 | 40.4 | 0 | 61.8 | 48 | 88 | 25.81 | 3.29 | 36 | |
| Acenaphthene | 25.67 | 2.5 | 40.4 | 0 | 63.5 | 51 | 88 | 25.31 | 1.42 | 30 | |
| Fluorene | 2.719 | 0.80 | 4.1 | 0 | 66.3 | 55 | 92 | 2.702 | 0.627 | 30 | |
| Phenanthrene | 2.467 | 0.60 | 3.07 | 0 | 80.4 | 70 | 96 | 2.324 | 5.97 | 17 | |
| Fluoranthene | 1.841 | 0.30 | 1.92 | 0 | 95.9 | 76 | 101 | 1.77 | 3.93 | 13 | |
| Pyrene | 3.855 | 0.30 | 3.85 | 0 | 100 | 77 | 101 | 3.705 | 3.97 | 13 | |
| Benzo(a)pyrene | 0.28 | 0.020 | 0.253 | 0 | 111 | 67 | 127 | 0.266 | 5.13 | 17 | |
| Benzo(g,h,i)perylene | 0.648 | 0.030 | 0.553 | 0 | 117 | 80 | 112 | 0.606 | 6.70 | 17 | S |

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

# CHAIN OF CUSTODY RECORD

08494

| Client / Project Name | Project Location | ANALYSIS / PARAMETERS |
|---|---|---|
| Yates Petroleum | La Plata (Miller D#1 | |
| Sampler: JLS | Client No. 000110-001 | |

| Sample No./ Identification | Sample Date | Sample Time | Lab Number | Sample Matrix | No. of Containers | Anion - Cation 8310 | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-3 | 02-02-01 | 1025 | 19166 | Water | 1 | ✓ | | | | | | |
| | | | | | | | | | | | | |
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| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| Relinquished by: (Signature) Jodi Sanders | 02-02-01 | 1205 | Received by: (Signature) Christine M Walters | 2/2/01 | 12:05 |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |


ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615


| Sample Receipt | Y | N | N/A |
|---|---|---|---|
| Received Intact | ✓ | | |
| Cool - Ice/Blue Ice | ✓ | | |

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 000110-001 |
| Sample ID: | MW - 1 | Date Reported: | 01-19-01 |
| Chain of Custody: | 8472 | Date Sampled: | 01-17-01 |
| Laboratory Number: | 19113 | Date Received: | 01-17-01 |
| Sample Matrix: | Water | Date Analyzed: | 01-19-01 |
| Preservative: | HgCl2 & Cool | Analysis Requested: | BTEX |
| Condition: | Cool & Intact | | |

| Parameter | Concentration (ug/L) | Dilution Factor | Det. Limit (ug/L) |
|---|---|---|---|
| **Benzene** | **ND** | **1** | **0.2** |
| **Toluene** | **0.7** | **1** | **0.2** |
| **Ethylbenzene** | **1.2** | **1** | **0.2** |
| **p,m-Xylene** | **20.2** | **1** | **0.2** |
| **o-Xylene** | **4.7** | **1** | **0.1** |
| **Total BTEX** | **26.8** | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Trifluorotoluene** | **96 %** |
| | **Bromofluorobenzene** | **96 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **La Plata ( Miller D #1 ).**

Analyst

Review

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 000110-001 |
| Sample ID: | MW - 2 | Date Reported: | 01-19-01 |
| Chain of Custody: | 8472 | Date Sampled: | 01-17-01 |
| Laboratory Number: | 19114 | Date Received: | 01-17-01 |
| Sample Matrix: | Water | Date Analyzed: | 01-19-01 |
| Preservative: | HgCl2 & Cool | Analysis Requested: | BTEX |
| Condition: | Cool & Intact | | |

| Parameter | Concentration (ug/L) | Dilution Factor | Det. Limit (ug/L) |
|---|---|---|---|
| **Benzene** | **2.8** | **1** | **0.2** |
| **Toluene** | **ND** | **1** | **0.2** |
| **Ethylbenzene** | **1.3** | **1** | **0.2** |
| **p,m-Xylene** | **8.0** | **1** | **0.2** |
| **o-Xylene** | **ND** | **1** | **0.1** |
| **Total BTEX** | **12.1** | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Trifluorotoluene** | **97 %** |
| | **Bromofluorobenzene** | **97 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **La Plata ( Miller D #1 ).**

Analyst

Review

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | N/A | Project #: | N/A |
| Sample ID: | 01-19-BTEX QA/QC | Date Reported: | 01-19-01 |
| Laboratory Number: | 19111 | Date Sampled: | N/A |
| Sample Matrix: | Soil | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 01-19-01 |
| Condition: | N/A | Analysis: | BTEX |

| Calibration and Detection Limits (ug/L) | I-Cal RF: | C-Cal RF: | %Diff. Accept. Range 0 - 15% | Blank Conc | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 1.8167E-001 | 1.8211E-001 | 0.2% | ND | 0.2 |
| Toluene | 3.4631E-002 | 3.4694E-002 | 0.2% | ND | 0.2 |
| Ethylbenzene | 5.9784E-002 | 5.9910E-002 | 0.2% | ND | 0.2 |
| p,m-Xylene | 5.4361E-002 | 5.4497E-002 | 0.3% | ND | 0.2 |
| o-Xylene | 5.6391E-002 | 5.6487E-002 | 0.2% | ND | 0.1 |

| Duplicate Conc. (ug/Kg) | Sample | Duplicate | %Diff. | Accept Range | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 3,160 | 3,060 | 3.2% | 0 - 30% | 1.8 |
| Toluene | 1,050 | 1,010 | 3.8% | 0 - 30% | 1.7 |
| Ethylbenzene | 1,200 | 1,160 | 3.3% | 0 - 30% | 1.5 |
| p,m-Xylene | 1,230 | 1,190 | 3.3% | 0 - 30% | 2.2 |
| o-Xylene | 1,770 | 1,720 | 2.8% | 0 - 30% | 1.0 |

| Spike Conc. (ug/Kg) | Sample | Amount Spiked | Spiked Sample | % Recovery | Accept Range |
|---|---|---|---|---|---|
| Benzene | 3,160 | 50.0 | 3,200 | 100% | 39 - 150 |
| Toluene | 1,050 | 50.0 | 1,090 | 99% | 46 - 148 |
| Ethylbenzene | 1,200 | 50.0 | 1,240 | 99% | 32 - 160 |
| p,m-Xylene | 1,230 | 100 | 1,320 | 99% | 46 - 148 |
| o-Xylene | 1,770 | 50.0 | 1,820 | 100% | 46 - 148 |

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **QA/QC for samples 19111 and 19113 - 19114.**

Analyst

Review

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Yates Petroluem | Project #: | 000110-001 |
| Sample ID: | MW - 1 | Date Reported: | 01-19-01 |
| Laboratory Number: | 19113 | Date Sampled: | 01-17-01 |
| Chain of Custody No: | 8472 | Date Received: | 01-17-01 |
| Sample Matrix: | Water | Date Extracted: | 01-19-01 |
| Preservative: | Cool | Date Analyzed: | 01-19-01 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/L) | Det. Limit (mg/L) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | 0.2 |
| **Diesel Range (C10 - C28)** | **ND** | 0.1 |
| **Total Petroleum Hydrocarbons** | **ND** | 0.2 |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **La Plata ( Miller D #1 ).**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Yates Petroluem | Project #: | 000110-001 |
| Sample ID: | MW - 2 | Date Reported: | 01-19-01 |
| Laboratory Number: | 19114 | Date Sampled: | 01-17-01 |
| Chain of Custody No: | 8472 | Date Received: | 01-17-01 |
| Sample Matrix: | Water | Date Extracted: | 01-19-01 |
| Preservative: | Cool | Date Analyzed: | 01-19-01 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/L) | Det. Limit (mg/L) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | 0.2 |
| **Diesel Range (C10 - C28)** | **ND** | 0.1 |
| **Total Petroleum Hydrocarbons** | **ND** | 0.2 |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **La Plata ( Miller D #1 ).**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA Method 8015 Modified
### Nonhalogenated Volatile Organics
### Total Petroleum Hydrocarbons

## Quality Assurance Report

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | 01-19-TPH QA/QC | Date Reported: | 01-19-01 |
| Laboratory Number: | 19111 | Date Sampled: | N/A |
| Sample Matrix: | Methylene Chloride | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 01-19-01 |
| Condition: | N/A | Analysis Requested: | TPH |

| | I-Cal Date | I-Cal RF: | C-Cal RF: | % Difference | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | 08-03-00 | 6.2648E-002 | 6.2586E-002 | **0.10%** | **0 - 15%** |
| **Diesel Range C10 - C28** | 08-03-00 | 2.0382E-002 | 2.0341E-002 | **0.20%** | **0 - 15%** |

| **Blank Conc. (mg/L - mg/Kg)** | Concentration | Detection Limit |
|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **0.2** |
| **Diesel Range C10 - C28** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

| **Duplicate Conc. (mg/Kg)** | Sample | Duplicate | % Difference | Accept. Range |
|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **242** | **241** | **0.4%** | **0 - 30%** |
| **Diesel Range C10 - C28** | **204** | **203** | **0.3%** | **0 - 30%** |

| **Spike Conc. (mg/Kg)** | Sample | Spike Added | Spike Result | % Recovery | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **242** | **250** | **491** | **100%** | **75 - 125%** |
| **Diesel Range C10 - C28** | **204** | **250** | **453** | **100%** | **75 - 125%** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples 19111 - 19114.**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## TRACE METAL ANALYSIS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 000110-001 |
| Sample ID: | MW - 1 | Date Reported: | 01-22-01 |
| Laboratory Number: | 19113 | Date Sampled: | 01-17-01 |
| Chain of Custody: | 8472 | Date Received: | 01-17-01 |
| Sample Matrix: | Water | Date Analyzed: | 01-19-01 |
| Preservative: | Cool | Date Digested: | 01-19-01 |
| Condition: | Cool & Intact | Analysis Needed: | RCRA Metals |

| Parameter | Concentration (mg/L) | Det. Limit (mg/L) | Regulatory Level (mg/L) |
|---|---|---|---|
| **Arsenic** | **0.017** | **0.001** | **5.0** |
| **Barium** | **0.039** | **0.001** | **100** |
| **Cadmium** | **0.014** | **0.001** | **1.0** |
| **Chromium** | **0.014** | **0.001** | **5.0** |
| **Lead** | **0.094** | **0.001** | **5.0** |
| **Mercury** | **ND** | **0.001** | **0.2** |
| **Selenium** | **0.007** | **0.001** | **1.0** |
| **Silver** | **0.018** | **0.001** | **5.0** |

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **La Plata ( Miller D #1 ).**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## TRACE METAL ANALYSIS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 000110-001 |
| Sample ID: | MW - 2 | Date Reported: | 01-22-01 |
| Laboratory Number: | 19114 | Date Sampled: | 01-17-01 |
| Chain of Custody: | 8472 | Date Received: | 01-17-01 |
| Sample Matrix: | Water | Date Analyzed: | 01-19-01 |
| Preservative: | Cool | Date Digested: | 01-19-01 |
| Condition: | Cool & Intact | Analysis Needed: | RCRA Metals |

| Parameter | Concentration (mg/L) | Det. Limit (mg/L) | Regulatory Level (mg/L) |
|---|---|---|---|
| **Arsenic** | **0.010** | **0.001** | **5.0** |
| **Barium** | **0.033** | **0.001** | **100** |
| **Cadmium** | **0.007** | **0.001** | **1.0** |
| **Chromium** | **0.004** | **0.001** | **5.0** |
| **Lead** | **0.089** | **0.001** | **5.0** |
| **Mercury** | **ND** | **0.001** | **0.2** |
| **Selenium** | **0.002** | **0.001** | **1.0** |
| **Silver** | **0.008** | **0.001** | **5.0** |

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **La Plata ( Miller D #1 ).**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## TRACE METAL ANALYSIS
## Quality Control / Quality Assurance Report

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | 01-19-TM QA/QC | Date Reported: | 01-22-01 |
| Laboratory Number: | 19099 | Date Sampled: | N/A |
| Sample Matrix: | Water | Date Received: | N/A |
| Analysis Requested: | Total RCRA Metals | Date Analyzed: | 01-19-01 |
| Condition: | N/A | Date Digested: | 01-19-01 |

| Blank & Duplicate Conc. (mg/L) | Instrument Blank (mg/L) | Method Blank | Detection Limit | Sample | Duplicate | % Diff. | Acceptance Range |
|---|---|---|---|---|---|---|---|
| **Arsenic** | ND | ND | 0.001 | ND | ND | 0.0% | 0% - 30% |
| **Barium** | ND | ND | 0.001 | 1.06 | 1.05 | 0.9% | 0% - 30% |
| **Cadmium** | ND | ND | 0.001 | ND | ND | 0.0% | 0% - 30% |
| **Chromium** | ND | ND | 0.001 | 0.012 | 0.012 | 0.0% | 0% - 30% |
| **Lead** | ND | ND | 0.001 | 0.033 | 0.033 | 0.0% | 0% - 30% |
| **Mercury** | ND | ND | 0.001 | ND | ND | 0.0% | 0% - 30% |
| **Selenium** | ND | ND | 0.001 | ND | ND | 0.0% | 0% - 30% |
| **Silver** | ND | ND | 0.001 | ND | ND | 0.0% | 0% - 30% |

| Spike Conc. (mg/Kg) | Spike Added | Sample | Spiked Sample | Percent Recovery | Acceptance Range |
|---|---|---|---|---|---|
| **Arsenic** | 0.500 | ND | 0.498 | 99.6% | 80% - 120% |
| **Barium** | 0.500 | 1.06 | 1.55 | 99.4% | 80% - 120% |
| **Cadmium** | 0.500 | ND | 0.499 | 99.8% | 80% - 120% |
| **Chromium** | 0.500 | 0.012 | 0.511 | 99.8% | 80% - 120% |
| **Lead** | 0.500 | 0.033 | 0.53 | 99.8% | 80% - 120% |
| **Mercury** | 0.050 | ND | 0.049 | 98.0% | 80% - 120% |
| **Selenium** | 0.500 | ND | 0.497 | 99.4% | 80% - 120% |
| **Silver** | 0.500 | ND | 0.50 | 99.6% | 80% - 120% |

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples 19099 and 19113 - 19114.**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 3 | Date Reported: | 02-05-01 |
| Chain of Custody: | 8493 | Date Sampled: | 02-02-01 |
| Laboratory Number: | 19165 | Date Received: | 02-02-01 |
| Sample Matrix: | Water | Date Analyzed: | 02-05-01 |
| Preservative: | HgCl2 & Cool | Analysis Requested: | BTEX |
| Condition: | Cool & Intact | | |

| Parameter | Concentration (ug/L) | Dilution Factor | Det. Limit (ug/L) |
|---|---|---|---|
| **Benzene** | **ND** | **1** | **0.2** |
| **Toluene** | **ND** | **1** | **0.2** |
| **Ethylbenzene** | **ND** | **1** | **0.2** |
| **p,m-Xylene** | **ND** | **1** | **0.2** |
| **o-Xylene** | **ND** | **1** | **0.1** |
| **Total BTEX** | **ND** | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Trifluorotoluene** | **101 %** |
| | **Bromofluorobenzene** | **101 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **La Plata ( Miller D #1 ).**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | N/A | Project #: | N/A |
| Sample ID: | 02-05-BTEX QA/QC | Date Reported: | 02-05-01 |
| Laboratory Number: | 19167 | Date Sampled: | N/A |
| Sample Matrix: | Soil | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 02-05-01 |
| Condition: | N/A | Analysis: | BTEX |

| Calibration and Detection Limits (ug/L) | I-Cal RF: | C-Cal RF: | %Diff. Accept. Range 0 - 15% | Blank Conc | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 3.8333E-002 | 3.8425E-002 | 0.2% | ND | 0.2 |
| Toluene | 3.7664E-002 | 3.7732E-002 | 0.2% | ND | 0.2 |
| Ethylbenzene | 5.9685E-002 | 5.9810E-002 | 0.2% | ND | 0.2 |
| p,m-Xylene | 5.4964E-002 | 5.5102E-002 | 0.3% | ND | 0.2 |
| o-Xylene | 4.7339E-002 | 4.7420E-002 | 0.2% | ND | 0.1 |

| Duplicate Conc. (ug/Kg) | Sample | Duplicate | %Diff. | Accept Range | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 93.7 | 94.6 | 1.0% | 0 - 30% | 1.8 |
| Toluene | 1,150 | 1,160 | 0.9% | 0 - 30% | 1.7 |
| Ethylbenzene | 529 | 532 | 0.6% | 0 - 30% | 1.5 |
| p,m-Xylene | 1,070 | 1,080 | 0.9% | 0 - 30% | 2.2 |
| o-Xylene | 957 | 969 | 1.3% | 0 - 30% | 1.0 |

| Spike Conc. (ug/Kg) | Sample | Amount Spiked | Spiked Sample | % Recovery | Accept Range |
|---|---|---|---|---|---|
| Benzene | 93.7 | 50.0 | 142 | 99% | 39 - 150 |
| Toluene | 1,150 | 50.0 | 1,190 | 99% | 46 - 148 |
| Ethylbenzene | 529 | 50.0 | 572 | 99% | 32 - 160 |
| p,m-Xylene | 1,070 | 100 | 1,160 | 99% | 46 - 148 |
| o-Xylene | 957 | 50.0 | 1,000 | 99% | 46 - 148 |

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **QA/QC for samples 19165, 19167 - 19168 and 19172.**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 3 | Date Reported: | 02-05-01 |
| Laboratory Number: | 19165 | Date Sampled: | 02-02-01 |
| Chain of Custody No: | 8493 | Date Received: | 02-02-01 |
| Sample Matrix: | Water | Date Extracted: | 02-05-01 |
| Preservative: | Cool | Date Analyzed: | 02-05-01 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/L) | Det. Limit (mg/L) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **La Plata ( Miller D #1 ).**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA Method 8015 Modified
### Nonhalogenated Volatile Organics
### Total Petroleum Hydrocarbons

## Quality Assurance Report

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | 02-05-TPH QA/QC | Date Reported: | 02-05-01 |
| Laboratory Number: | 19167 | Date Sampled: | N/A |
| Sample Matrix: | Methylene Chloride | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 02-05-01 |
| Condition: | N/A | Analysis Requested: | TPH |

| | I-Cal Date | I-Cal RF: | C-Cal RF: | % Difference | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | 12-20-00 | 2.7271E-002 | 2.7243E-002 | **0.10%** | **0 - 15%** |
| **Diesel Range C10 - C28** | 12-20-00 | 2.4288E-002 | 2.4240E-002 | **0.20%** | **0 - 15%** |

| Blank Conc. (mg/L - mg/Kg) | Concentration | Detection Limit |
|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **0.2** |
| **Diesel Range C10 - C28** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

| Duplicate Conc. (mg/Kg) | Sample | Duplicate | % Difference | Accept. Range |
|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **374** | **373** | **0.4%** | **0 - 30%** |
| **Diesel Range C10 - C28** | **775** | **773** | **0.3%** | **0 - 30%** |

| Spike Conc. (mg/Kg) | Sample | Spike Added | Spike Result | % Recovery | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **374** | **250** | **623** | **100%** | **75 - 125%** |
| **Diesel Range C10 - C28** | **775** | **250** | **1,020** | **99%** | **75 - 125%** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples 19165, 16167 - 19169.**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## TRACE METAL ANALYSIS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 3 | Date Reported: | 02-07-01 |
| Laboratory Number: | 19165 | Date Sampled: | 02-02-01 |
| Chain of Custody: | 8493 | Date Received: | 02-02-01 |
| Sample Matrix: | Water | Date Analyzed: | 02-06-01 |
| Preservative: | Cool | Date Digested: | 02-06-01 |
| Condition: | Cool & Intact | Analysis Needed: | RCRA Metals |

| Parameter | Concentration (mg/L) | Det. Limit (mg/L) | Regulatory Level (mg/L) |
|---|---|---|---|
| **Arsenic** | **0.045** | **0.001** | **5.0** |
| **Barium** | **0.060** | **0.001** | **100** |
| **Cadmium** | **0.016** | **0.001** | **1.0** |
| **Chromium** | **0.010** | **0.001** | **5.0** |
| **Lead** | **0.027** | **0.001** | **5.0** |
| **Mercury** | **ND** | **0.001** | **0.2** |
| **Selenium** | **0.009** | **0.001** | **1.0** |
| **Silver** | **ND** | **0.001** | **5.0** |

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **La Plata ( Miller D #1 ).**

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## TRACE METAL ANALYSIS
## Quality Control / Quality Assurance Report

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | 02-06-TM QA/QC | Date Reported: | 02-07-01 |
| Laboratory Number: | 19165 | Date Sampled: | N/A |
| Sample Matrix: | Water | Date Received: | N/A |
| Analysis Requested: | Total RCRA Metals | Date Analyzed: | 02-06-01 |
| Condition: | N/A | Date Digested: | 02-06-01 |

| Blank & Duplicate Conc. (mg/L) | Instrument Blank (mg/L) | Method Blank | Detection Limit | Sample | Duplicate | % Diff. | Acceptance Range |
|---|---|---|---|---|---|---|---|
| **Arsenic** | ND | ND | 0.001 | 0.045 | 0.045 | 0.0% | 0% - 30% |
| **Barium** | ND | ND | 0.001 | 0.060 | 0.059 | 1.7% | 0% - 30% |
| **Cadmium** | ND | ND | 0.001 | 0.016 | 0.016 | 0.0% | 0% - 30% |
| **Chromium** | ND | ND | 0.001 | 0.010 | 0.010 | 0.0% | 0% - 30% |
| **Lead** | ND | ND | 0.001 | 0.027 | 0.027 | 0.0% | 0% - 30% |
| **Mercury** | ND | ND | 0.001 | ND | ND | 0.0% | 0% - 30% |
| **Selenium** | ND | ND | 0.001 | 0.009 | 0.009 | 0.0% | 0% - 30% |
| **Silver** | ND | ND | 0.001 | ND | ND | 0.0% | 0% - 30% |

| Spike Conc. (mg/Kg) | Spike Added | Sample | Spiked Sample | Percent Recovery | Acceptance Range |
|---|---|---|---|---|---|
| **Arsenic** | 0.500 | 0.045 | 0.544 | 99.8% | 80% - 120% |
| **Barium** | 0.500 | 0.060 | 0.558 | 99.6% | 80% - 120% |
| **Cadmium** | 0.500 | 0.016 | 0.515 | 99.8% | 80% - 120% |
| **Chromium** | 0.500 | 0.010 | 0.510 | 100.0% | 80% - 120% |
| **Lead** | 0.500 | 0.027 | 0.525 | 99.6% | 80% - 120% |
| **Mercury** | 0.050 | ND | 0.049 | 98.0% | 80% - 120% |
| **Selenium** | 0.500 | 0.009 | 0.506 | 99.4% | 80% - 120% |
| **Silver** | 0.500 | ND | 0.499 | 99.8% | 80% - 120% |

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **QA/QC for sample 19165.**

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# CHAIN OF CUSTODY RECORD

08493

| Client / Project Name | Project Location | ANALYSIS / PARAMETERS |
|---|---|---|
| Yates Petroleum | La Plata (Miller D #1) | |
| Sampler: JLS | Client No. 000110-001 | |

| Sample No./ Identification | Sample Date | Sample Time | Lab Number | Sample Matrix | No. of Containers | BTEX - 8021 TPH 8015 | Total Metals | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-3 | 02-02-01 | 1025 | 19165 | Water | 3 | ✓ | ✓ | | | | | |
| | | | | | | | | | | | | |
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| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Jodi Saunders | 02-02-01 | 1205 | Christine M Walters | 2/2/01 | 12:05 |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |


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Farmington, New Mexico 87401
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| Sample Receipt | Y | N | N/A |
|---|---|---|---|
| Received Intact | ✓ | | |
| Cool - Ice/Blue Ice | ✓ | | |

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

# MEMORANDUM OF MEETING OR CONVERSATION

| ☑ Telephone ☐ Personal | Time 1420 hrs | Date 4/24/03 |
|---|---|---|
| **Originating Party** | **Other Parties** | |
| Bill Olson - Environmental Bureau | Kyle Kerr - Envirotech 632-0615 | |

**Subject**

Yates - Miller D #1 Site

**Discussion**

4/4/03 submittal does not have water table gradient map. Also OCD never recieved a report on investigations as required in 11/6/00 OCD approval. This included info on MW completion, lithologic logs, cations/anions results, PAH results, metals results, etc.
He believes this is in prior reports that were sent to client.

**Conclusions or Agreements**

He will get info to OCD

**Distribution**

**Signed** Bill Olson

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

RECEIVED

APR 09 2003

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

April 4, 2003

Job # 00110-001

Energy, Minerals, and Natural Resources
State of New Mexico Oil Conservation Division
Attn: Bill Olson
1220 S. St. Francis Road
Santa Fe, New Mexico 87501

**RE: GROUND WATER ASSESSMENT, MILLER D1, SAN JUAN COUNTY, NEW MEXICO**

Dear Mr. Olson:

Enclosed, please find a copy of the letter report for the fourth quarterly groundwater monitoring event for the Miller D1 in San Juan County, New Mexico. All four (4) quarters of monitoring have been completed. Per the attached document, we request OCD closure and subsequent approval to plug and abandon the monitor wells at the location.

Should you have any questions or need additional information, please do not hesitate to contact us at (505) 632-0615.

Sincerely,

**ENVIROTECH INC.**

Kyle Kerr
Environmental Scientist
kpkerr@envirotech-inc.com

Enclosure: Letter Report

Cc: File No. 00110

KPK/F:\Projects\Yates Petroleum\December 01\Cover Letter-Olson

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

December 13, 2002 Job # 00110-001

Yates Petroleum Corporation
Attn: Drew Podlesny
P.O. Box 1908
Rock Springs, Wyoming 82902

Phone (307) 382-4005
Fax (307) 382-5923

**RE: GROUND WATER ASSESSMENT**
**MILLER D1, SAN JUAN COUNTY, NEW MEXICO**

Dear Mr. Podlesny:

Please find enclosed certificates of analysis from the laboratory and the field notes for the fourth quarterly monitoring event for Miller D1 in San Juan County, New Mexico.

All three (3) monitor wells (MW-1, MW-2, and MW-3) had detectable amounts of BTEX, but these were well below the New Mexico Water Quality Control Commission (NMWQCC) Standards. BTEX results are summarized in ***Table 1, Laboratory Results of Groundwater Sample Analyses for BTEX.***

Total Petroleum Hydrocarbon (TPH) results were below detection limits in all three (3) wells. TPH results are summarized in ***Table 2, Laboratory Results of Groundwater Sample Analyses for Total Petroleum Hydrocarbons.***

Based on the results of the four quarters of sampling, there is negligible impact on the groundwater from the former separator pit and it is confined to the perimeter of the old pit. As requested by the New Mexico Oil Conservation Division (OCD), four quarters of monitoring and sampling have been completed for this site. Laboratory results for each of the four sampling events have been below NMWQCC standards for the constituents of concern in all wells. Envirotech recommends no further monitoring and sampling at this site. Envirotech also recommends plugging and abandoning (P & A) the three monitor wells on-site.

If you have any questions or need additional information, please contact me at (505) 632-0615.

Respectfully Submitted,
ENVIROTECH INC.

CHARLES J. COLLINS, P.G. NEW MEXICO 038

C. Jack Collins, P.G. #1822
Chief Environmental Scientist/Geologist
NMCES #038
jcollins@envirotech-inc.com

Enclosure: Table 1, Laboratory Results of Groundwater Sample Analyses for BTEX
Table 2, Laboratory Results of Groundwater Sample Analyses for Total Petroleum Hydrocarbons
Certificates of Analysis
Field Notes

CJC:/jsl/F:\Projects\Yates Petroleum\Nov 2001\Letter Report

| | |
|---|---|
| Client | Yates Petroleum Corp |
| | Miller D-1Seperator |
| | Pit Remeditation |
| Date | December 13, 2002 |
| Job # | 00110-001 |

**Table 1**
Laboratory Results of Groundwater Sample Analyses for BTEX

| NMED Action Levels | | | 10 | 750 | 750 | 620 | NA |
|---|---|---|---|---|---|---|---|
| Well # | Sample Date | Sample Depth (ft.) TOC | ppb(ug/L) | | | | |
| | | | Benzene | Touluene | Ethyl-Benzene | Total Xylenes | Total BTEX |
| MW-1 | 01/17/01 | 17.4-19.4 | <0.1 | 0.7 | 1.2 | 24.9 | 26.8 |
| | 05/09/01 | 16.8-18.8 | 0.3 | <0.1 | 0.7 | <0.1 | 1 |
| | 08/27/01 | 12.0-14.0 | <0.1 | <0.1 | 0.3 | 1.8 | 2.1 |
| | 12/03/01 | 15.8-17.8 | 0.2 | <0.1 | 0.3 | <0.1 | 0.5 |
| | | | | | | | |
| MW-2 | 01/17/01 | 18.3-20.3 | 2.8 | <0.1 | 1.3 | 8 | 12.1 |
| | 05/09/01 | 17.7-19.7 | 0.4 | <0.1 | 0.5 | <0.1 | 0.9 |
| | 08/27/01 | 12.8-14.8 | <0.1 | <0.1 | 0.4 | 3.8 | 4.2 |
| | 12/03/01 | 16.8-18.8 | 0.7 | <0.1 | 0.2 | 3.6 | 4.5 |
| | | | | | | | |
| MW-3 | 02/02/01 | 23.8-25.8 | <0.1 | <0.1 | <0.1 | <0.1 | <0.4 |
| | 05/09/01 | 19.6-21.6 | <0.1 | <0.1 | <0.1 | <0.1 | <0.4 |
| | 08/27/01 | 14.7-16.7 | <0.1 | <0.1 | <0.1 | 1.8 | 1.8 |
| | 12/03/01 | 18.5-20.5 | 0.9 | <0.1 | <0.1 | <0.1 | 0.9 |
| | | | | | | | |

Note: Values in Bold Exceed New Mexico Water Qualtiy Control Commission (NMWQCC) Standards
ND = Not Detected ppb = parts per billion

| | |
|---|---|
| Client | Yates Petroleum Corp. |
| | Miller D-1Seperator |
| | Pit Remeditation |
| Date | December 13, 2002 |
| Job # | 00110-001 |

**Table 2**
Laboratory Results of Ground Water Sample Analyses for Total Petroleum Hydrocarbons

| EPA METHOD 8015 | | | ppm(mg/L) | | |
|---|---|---|---|---|---|
| Well # | Sample *Date* | Sample *Depth (ft.)* TOC | Gasoline *Range* (C5-C10 | Diesel *Range* (C10-C28) | Total Petroleum Hydrocarbons |
| MW-1 | 01/17/01 | 17.4-19.4 | <0.1 | <0.5 | <0.1 |
| | 05/09/01 | 16.8-18.8 | <0.1 | <0.5 | <0.1 |
| | 08/27/01 | 12.0-14.0 | <0.1 | <0.5 | <0.1 |
| | 12/03/01 | 15.8-17.8 | <0.1 | <0.5 | <0.1 |
| | | | | | |
| MW-2 | 01/17/01 | 18.3-20.3 | <0.1 | <0.5 | <0.1 |
| | 05/09/01 | 17.7-19.7 | <0.1 | <0.5 | <0.1 |
| | 08/27/01 | 12.8-14.8 | <0.1 | <0.5 | <0.1 |
| | 12/03/01 | 16.8-18.8 | <0.1 | <0.5 | <0.1 |
| | | | | | |
| MW-3 | 01/17/01 | 23.8-25.8 | <0.1 | <0.5 | <0.1 |
| | 05/09/01 | 19.6-21.6 | <0.1 | <0.5 | <0.1 |
| | 08/27/01 | 14.7-16.7 | <0.1 | <0.5 | <0.1 |
| | 12/03/01 | 18.5-20.5 | <0.1 | <0.5 | <0.1 |
| | | | | | |

Note: Values in Bold Exceed New Mexico Water Qualtiy Control Commission (NMWQCC) Standards
ND = Not Detected ppm = parts per million

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 1 | Date Reported: | 12-04-01 |
| Chain of Custody: | 8830 | Date Sampled: | 12-03-01 |
| Laboratory Number: | 21629 | Date Received: | 12-03-01 |
| Sample Matrix: | Water | Date Analyzed: | 12-04-01 |
| Preservative: | Cool | Analysis Requested: | BTEX |
| Condition: | Cool & Intact | | |

| Parameter | Concentration (ug/L) | Dilution Factor | Det. Limit (ug/L) |
|---|---|---|---|
| **Benzene** | **0.2** | **1** | **0.2** |
| **Toluene** | **ND** | **1** | **0.2** |
| **Ethylbenzene** | **0.3** | **1** | **0.2** |
| **p,m-Xylene** | **ND** | **1** | **0.2** |
| **o-Xylene** | **ND** | **1** | **0.1** |
| **Total BTEX** | **0.5** | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **fluorobenzene** | **98 %** |
| | **1,4-difluorobenzene** | **98 %** |
| | **4-bromochlorobenzene** | **98 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **Yates Petroleum, Miller D 1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 2 | Date Reported: | 12-04-01 |
| Chain of Custody: | 8830 | Date Sampled: | 12-03-01 |
| Laboratory Number: | 21630 | Date Received: | 12-03-01 |
| Sample Matrix: | Water | Date Analyzed: | 12-04-01 |
| Preservative: | Cool | Analysis Requested: | BTEX |
| Condition: | Cool & Intact | | |

| Parameter | Concentration (ug/L) | Dilution Factor | Det. Limit (ug/L) |
|---|---|---|---|
| **Benzene** | **0.7** | **1** | **0.2** |
| **Toluene** | **ND** | **1** | **0.2** |
| **Ethylbenzene** | **0.2** | **1** | **0.2** |
| **p,m-Xylene** | **2.0** | **1** | **0.2** |
| **o-Xylene** | **1.6** | **1** | **0.1** |
| **Total BTEX** | **4.5** | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **fluorobenzene** | **98 %** |
| | **1,4-difluorobenzene** | **98 %** |
| | **4-bromochlorobenzene** | **98 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **Yates Petroleum, Miller D 1.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 3 | Date Reported: | 12-04-01 |
| Chain of Custody: | 8830 | Date Sampled: | 12-03-01 |
| Laboratory Number: | 21631 | Date Received: | 12-03-01 |
| Sample Matrix: | Water | Date Analyzed: | 12-04-01 |
| Preservative: | Cool | Analysis Requested: | BTEX |
| Condition: | Cool & Intact | | |

| Parameter | Concentration (ug/L) | Dilution Factor | Det. Limit (ug/L) |
|---|---|---|---|
| **Benzene** | **0.9** | **1** | **0.2** |
| **Toluene** | **ND** | **1** | **0.2** |
| **Ethylbenzene** | **ND** | **1** | **0.2** |
| **p,m-Xylene** | **ND** | **1** | **0.2** |
| **o-Xylene** | **ND** | **1** | **0.1** |
| **Total BTEX** | **0.9** | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **fluorobenzene** | **98 %** |
| | **1,4-difluorobenzene** | **98 %** |
| | **4-bromochlorobenzene** | **98 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **Yates Petroleum, Miller D 1.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8021
# AROMATIC VOLATILE ORGANICS
# QUALITY ASSURANCE REPORT

| | | | |
|---|---|---|---|
| Client: | N/A | Project #: | N/A |
| Sample ID: | 12-04-BTEX QA/QC | Date Reported: | 12-04-01 |
| Laboratory Number: | 21629 | Date Sampled: | N/A |
| Sample Matrix: | Water | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 12-04-01 |
| Condition: | N/A | Analysis: | BTEX |

| Calibration and Detection Limits (ug/L) | I-Cal RF: | C-Cal RF: | %Diff. Accept. Range 0 - 15% | Blank Conc | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 1.7143E-001 | 1.7177E-001 | 0.20% | ND | 0.2 |
| Toluene | 9.4693E-002 | 9.4712E-002 | 0.02% | ND | 0.2 |
| Ethylbenzene | 1.2284E-001 | 1.2309E-001 | 0.20% | ND | 0.2 |
| p,m-Xylene | 1.0810E-001 | 1.0813E-001 | 0.02% | ND | 0.2 |
| o-Xylene | 9.2106E-002 | 9.2383E-002 | 0.30% | ND | 0.1 |

| Duplicate Conc. (ug/L) | Sample | Duplicate | %Diff. | Accept Limit |
|---|---|---|---|---|
| Benzene | 0.2 | 0.2 | 0.0% | 0 - 30% |
| Toluene | ND | ND | 0.0% | 0 - 30% |
| Ethylbenzene | 0.3 | 0.3 | 0.0% | 0 - 30% |
| p,m-Xylene | ND | ND | 0.0% | 0 - 30% |
| o-Xylene | ND | ND | 0.0% | 0 - 30% |

| Spike Conc. (ug/L) | Sample | Amount Spiked | Spiked Sample | % Recovery | Accept Limits |
|---|---|---|---|---|---|
| Benzene | 0.2 | 50.0 | 50.2 | 100.0% | 39 - 150 |
| Toluene | ND | 50.0 | 50.0 | 100.0% | 46 - 148 |
| Ethylbenzene | 0.3 | 50.0 | 50.3 | 100.0% | 32 - 160 |
| p,m-Xylene | ND | 100 | 100 | 100.0% | 46 - 148 |
| o-Xylene | ND | 50.0 | 50.0 | 100.0% | 46 - 148 |

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **QA/QC for samples 21629 - 21631.**

Analyst

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 1 | Date Reported: | 12-04-01 |
| Laboratory Number: | 21629 | Date Sampled: | 12-03-01 |
| Chain of Custody No: | 8830 | Date Received: | 12-03-01 |
| Sample Matrix: | Water | Date Extracted: | 12-04-01 |
| Preservative: | Cool | Date Analyzed: | 12-04-01 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/L) | Det. Limit (mg/L) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Yates Petroleum Miller D 1.**

Analyst

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 2 | Date Reported: | 12-04-01 |
| Laboratory Number: | 21630 | Date Sampled: | 12-03-01 |
| Chain of Custody No: | 8830 | Date Received: | 12-03-01 |
| Sample Matrix: | Water | Date Extracted: | 12-04-01 |
| Preservative: | Cool | Date Analyzed: | 12-04-01 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/L) | Det. Limit (mg/L) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Yates Petroleum Miller D 1.**

Analyst

Review

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Yates Petroleum | Project #: | 00110-001 |
| Sample ID: | MW - 3 | Date Reported: | 12-04-01 |
| Laboratory Number: | 21631 | Date Sampled: | 12-03-01 |
| Chain of Custody No: | 8830 | Date Received: | 12-03-01 |
| Sample Matrix: | Water | Date Extracted: | 12-04-01 |
| Preservative: | Cool | Date Analyzed: | 12-04-01 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/L) | Det. Limit (mg/L) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Yates Petroleum Miller D 1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA Method 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

## Quality Assurance Report

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | 12-04-TPH QA/QC | Date Reported: | 12-04-01 |
| Laboratory Number: | 21629 | Date Sampled: | N/A |
| Sample Matrix: | Methylene Chloride | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 12-04-01 |
| Condition: | N/A | Analysis Requested: | TPH |

| | I-Cal Date | I-Cal RF: | C-Cal RF: | % Difference | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | 08-22-01 | 1.2571E-002 | 1.2549E-002 | **0.18%** | **0 - 15%** |
| **Diesel Range C10 - C28** | 08-22-01 | 8.3733E-003 | 8.3599E-003 | **0.16%** | **0 - 15%** |

| Blank Conc. (mg/L ) | Concentration | Detection Limit |
|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **0.2** |
| **Diesel Range C10 - C28** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

| Duplicate Conc. (mg/L) | Sample | Duplicate | % Difference | Accept. Range |
|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **ND** | **0.0%** | **0 - 30%** |
| **Diesel Range C10 - C28** | **ND** | **ND** | **0.0%** | **0 - 30%** |

| Spike Conc. (mg/L) | Sample | Spike Added | Spike Result | % Recovery | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **25.0** | **25.0** | **100%** | **75 - 125%** |
| **Diesel Range C10 - C28** | **ND** | **25.0** | **25.0** | **100%** | **75 - 125%** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples 21629 - 21631.**

Analyst

Review

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# CHAIN OF CUSTODY RECORD

08830

| Client / Project Name | Project Location | ANALYSIS / PARAMETERS |
|---|---|---|
| Yates Petroleum Miller D1 | Yates Petroleum Miller D1 | |
| Sampler: JSL | Client No. 00110-001 | |

| Sample No./ Identification | Sample Date | Sample Time | Lab Number | Sample Matrix | No. of Containers | 8021 BTEX | 8015 TPH | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 12-03-01 | 920 | 21629 | Water | 3 | ✓ | ✓ | | | | | |
| MW-2 | 12-03-01 | 935 | 21630 | Water | 3 | ✓ | ✓ | | | | | |
| MW-3 | 12-03-01 | 950 | 21631 | Water | 3 | ✓ | ✓ | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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| | | | | | | | | | | | | |

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Jodi Saunders Lee | 12-03-01 | 1032 | Dawn E. Cepeda | 12-3-01 | 1032 |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |


ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615


| Sample Receipt | Y | N | N/A |
|---|---|---|---|
| Received Intact | ✓ | | |
| Cool - Ice/Blue Ice | ✓ | | |

ENVIROTECH INC
FARMINGTON, NM 5796 HIGHWAY 64
MONITOR WELL DATA

Date: Dec 3, 2001 Project No: 00110-001

Project Name: _____ Chain of Custody No: _____

Location: Yates Petroleum Miller D1

Project Manager: _____ Sampler: JSL

MONITOR WELL DATA

| WELL # | TIME | OVM ppm | pH | COND. µS | TEMP. °F | DEPTH TO WATER FT. | TOTAL DEPTH FT. | WATER COLUMN FT. | BAILED Water Gal. | PRODUCT Ft. | WATER LEVEL FT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 920 | | 7.4 | 3.24 | 54.5 | 15.75 | 17.37 | 1.62 | ~0.75gal | | |
| MW-2 | 935 | | 7.4 | 3.51 | 56.3 | 16.78 | 18.31 | 1.53 | ~0.75gal | | |
| MW-3 | 950 | | 8.0 | 4.12 | 55.8 | 18.47 | 23.77 | 5.30 | 2.5gal | | |

Notes: TOC = Top of Casing
Bailed = 3 well volumnes:
1.25" well = 0.19 gal/ft.
2.00" well = 0.49 gal/ft.
4.00" well = 1.96 gal/ft.
Note well diameter if not one of the above.

**Olson, William**
**From:** Olson, William
**Sent:** Friday, February 02, 2001 3:28 PM
**To:** 'Harlan'
**Subject:** RE: Request for extension to complete Hydro-Geo investigation

The below requested extension request is approved.

---

**From: Harlan [SMTP:hbrown@envirotech-inc.com]**
Sent: Friday, February 02, 2001 11:29 AM
To: wolson@state.nm.us
Subject: Request for extension to complete Hydro-Geo investigation

Bill,

Envirotech Inc. is in the process of completing a groundwater investigation for Yates Petroleum at the Miller D-1 ( a former JN Exploration well site). We received results for PAH analysis on Wednesday February 1, 2001 for water samples from two of the wells. A third well was slow to develop water. We have a technician in the field today (February 2, 2001) developing and sampling the third well. Per our conversation of this date we are requesting an extension of the due date for the groundwater study so that we can submit all of the data related to the site in a single submittal. We anticipate receipt of the HPLC (PAH) data for the third well in two weeks.

We are requesting an extension for delivery of the report until March 3, 2001.

Sincerely,
Envirotech Inc.

Harlan M. Brown

**Olson, William**
**From:** engypc@pvtnetworks.net [SMTP:engypc@pvtnetworks.net]
**Sent:** Monday, December 18, 2000 11:20 AM
**To:** wolson@state.nm.us
**Subject:** Request for extension

Bill,
Thanks for the call on the Miller D-1, pit closure in Farmington. Yates Petroleum Corporation (YPC) purchased this, and 14 other properties in the Farmington area this month from JN Exploration & Production LP.

Mr. W. M. (Bill) Belden from JN has been working with Envirotech in Farmington on the pit closures for these properties. Envirotech forwarded me a letter from you to Mr. Belden dated November 6, 2000 requesting the results of the Miller D-1 site investigation (monitor well reports) to be submitted to you by December 31, 2000.

Since we are in the process of gathering up and evavluating all of the associated paperwork for this purchase, I don't believe we can provide the information you requested by December 31, 2000.

Per our conversation this morning, this correspondence is a record of the permission you verbally gave me granting Yates Petroleum Corporation a one month extension until January 31, 2001 to conduct our paperwork analysis and perform the ground water monitoring well installation and ground water monitoring that was agreed upon.

Thanks,

David Haggith
YPC Environmental Coordinator
New Mexico

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

November 2, 2000

JN Exploration & Production LP
Attn: W. M. "Bill" Belden
550 N. 31st Street, Suite 300
P.O. Box 7167
Billings , Montana 59101

Re: Proposal for monitor well drilling for the Miller D1, San Juan County, New Mexico

Dear Bill:

The following is a description of typical monitor well construction for wells that will be used to conduct quarterly monitoring. We anticipate groundwater to be approximately 11' below natural grade. Two inch monitor wells will be completed with 10' of .01 screen set with five feet above the water table and five into the water table to allow for variations in groundwater levels. The well borings will be completed with 10-20 Colorado Silica sand to one foot above the screen. The annulus will be sealed with 3/8" bentonite chips to two feet above the sand. The balance of the annulus will be filled with drill cuttings. An above grade completion will set in concrete to prevent damage to the well. The casing will be sealed with a locking plug.

Three wells will placed in order to determine the hydraulic gradient of groundwater.

A site map is included with a recommended placement for the monitor wells.

If you have any questions or comments regarding this proposal please feel free to contact us at 800-362-1879.

Sincerely,
Envirotech Inc.

Harlan M. Brown
Geologist / Hydrogeologist
New Mexico Certified Scientist #083

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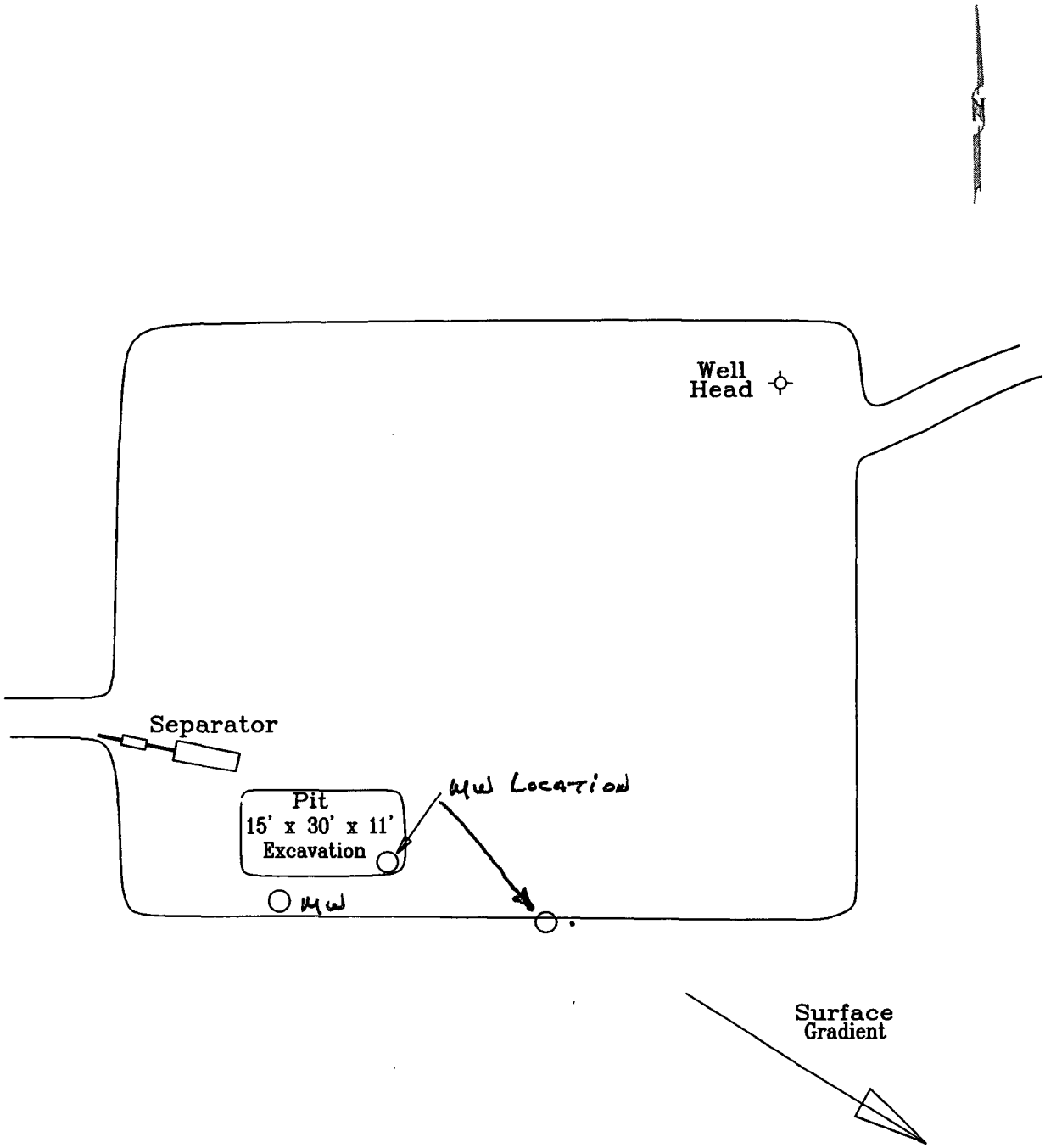
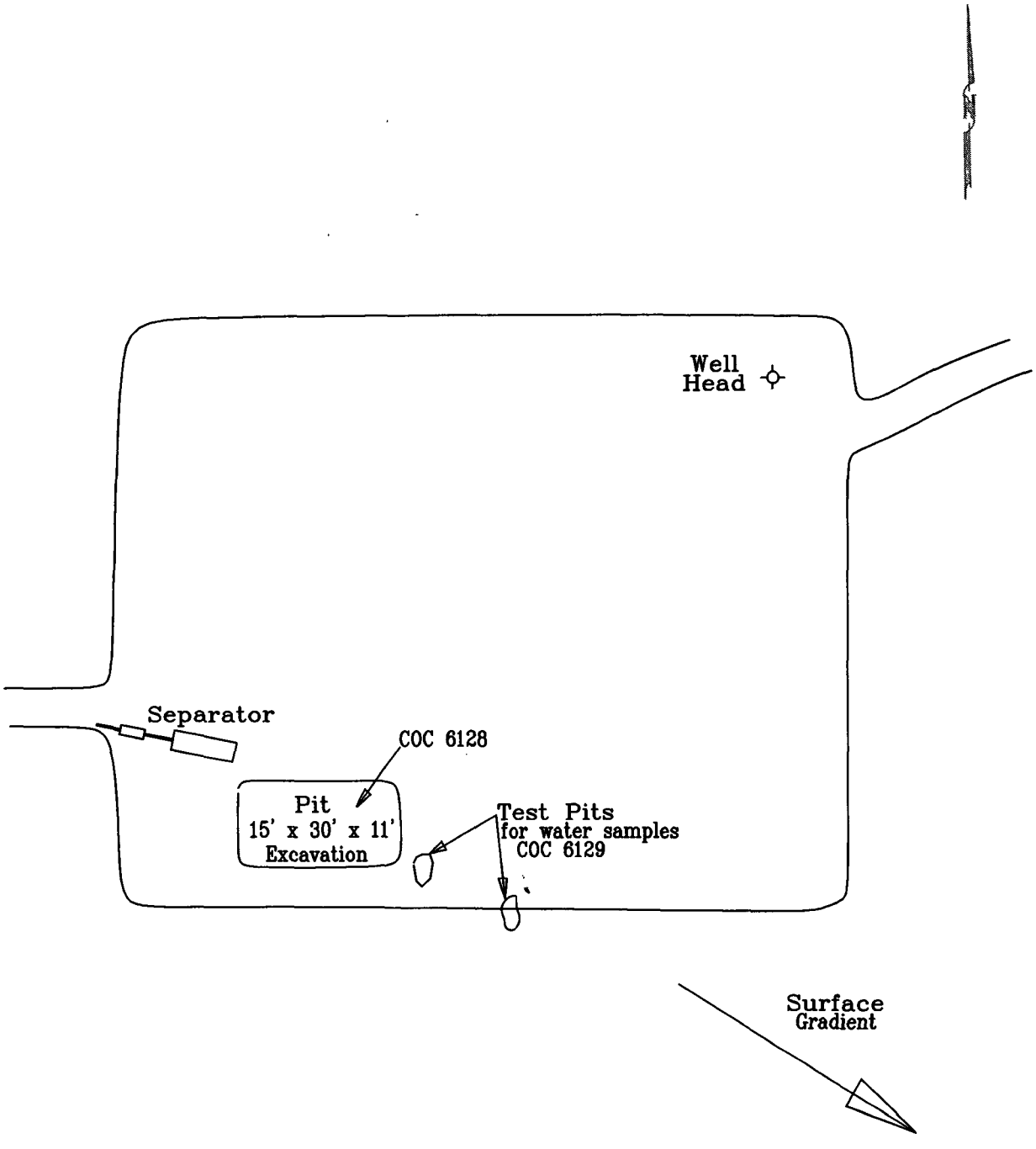



NO SCALE

All angles, directions, and distances determined by sighting and pacing from existing site features. Accuracy of measurementis implied only to the degree of accuracy of method.

| | | |
|---|---|---|
| JN Exploration<br>Miller D-1<br>Separator<br>Pit Remediation<br>"M", Sec. 20, T30N, R13W<br>San Juan County, NM<br>Project No.: 97070 | Envirotech Inc.<br>Environmental Scientists & Engineers<br>5796 US Highway 64<br>Farmington, New Mexico | Site Map<br>Figure 1 \| Date: 07/98<br>DRW: HMB \| PRJ MGR: HMB |




NO SCALE

All angles, directions, and distances determined by sighting and pacing from existing site features. Accuracy of measurementis implied only to the degree of accuracy of method.

| | | |
|---|---|---|
| JN Exploration<br>Miller D-1<br>Separator<br>Pit Remediation<br>"M", Sec. 20, T30N, R13W<br>San Juan County, NM<br>Project No.: 97070 | Envirotech Inc.<br>Environmental Scientists & Engineers<br>5796 US Highway 64<br>Farmington, New Mexico | Site Map<br>Figure 1 \| Date: 07/98<br>DRW: HMB \| PRJ MGR: HMB |

District I
P O Box 1980, Hobbs, NM
District II
P O. Drawer DD, Artesia, NM 88211
District III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico Groundwater
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

OCT 2000 RECEIVED OIL CON. DIV. DIST. 3

# PIT REMEDIATION AND CLOSURE REPORT

Operator: JN Exploration & Production LP Telephone: 406-248-2222

Address: P.O Box 7167; Billings, Montana 59103

Facility Or: Miller D-1
Well Name

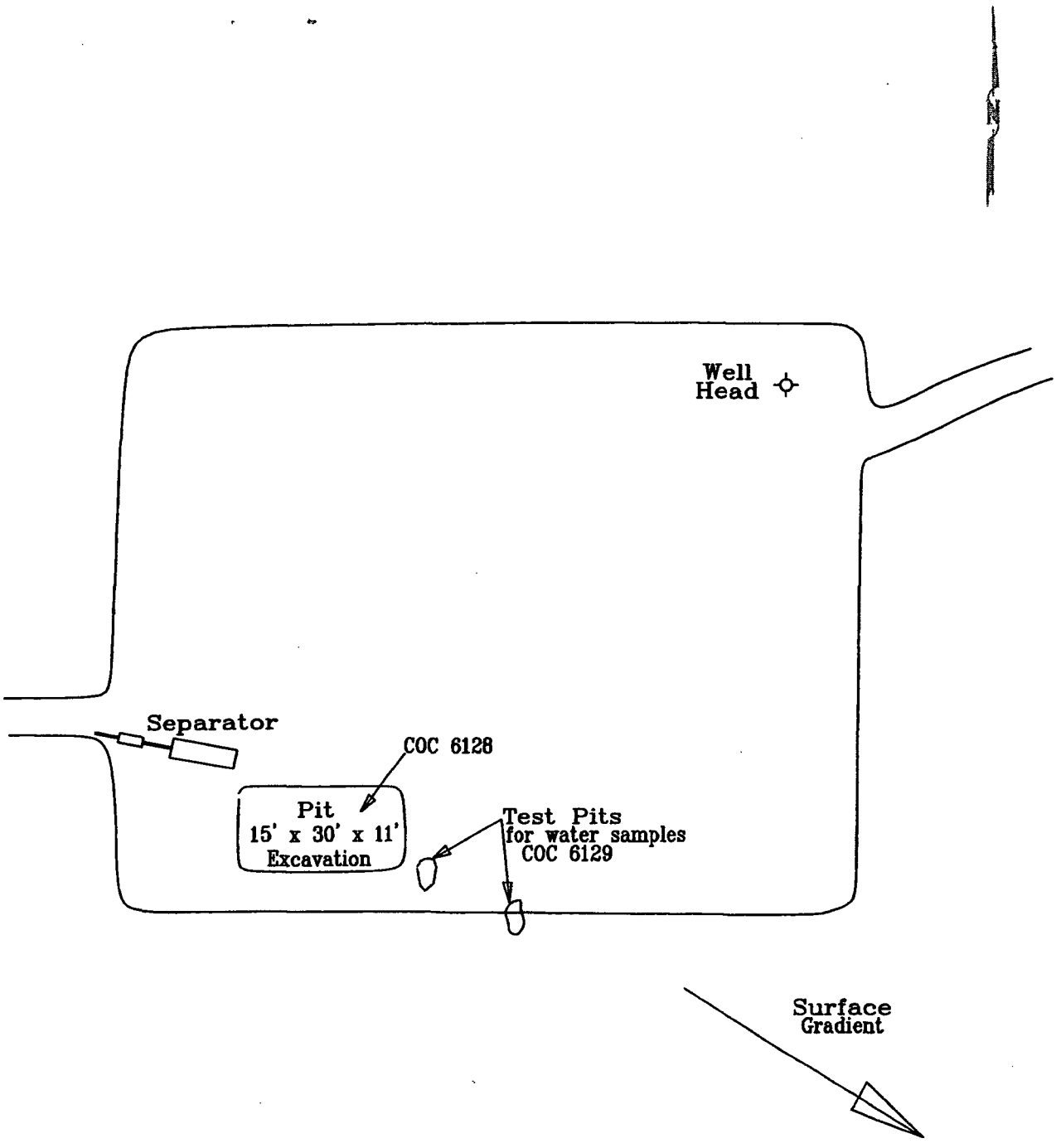
Location: Unit or Qtr/Qtr Sec SW SW Sec 20 T 30N R 13W County San Juan, New Mexico

Pit Type: Separator X Dehydrator ___ Other ___

Land Type: BLM ___, State X, Fee ___, Other ___ / Wildlife Refuge

Pit Location: (Attach diagram)
Pit dimensions: length 30, width 15, depth 11
Reference: wellhead X, other ___
Footage from reference: 126'
Direction from reference: 45 Degrees ___ East North ___ of X West South X

| | | |
|---|---|---|
| **Depth To Ground Water:** (Vertical distance from contaminants to seasonal high water elevation of ground water) | Less than 50 feet (20 points)<br>50 feet to 99 feet (10 points)<br>Greater than 100 feet (0 Points) | 20 |
| **Wellhead Protection Area:** (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources) | Yes (20 points)<br>No (0 points) | 0 |
| **Distance To Surface Water:** (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches) | Less than 200 feet (20 points)<br>200 feet to 1000 feet (10 points)<br>Greater than 1000 feet (0 points) | 0 |
| | RANKING SCORE (TOTAL POINTS): | 20 |




NO SCALE

All angles, directions, and distances determined by sighting and pacing from existing site features. Accuracy of measurementis implied only to the degree of accuracy of method.

| | | |
|---|---|---|
| JN Exploration<br>Miller D-1<br>Separator<br>Pit Remediation<br>"M", Sec. 20, T30N, R13W<br>San Juan County, NM<br>Project No.: 97070 | Envirotech Inc.<br>Environmental Scientists & Engineers<br>5796 US Highway 64<br>Farmington, New Mexico | Site Map<br>Figure 1 \| Date: 07/98<br>DRW: HMB \| PRJ MGR: HMB |

39
3
114
12
126

DK

CLIENT: ~~AMOCO~~ JN Exploration

# ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

LOCATION NO: _____
C.O.C. NO: 6128 / 6129

## FIELD REPORT: CLOSURE VERIFICATION

PAGE No: ____ of ____

Aka D Miller SWSW 21 T30N R13W

LOCATION: NAME: Miller D-1 WELL #: PIT:
QUAD/UNIT: SWSW SEC: 20 TWP: 30N RNG: 13W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: 790'FSL 790'FWL CONTRACTOR: Envirotech

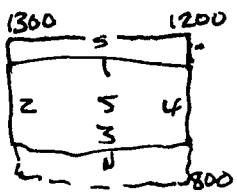
DATE STARTED: 6.18.00
DATE FINISHED: 6.19.00
ENVIRONMENTAL SPECIALIST: HMB

EXCAVATION APPROX. 30 FT. x 15 FT. x 11 FT. DEEP. CUBIC YARDAGE: 154 cy.
DISPOSAL FACILITY: Envirotech - Landfarm 2 REMEDIATION METHOD: Landfarm
LAND USE: Federal - Wildlife Ref. LEASE: _____ FORMATION: _____

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 126' FT. SW FROM WELLHEAD.
DEPTH TO GROUNDWATER: 11' NEAREST WATER SOURCE: 7200 NEAREST SURFACE WATER: 71000'
NMOCD RANKING SCORE: 20 NMOCD TPH CLOSURE STD: 100 PPM

CHECK ONE:
X PIT ABANDONED
___ STEEL TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:

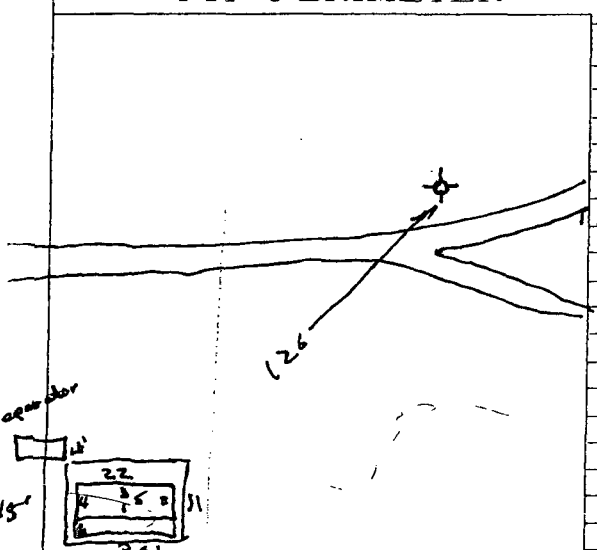



SCALE
0 FT

FIELD 418.1 CALCULATIONS

| TIME | SAMPLE I.D. | LAB No: | WEIGHT (g) | mL. FREON | DILUTION | READING | CALC. ppm |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## PIT PERIMETER



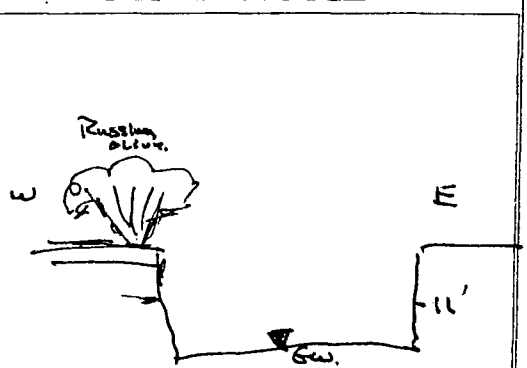

## OVM RESULTS

| SAMPLE ID | FIELD HEADSPACE P.I.D (ppm) |
|---|---|
| 1 | 420 |
| 2 | 810 |
| 3 | 700 |
| 4 | 470 |
| 5 | 300 |
| 6 | |

LAB SAMPLES

| SAMPLE ID | ANALYSIS | TIME |
|---|---|---|
| | | |

## PIT PROFILE




TRAVEL NOTES: CALLOUT: _____ ONSITE: _____

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | J N Exploration | Project #: | 98056-01 |
| Sample ID: | G.W. @ 11' | Date Reported: | 06-19-98 |
| Laboratory Number: | D449 | Date Sampled: | 06-18-98 |
| Chain of Custody No: | 6128 | Date Received: | 06-18-98 |
| Sample Matrix: | Water | Date Extracted: | 06-19-98 |
| Preservative: | Cool | Date Analyzed: | 06-19-98 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **2.8** | **0.2** |
| **Diesel Range (C10 - C28)** | **0.4** | **0.1** |
| **Total Petroleum Hydrocarbons** | **3.2** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Miller D - 1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA Method 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

## Quality Assurance Report

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | 06-19-TPH QA/QC | Date Reported: | 06-19-98 |
| Laboratory Number: | D440 | Date Sampled: | N/A |
| Sample Matrix: | Methylene Chloride | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 06-19-98 |
| Condition: | N/A | Analysis Requested: | TPH |

| Calibration | I-Cal Date | I-Cal RF | C-Cal RF | % Difference | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | 04-28-98 | 2.3634E-02 | 2.3535E-02 | **0.42%** | **0 - 15%** |
| **Diesel Range C10 - C28** | 04-28-98 | 2.3141E-02 | 2.3039E-02 | **0.44%** | **0 - 15%** |

| Blank Conc. (mg/L - mg/Kg) | Concentration | Detection Limit |
|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **0.2** |
| **Diesel Range C10 - C28** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

| Duplicate Conc. (mg/Kg) | Sample | Duplicate | % Difference | Accept. Range |
|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **ND** | **0.0%** | **0 - 30%** |
| **Diesel Range C10 - C28** | **49.3** | **48.4** | **1.8%** | **0 - 30%** |

| Spike Conc. (mg/Kg) | Sample | Spike Added | Spike Result | % Recovery | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **250** | **250** | **100%** | **75 - 125%** |
| **Diesel Range C10 - C28** | **49.3** | **250** | **299** | **100%** | **75 - 125%** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Wast SW-846, USEPA, December 1996.

Comments: **QA/QC for samples D440 - D447 and D449.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | J N Exploration | Project #: | 98056-01 |
| Sample ID: | G.W. @ 11' | Date Reported: | 06-19-98 |
| Chain of Custody: | 6128 | Date Sampled: | 06-18-98 |
| Laboratory Number: | D449 | Date Received: | 06-18-98 |
| Sample Matrix: | Water | Date Analyzed: | 06-19-98 |
| Preservative: | HgCl2 & Cool | Analysis Requested: | BTEX |
| Condition: | Cool & Intact | | |

| Parameter | Concentration (ug/L) | Dilution Factor | Det. Limit (ug/L) |
|---|---|---|---|
| **Benzene** | **671** | **10** | **1.8** |
| **Toluene** | **529** | **10** | **1.7** |
| **Ethylbenzene** | **252** | **10** | **1.5** |
| **p,m-Xylene** | **1,040** | **10** | **2.2** |
| **o-Xylene** | **101** | **10** | **1.0** |
| **Total BTEX** | **2,590** | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Trifluorotoluene** | **99 %** |
| | **Bromofluorobenzene** | **99 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **Miller D - 1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8021
# AROMATIC VOLATILE ORGANICS
# QUALITY ASSURANCE REPORT

| | | | |
|---|---|---|---|
| Client: | N/A | Project #: | N/A |
| Sample ID: | 06-19-BTEX QA/QC | Date Reported: | 06-19-98 |
| Laboratory Number: | D440 | Date Sampled: | N/A |
| Sample Matrix: | Soil | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 06-19-98 |
| Condition: | N/A | Analysis: | BTEX |

| Calibration and Detection Limits (ug/L) | I-Cal RF: | C-Cal RF: | %Diff. Accept. Range 0 - 15% | Blank Conc | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 5.4370E-02 | 5.4479E-02 | 0.2% | ND | 0.2 |
| Toluene | 2.9051E-02 | 2.9138E-02 | 0.3% | ND | 0.2 |
| Ethylbenzene | 2.6516E-02 | 2.6671E-02 | 0.6% | ND | 0.2 |
| p,m-Xylene | 1.8915E-02 | 1.9048E-02 | 0.7% | ND | 0.2 |
| o-Xylene | 2.1590E-02 | 2.1677E-02 | 0.4% | ND | 0.1 |

| Duplicate Conc. (ug/Kg) | Sample | Duplicate | %Diff. | Accept Range | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | ND | ND | 0.0% | 0 - 30% | 8.8 |
| Toluene | ND | ND | 0.0% | 0 - 30% | 8.4 |
| Ethylbenzene | ND | ND | 0.0% | 0 - 30% | 7.6 |
| p,m-Xylene | 133 | 129 | 3.1% | 0 - 30% | 10.8 |
| o-Xylene | ND | ND | 0.0% | 0 - 30% | 5.2 |

| Spike Conc. (ug/Kg) | Sample | Amount Spiked | Spiked Sample | % Recovery | Accept Range |
|---|---|---|---|---|---|
| Benzene | ND | 50.0 | 49.5 | 99% | 39 - 150 |
| Toluene | ND | 50.0 | 49.9 | 100% | 46 - 148 |
| Ethylbenzene | ND | 50.0 | 49.6 | 99% | 32 - 160 |
| p,m-Xylene | 133 | 100.0 | 233 | 100% | 46 - 148 |
| o-Xylene | ND | 50.0 | 49.9 | 100% | 46 - 148 |

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **QA/QC for samples D440 - D447 and D449.**

Analyst

Review

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# CHAIN OF CUSTODY RECORD

6128

| Client / Project Name | Project Location | ANALYSIS / PARAMETERS |
|---|---|---|
| JN Exploration. | Miller D-1 | |
| Sampler: Harlan M. Brown | Client No. 98056-01 | |

| Sample No./ Identification | Sample Date | Sample Time | Lab Number | Sample Matrix | No. of Containers | 8015 TPH | 8021 BTEX | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G.W. @ 11' | 6.18.98 | 14:25 | 0449 | Water | 2 | ✓ | ✓ | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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| | | | | | | | | | | | | |

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Harlan M. Brown | 6.18.98 | 18:00 | Jerry L. Ogden | 6.18.98 | 1800 |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |


ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615


| Sample Receipt | Y | N | N/A |
|---|---|---|---|
| Received Intact | ✓ | | |
| Cool - Ice/Blue Ice | ✓ | | |

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | J N Exploration | Project #: | 98056-01 |
| Sample ID: | 6' Offset SE | Date Reported: | 06-23-98 |
| Chain of Custody: | 6129 | Date Sampled: | 06-19-98 |
| Laboratory Number: | D450 | Date Received: | 06-19-98 |
| Sample Matrix: | Water | Date Analyzed: | 06-23-98 |
| Preservative: | HgCl2 & Cool | Analysis Requested: | BTEX |
| Condition: | Cool & Intact | | |

| Parameter | Concentration (ug/L) | Dilution Factor | Det. Limit (ug/L) |
|---|---|---|---|
| **Benzene** | **765** | **10** | **0.2** |
| **Toluene** | **15.2** | **10** | **0.2** |
| **Ethylbenzene** | **240** | **10** | **0.2** |
| **p,m-Xylene** | **1,470** | **10** | **0.2** |
| **o-Xylene** | **91.5** | **10** | **0.1** |
| **Total BTEX** | **2,580** | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Trifluorotoluene** | **100 %** |
| | **Bromofluorobenzene** | **100 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **Miller D - 1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | J N Exploration | Project #: | 98056-01 |
| Sample ID: | 25' Offset ESE | Date Reported: | 06-23-98 |
| Chain of Custody: | 6129 | Date Sampled: | 06-19-98 |
| Laboratory Number: | D451 | Date Received: | 06-19-98 |
| Sample Matrix: | Water | Date Analyzed: | 06-23-98 |
| Preservative: | HgCl2 & Cool | Analysis Requested: | BTEX |
| Condition: | Cool & Intact | | |

| Parameter | Concentration (ug/L) | Dilution Factor | Det. Limit (ug/L) |
|---|---|---|---|
| **Benzene** | **5.5** | **1** | **0.2** |
| **Toluene** | **ND** | **1** | **0.2** |
| **Ethylbenzene** | **1.1** | **1** | **0.2** |
| **p,m-Xylene** | **22.0** | **1** | **0.2** |
| **o-Xylene** | **1.5** | **1** | **0.1** |
| **Total BTEX** | **30.1** | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | ***Trifluorotoluene*** | **97 %** |
| | **Bromofluorobenzene** | **97 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **Miller D - 1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8021
# AROMATIC VOLATILE ORGANICS
# QUALITY ASSURANCE REPORT

| | | | |
|---|---|---|---|
| Client: | N/A | Project #: | N/A |
| Sample ID: | 06-23-BTEX QA/QC | Date Reported: | 06-23-98 |
| Laboratory Number: | D450 | Date Sampled: | N/A |
| Sample Matrix: | Water | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 06-23-98 |
| Condition: | N/A | Analysis: | BTEX |

| Calibration and Detection Limits (ug/L) | I-Cal RF: | C-Cal RF: | %Diff. Accept. Range 0 - 15% | Blank Conc. | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 2.4176E-01 | 2.4200E-01 | 0.10% | ND | 1.8 |
| Toluene | 4.9646E-02 | 4.9795E-02 | 0.30% | ND | 1.7 |
| Ethylbenzene | 4.1020E-02 | 4.1350E-02 | 0.81% | ND | 1.5 |
| p,m-Xylene | 2.6433E-02 | 2.6620E-02 | 0.70% | ND | 2.2 |
| o-Xylene | 3.0648E-02 | 3.0833E-02 | 0.60% | ND | 1.0 |

| Duplicate Conc. (ug/L) | Sample | Duplicate | %Diff. | Accept Limit |
|---|---|---|---|---|
| Benzene | 765 | 745 | 2.7% | 0 - 30% |
| Toluene | 15.2 | 14.9 | 2.0% | 0 - 30% |
| Ethylbenzene | 240 | 236 | 1.8% | 0 - 30% |
| p,m-Xylene | 1,470 | 1,440 | 2.0% | 0 - 30% |
| o-Xylene | 91.5 | 89.7 | 2.0% | 0 - 30% |

| Spike Conc. (ug/L) | Sample | Amount Spiked | Spiked Sample | % Recovery | Accept Limits |
|---|---|---|---|---|---|
| Benzene | 765 | 50.0 | 779 | 95% | 39 - 150 |
| Toluene | 15.2 | 50.0 | 64.4 | 99% | 46 - 148 |
| Ethylbenzene | 240 | 50.0 | 277 | 96% | 32 - 160 |
| p,m-Xylene | 1,470 | 100.0 | 1,480 | 94% | 46 - 148 |
| o-Xylene | 91.5 | 50.0 | 137.3 | 97% | 46 - 148 |

ND - Parameter not detected at the stated detection limit.

References:
Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **QA/QC for samples D450- D451 and D462 - D463.**

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# CHAIN OF CUSTODY RECORD

6129

| Client / Project Name | Project Location | ANALYSIS / PARAMETERS |
|---|---|---|
| JN Exploration | Miller D-1 | |
| Sampler: Harlan M. Brown | Client No. 98056-01 | |

| Sample No./ Identification | Sample Date | Sample Time | Lab Number | Sample Matrix | No. of Containers | 8021 BTEX | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6' OFFSET SE | 6.19.98 | 9:30 | D450 | Water | 2 | ✓ | | | | | | |
| 5' OFFSET ESE | 6.19.98 | 10:45 | D451 | Water | 2 | ✓ | | | | | | |
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| | | | | | | | | | | | | |

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Harlan M Brown | 6-19-98 | 13:02 | [signature] | 6.19.98 | 13.02 |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |


ENVIROTECH INC.

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Farmington, New Mexico 87401
(505) 632-0615


| Sample Receipt | Y | N | N/A |
|---|---|---|---|
| Received Intact | ✓ | | |
| Cool - Ice/Blue Ice | ✓ | | |