

District I

P.O. Box 1980, Hobbs, NM

District

Drawer DD, Artesia, NM 88211

DEPUTY OIL & GAS INSPECTOR

1000 Rio Brazos Rd, Aztec, NM 87410

MAY 6 8 1995

State of New Mexico

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**PIT REMEDIATION AND CLOSURE REPORT**

Approved

C4126

Operator: Amoco Production Company Telephone: (505) - 326-9200

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Masden GC #1
Well NameLocation: Unit or Qtr/Qtr Sec NE/4 NE/4 (A) Sec 28 T 29N R 11W County SAN JUANPit Type: Separator ☒ Dehydrator ☐ Other ☐Land Type: BLM ☐ State ☐ Fee ☒ Other ☐Pit Location: Pit dimensions: length 65', width 100', depth 5'
(Attach diagram)Reference: wellhead ☒, other ☐Footage from reference: 110'Direction from reference: 60 Degrees ☐ East North ☒
☒ West South ☐**Depth To Ground Water:**(Vertical distance from
contaminants to seasonal
high water elevation of
ground water)Less than 50 feet (20 points)
50 feet to 99 feet (10 points)
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) 0
No (0 points)**Distance To Surface Water:**(Horizontal distance to perennial
lakes, ponds, rivers, streams, creeks,
irrigation canals and ditches)Less than 200 feet (20 points)
200 feet to 1000 feet (10 points) 10
Greater than 1000 feet (0 points)RANKING SCORE (TOTAL POINTS): 30

Date Remediation Started: _____ Date Completed: 2/14/94

Remediation Method: Excavation X Approx. cubic yards 740
(Check all appropriate sections) Landfarmed _____ Insitu Bioremediation _____

other Composted on Site

Remediation Location: Onsite X Offsite _____
(ie. landfarmed onsite, name and location of offsite facility)

General Description Of Remedial Action: _____

Pit Excavated & Soils Composted on Site

Ground Water Encountered: No _____ Yes X Depth _____

Final Pit: Sample location Refer to "Closure Verification" Sheet

Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths) Sample depth _____

Sample date _____ Sample time _____

Sample Results

Benzene (ppm) _____

Total BTEX (ppm) _____

Field headspace (ppm) _____

TPH _____

Ground Water Sample: Yes X No _____ (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 4/22/94

SIGNATURE B. Shaw PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

COCR 3356

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

4126

FIELD REPORT: CLOSURE VERIFICATION

JOB No: 92140
PAGE No: 1 of 1

LOCATION: LEASE: MILDEN GC WELL: #1 QD: NE/4 NE/4 /A
SEC: 28 TWP: 29N RNG: 11W BM: NM CNTY: S.W. TOWN ST: NM PIT: SEP
CONTRACTOR: _____
EQUIPMENT USED: TRUCK/HOE

DATE STARTED: 2/8/94
DATE FINISHED: 2/5/94

ENVIRONMENTAL SPECIALIST: NL

SOIL REMEDIATION: QUANTITY: 25' x 20' x 7'
DISPOSAL FACILITY: UNKNOWN
LAND USE: RESIDENTIAL - SEWAGE PLANT YARD
SURFACE CONDITIONS: UNKNOWN (SEE SITE ASSESSMENT FIELD REPORT 94/26)

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 33 YARDS N25W FROM WELLHEAD.
DEPTH TO GROUNDWATER: 6
NEAREST WATER SOURCE: <100'
NEAREST SURFACE WATER: 300'

FACE WATER: 300'

GW HIGHLY CONTAMINATED (THICK SHEEN ON SURFACE) W/ A STRONG HC
ODOR. BLACK SOIL & GRAVEL @ GW SURFACE INTERVAL LATERALLY IN ALL DIRECTIONS.
COLLECTED GW SAMPLE FOR PTEC (10:40 AM)
ADVISED TO PUMP WATER FROM
COLLECTED FECAL COLIFORM SAMPLE 2/9/74.

FIELD 418.1 CALCULATIONS

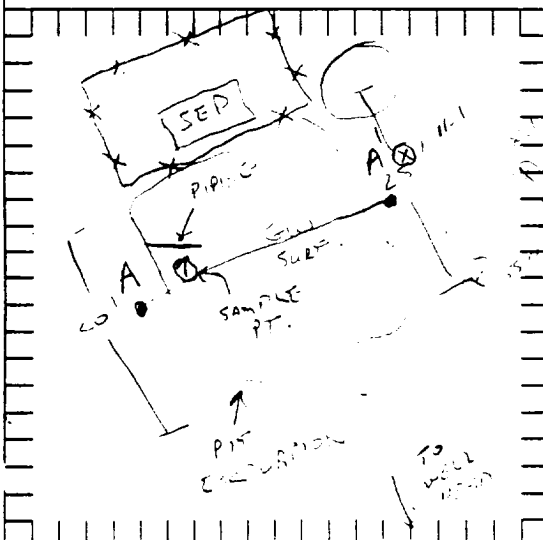
SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SCALE



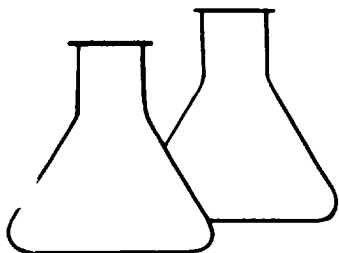
0 FEET

PIT PERIMETER



OVM RESULTS

[illegible]



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	1 @ GW (6')	Date Reported:	02-11-94
Laboratory Number:	6821	Date Sampled:	02-08-94
Sample Matrix:	Water	Date Received:	02-09-94
Preservative:	HgCl & Cool	Date Analyzed:	02-10-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	131	1.0
Toluene	444	2.0
Ethylbenzene	4.5	1.0
p,m-Xylene	320	1.0
o-Xylene	960	1.0

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	103 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Masden GC #1 Separator Pit C4126

Dennis L. Clemen
Analyst

Marion D. Young
Review

WATER ANALYSIS

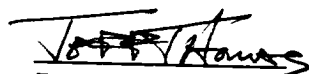
Client: ENVIROTECH
Project: Masden GC #1 Sep Pit
Sample ID: Pit Water @ 6'
Laboratory ID: 4731
Sample Matrix: Water
Condition: Cool/Intact

Date Reported: 02/14/94
Date Sampled: 02/09/94
Date Received: 02/09/94
Date Analyzed: 02/09/94

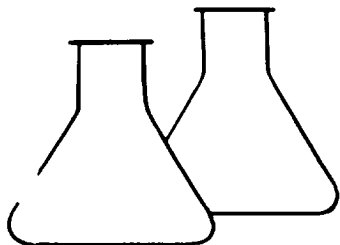
Parameter	Analytical Result	Units
Fecal Coliform Bacteria	0	Colonies/100 mls

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 17th ed., 1989.

Comments: Contained two unidentified bacteria colonies.


Reported By:


Reviewed By:



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EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	02-11-94
Laboratory Number:	0210am.blk	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	02-10-94
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.4
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.2
o-Xylene	ND	0.2

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	94 %
	Bromofluorobenzene	98 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

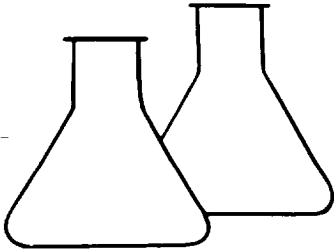
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Denise L. Jensen
Analyst

Marion D. Young
Review



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** QUALITY ASSURANCE EPA METHOD 8020
MATRIX SPIKE - AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Sample Spike	Date Reported:	02-11-94
Laboratory Number:	6821-S-BTEX	Date Sampled:	02-08-94
Sample Matrix:	Water	Date Received:	02-09-94
Analysis Requested:	BTEX	Date Analyzed:	02-10-94
Condition:	NA		

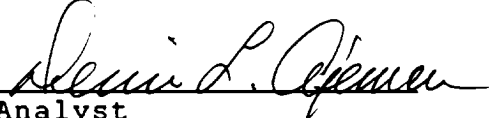
Parameter	Sample Result (ug/L)	Spike Added (ug/L)	Spiked Sample Result (ug/L)	Det. Limit (ug/L)	Percent Recovery	SW-846 % Rec. Accept. Range
Benzene	131	20.0	148	1.0	98	39-150
Toluene	444	20.0	463	2.0	100	46-148
Ethylbenzene	4.5	20.0	24.8	1.0	101	32-160
p,m-Xylene	320	20.0	327	1.0	96	46-148
o-Xylene	964	20.0	981	1.0	100	46-148

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating
Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:


Analyst


Review

Lab Results to Mr Helweg on 3/2/94 by Rmy - No recommendations

ENVIROTECH Inc

5796 US HWY 64, FARMINGTON, NM 87401
(505) 632-0615

C4126

FIELD REPORT: CLOSURE VERIFICATION

JOB NO. 92140
PAGE NO. 61

LOCATION: LEASE MASON CO WELL #1 QD NE 1/4 NE 1/4 (P)
SEC. 28 TWP. 29N RNG. 11W BM. 1/4 1/4 CNTY. SJ ST NM PIT. SEP
CONTRACTOR: KLEINER
EQUIPMENT USED: TRAILER

DATE STARTED 2/10/88
DATE FINISHED 2/14/88

ENVIRONMENTAL
SPECIALIST: W. King

SOIL REMEDIATION: QUANTITY: 600 to 1000 tons (5-6' deep)
DISPOSAL FACILITY: Per Site 7

LAND USE: Wounded Severe Neglect Adult Youth

SURFACE CONDITIONS: Excavated upon Arrival

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 37 YARDS N 60° W FROM WELLHEAD.

DEPTH TO GROUNDWATER: 5' ⁷/₁₀₀₀'
NEAREST WATER SOURCE: :

NEAREST SURFACE WATER: 600-900' S. - S. - R. -

Sample # 1, 2, B
taken on 2/10/44.

Plot NE corner of ... Site Visit on 2/14/94

TRACE OF FREE PROTON ON GROUND ETC

MR. VERMILION WILL (2050) RPT. RPT. 01. 5/20/10 0110.

2. Sample "P. + Water" taken on 1/31/47
" " " " taken on 2/24/47.

FIELD 418.1 CALCULATIONS

SAMPLE ID	LAB No:	WEIGHT (g)	mL FREON	DILUTION	PEAKING	1-LO	ppm

No. 2. - *Reverend*
Rm.

No observed Seta
Concentration above
1.112 g/L Seta

SCALE



0

FEET

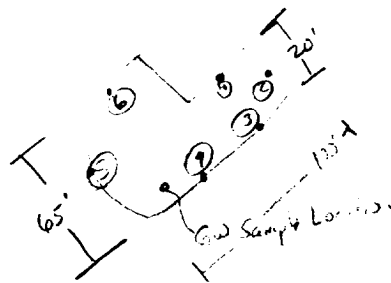
PIT PERIMETER

OVM RESULTS

[illegible]

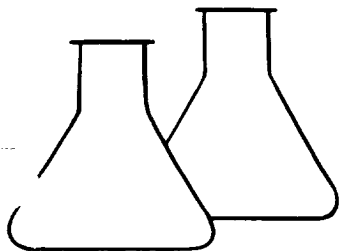
PIT PROFILE

Refer to 2/8/94 Assessment.



③, No. 1 in East C. 100. - 100 - 100 - 100
taken on 2/10/94.

TRAVEL NOTES C-LEADS: _____ ON SITE: _____



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EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	East End @ 6' bgs	Date Reported:	02-11-94
Laboratory Number:	6845	Date Sampled:	02-10-94
Sample Matrix:	Soil	Date Received:	02-11-94
Preservative:	Cool	Date Extracted:	02-11-94
Condition:	Cool & Intact	Date Analyzed:	02-11-94
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	12.8
Toluene	48.6	25.7
Ethylbenzene	73	19.3
p,m-Xylene	144	51
o-Xylene	ND	25.7

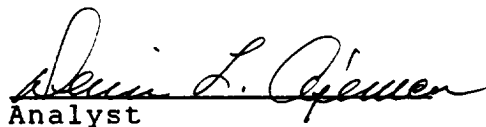
SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	98 %

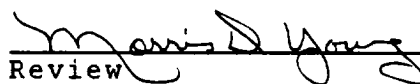
Method: Method 5030, Purge-and-Trap, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, July 1992

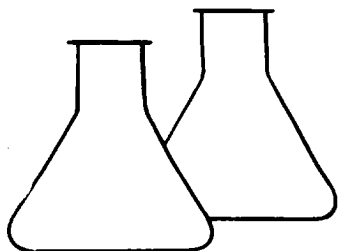
Method 8020, Aromatic Volatile Organics, Test Methods
for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Masden GC #1 Separator Pit C4126


Analyst


Review



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	E end @ 6' bgs	Date Sampled:	02-10-94
Laboratory Number:	6845	Date Received:	02-11-94
Sample Matrix:	Soil	Date Analyzed:	02-15-94
Preservative:	Cool	Date Reported:	02-15-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter -----	Concentration (mg/kg) -----	Det. Limit (mg/kg) -----
Total Petroleum Hydrocarbons	217	10.0

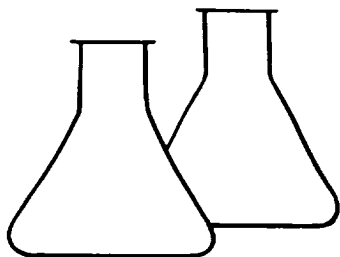
ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: Masden GC #1 Sep Pit C4126

Tony Tristano
Analyst

Maris D Young
Review



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EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	Pit Water	Date Reported:	02-16-94
Laboratory Number:	6862	Date Sampled:	02-14-94
Sample Matrix:	Water	Date Received:	02-15-94
Preservative:	HgCl and Cool	Date Analyzed:	02-15-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	13.8	0.2
Toluene	115	0.4
Ethylbenzene	182	0.2
p,m-Xylene	560	0.5
o-Xylene	910	0.5

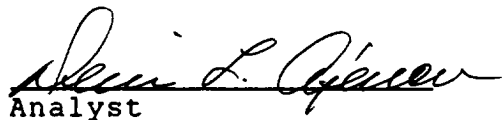
SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	98 %

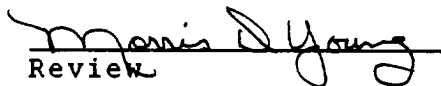
Method: Method 5030A, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

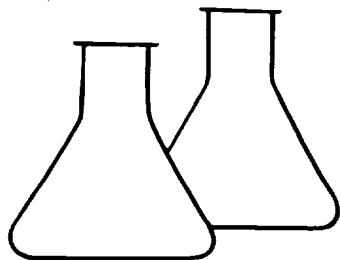
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Masden #1 Separator Pit C4126


Analyst


Review



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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	#4 @ 5' bgs	Date Reported:	02-16-94
Laboratory Number:	6863	Date Sampled:	02-14-94
Sample Matrix:	Soil	Date Received:	02-15-94
Preservative:	Cool	Date Extracted:	02-15-94
Condition:	Cool & Intact	Date Analyzed:	02-15-94
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	13.3
Toluene	72	26.5
Ethylbenzene	ND	13.3
p,m-Xylene	43.9	33.1
o-Xylene	ND	33.1

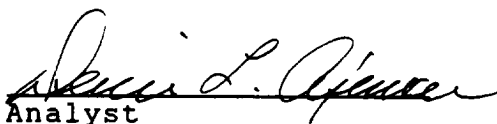
SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	99 %
	Bromofluorobenzene	96 %

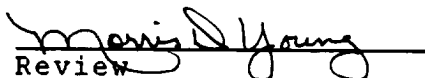
Method: Method 5030, Purge-and-Trap, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, July 1992

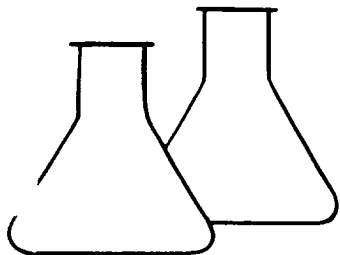
Method 8020, Aromatic Volatile Organics, Test Methods
for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Masden #1 Separator Pit C4126


Analyst


Review



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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	#4 @ 5' bgs	Date Sampled:	02-14-94
Laboratory Number:	6863	Date Received:	02-15-94
Sample Matrix:	Soil	Date Analyzed:	02-15-94
Preservative:	Cool	Date Reported:	02-15-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter -----	Concentration (mg/kg) -----	Det. Limit (mg/kg) -----
Total Petroleum Hydrocarbons	19.5	10.0

ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total
Recoverable, Chemical Analysis of Water and
Waste, USEPA Storet No.4551, 1978

Comments: Masden GC #1 Sep Pit C4126

Tony Tristano
Analyst

Morris D. Young
Review

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

FIT NO: C4/26

C.O.C. NO: .

FIELD REPORT: CLOSURE VERIFICATION

JOB No. 92140
PAGE No. 1 of 1

LOCATION: LEASE MARDEN GC WELL #1 QD NE/4 NE/4 (A) DATE STARTED: 4-12-99
SEC: 28 TWP: 29N RNG: 11W BM: NM CNTY: SJ ST: NM PIT: SEP DATE FINISHED: 4-12-99
CONTRACTOR: PAUL VELASQUEZ
EQUIPMENT USED: ENVIRONMENTAL

ENVIRONMENTAL SPECIALIST: *LE*

SOIL REMEDIATION: QUANTITY: PILE PERIMETER $\approx$ 85' x 110' x 10' HIGH

DISPOSAL FACILITY: ON SITE COMPOST PILES

LAND USE: CITY OF BLOOMFIELD MUNICIPAL OPERATIONS

SURFACE CONDITIONS: COMPOST PILES

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY _____ FEET _____ FROM WELLHEAD.
AREA PREVIOUSLY EXCAVATED - MATERIAL COMPOSTED ON SITE.
SAMPLE COMPOST PILES TO CHECK PROGRESS OF BIOREMEDIATION
PREPARED 4 COMPOSITES - (5 SAMPLES/COMPOSITE)

FIELD 418.1 CALCULATIONS

SAMPLE I.D.	LAB No.	WEIGHT (g)	mL. FREQN	DILUTION	READING	CALC. CORR.
S. Comp.	422	10.00	20.00	—	26	52
W. comp	423	10.00	20.00	—	172	344
C. COMP	424	10.00	20.00	—	41	82
E COMP SCALE	425	10.00	20.00	—	73	146

DEPTH TO GROUNDWATER: $< 20'$

NEAREST WATER SOURCE

HEATED SURFACE WATER

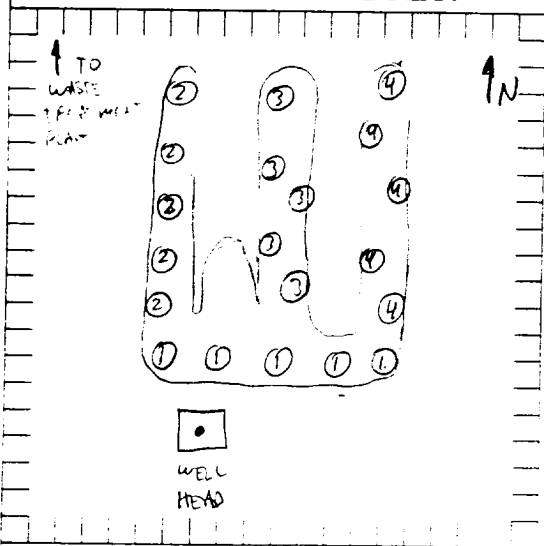
WILLIAM H. HARRIS 720

AMINE TEL. 110175 175 100 ppm 70N

— 100 —

0 20 40 FEET

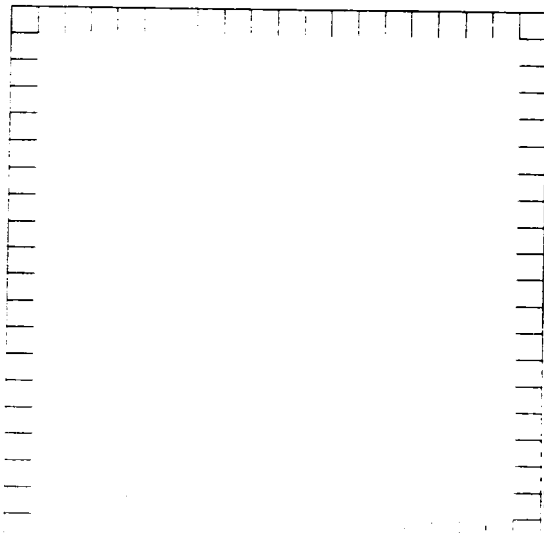
PIT PERIMETER



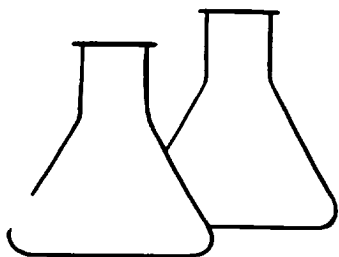
OVM RESULTS

[illegible]

PIT PROFILE



TRAVEL NOTES. DATE: 4-10-94 CNOTE: 4-12-94 2912



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	S. COMP	Date Analyzed:	4-12-94
Project Location:	Masden GC #1	Date Reported:	4-12-94
Laboratory Number:	GAC0422	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
-----	-----	-----
Total Recoverable Petroleum Hydrocarbons	52	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	-----	-----	-----
	510	490	4

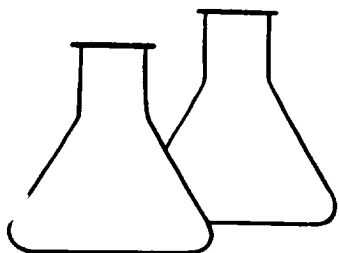
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: Separator Pit C4126 South Compost Pile

R. E. O'Neil
Analyst

Morris D. Young
Review



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	W. COMP	Date Analyzed:	4-12-94
Project Location:	Masden GC #1	Date Reported:	4-12-94
Laboratory Number:	GAC0423	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
-----	-----	-----
Total Recoverable Petroleum Hydrocarbons	340	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	-----	-----	-----
	510	490	4

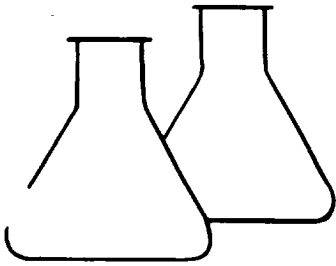
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: Separator Pit C4126 West Compost Pile

R. E. Snell
Analyst

Maris D. Young
Review



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	C. COMP	Date Analyzed:	4-12-94
Project Location:	Masden GC #1	Date Reported:	4-12-94
Laboratory Number:	GAC0424	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
-----	-----	-----
Total Recoverable Petroleum Hydrocarbons	82	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	-----	-----	-----
	510	490	4

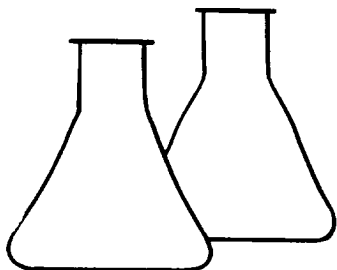
*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: Separator Pit C4126 Center Compost Pile

R. E. O'Neil
Analyst

Morris D. Young
Review



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

FIELD MODIFIED EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	E. COMP	Date Analyzed:	4-12-94
Project Location:	Masden GC #1	Date Reported:	4-12-94
Laboratory Number:	GAC0425	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
-----	-----	-----
Total Recoverable Petroleum Hydrocarbons	150	10

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	-----	-----	-----
	510	490	4

*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: Separator Pit C4126 East Compost Pile

R. E. O'Neil
Analyst

Mari D. Young
Review

AMOCO GROUNDWATER MONITOR WELL LABORATORY RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

MASDEN GC # 1 - SEPARATOR PIT UNIT A, SEC. 28, T29N, R11W
--

REVISED DATE: JANUARY 13, 1997

FILENAME: (MA-2Q-96.WK3) NJV

SAMPLE DATE	MONITOR WELL No:	D.T.W. (ft)	T.D. (ft)	TDS mg/L	COND. umhos	pH	PRODUCT (in)	BTEX EPA METHOD 8020 (PPB)			
								Benzene	Toluene	Ethyl Benzene	Total Xylene
05-Jun-96	MW #1	9.38	10.32	3490	2800	7.1		ND	ND	ND	ND
05-Jun-96	MW #2	7.39	10.24	4070	2800	6.9		ND	ND	ND	ND
05-Jun-96	MW #3	8.11	10.35	6320	4300	7.2		ND	24	7	7

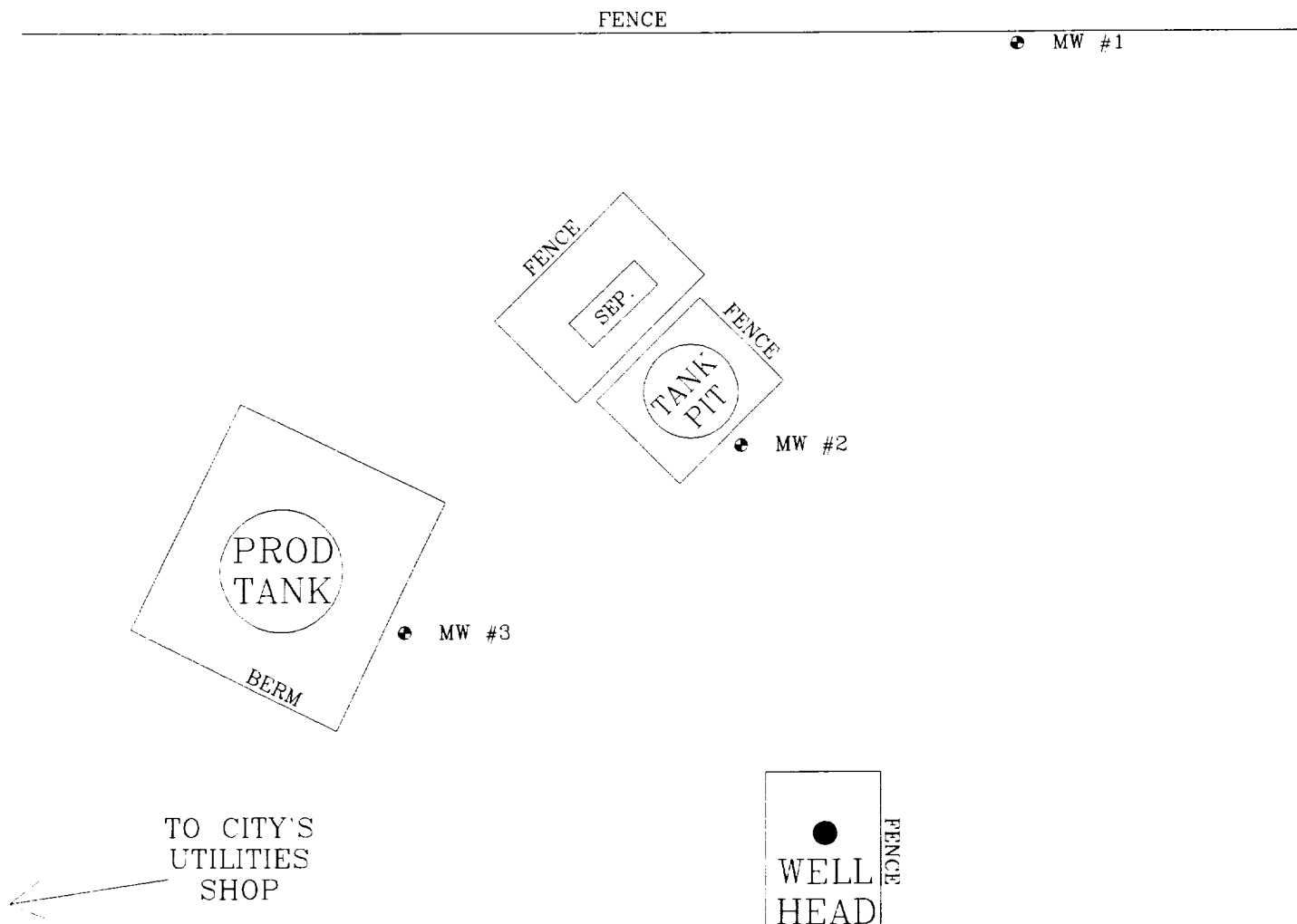
GENERAL WATER QUALITY
AMOCO PRODUCTION COMPANY
MASDEN GC # 1
SAMPLE DATE : JUNE 10, 1996

PARAMETERS		MW # 1	MW # 2	MW # 3	Units
GENERAL	LAB pH	7.6	7.2	7.4	s. u.
	LAB CONDUCTIVITY (25 DEG. CELCIUS)	4,090	4,760	6,610	umhos cm
	TOTAL DISSOLVED SOLIDS (180 DEG. CELCIUS)	3,490	4,070	6,320	mg / L
	TOTAL DISSOLVED SOLIDS (CALCULATED)	3,230	3,960	6,000	mg / L
ANIONS	TOTAL ALKALINITY AS CaCO3	287	430	692	mg / L
	BICARBONATE ALKALINITY (AS CaCO3)	287	430	692	mg / L
	CARBONATE ALKALINITY (AS CaCO3)	NA	NA	NA	mg / L
	HYDROXIDE ALKALINITY (AS CaCO3)	NA	NA	NA	mg / L
	CHLORIDE	47.5	35.0	65.0	mg / L
	SULFATE	2,060	2,490	3,750	mg / L
	NITRATE + NITRITE - N	NA	NA	NA	
	NITRATE - N	NA	NA	NA	
	NITRITE - N	NA	NA	NA	
CATIONS	TOTAL HARDNESS AS CaCO3	1,570	1,630	1,920	mg / L
	CALCIUM	619	536	498	mg / L
	MAGNESIUM	4.91	70.0	166	mg / L
	POTASSIUM	5.00	5.00	5.00	mg / L
	SODIUM	320	570	1,100	mg / L
DATA VALIDATION					ACCEPTANCE LEVEL
	CATION/ANION DIFFERENCE	4.87	3.38	4.06	+/- 5 %
	TDS (180):TDS (CALCULATED)	1.1	1.0	1.1	1.0 - 1.2

FIGURE 1



CITY OF BLOOMFIELD SEWER TREATMENT FACILITY



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE
AS THE INSTRUMENTS USED IN OBTAINING THE
FOOTAGE AND BEARING FROM THE WELL HEAD
(BRUNTON COMPASS AND LASER RANGE FINDER).
ALL OTHER STRUCTURES DISPLAYED ON THE SITE
MAP ARE SOLELY FOR REFERENCE AND ARE NOT TO
SCALE

0 50 100 FT.

AMOCO PRODUCTION COMPANY

MASDEN GC 1

NE 4 NE/4 SEC. 28. T29N. R11W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE (505) 632-1199

PROJECT MW INSTALL.

DRAWN BY NJV

FILENAME MASDEN

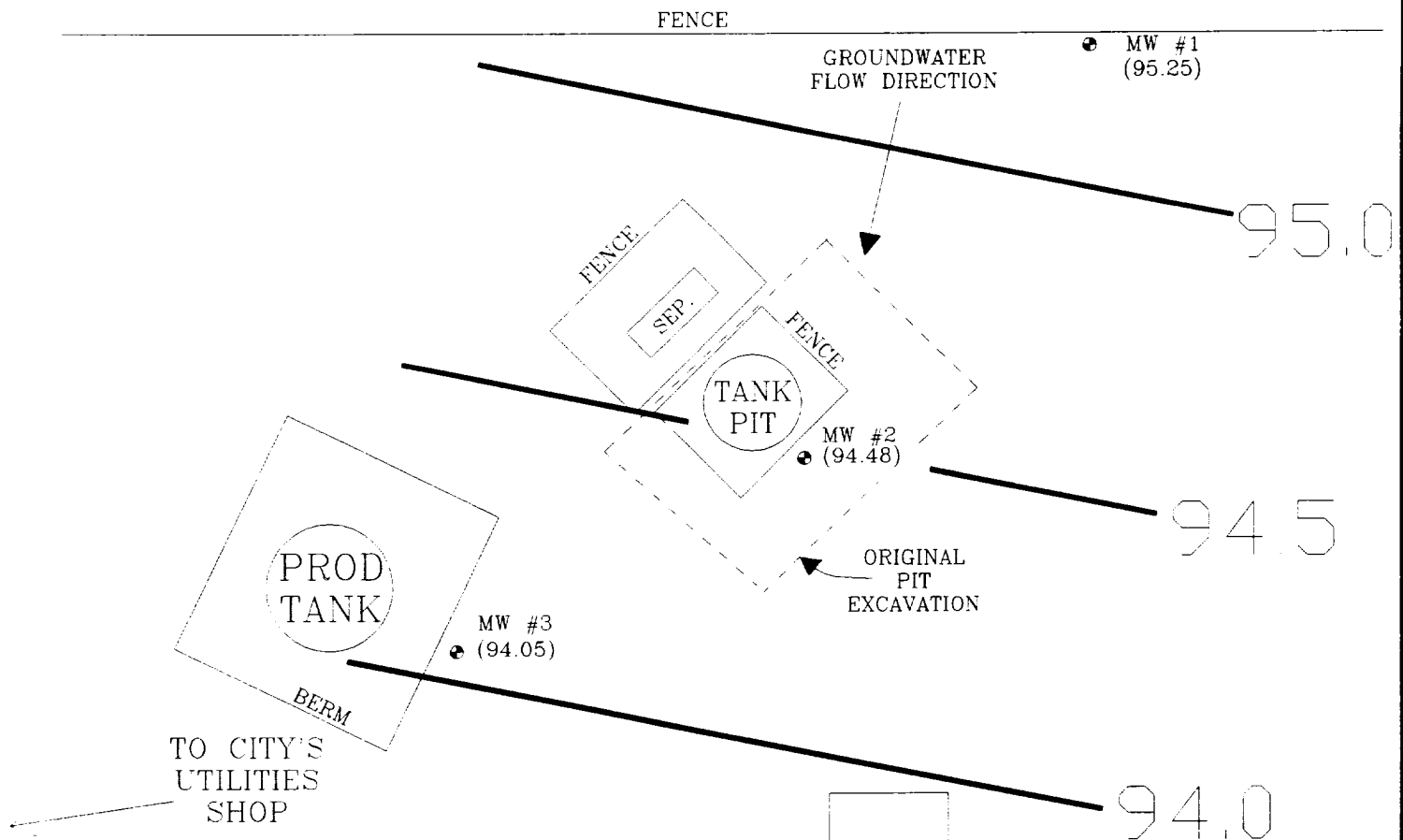
SITE
MAP

6/96



FIGURE 2 (2nd 1/4, 1996)

CITY OF BLOOMFIELD SEWER TREATMENT FACILITY



Top of Well Elevation	
MW #1	(104.63)
MW #2	(101.87)
MW #3	(102.16)
Groundwater Elevation as of 6/5/96.	
MW #1	(95.25)

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND ARE NOT TO SCALE

0 50 100 FT.

AMOCO PRODUCTION COMPANY

MASDEN GC 1

NE 4 NE 4 SEC. 28, T29N R11W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE (505) 632-1199

PROJECT 1/4, V. MONITOR

DRAWN BY NJV

FILENAME MASDEN

REVISED 2/10/97 NJV

GROUNDWATER
GRADIENT
MAP

6/96

BLAGG ENGINEERING, Inc.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

BORE / TEST HOLE REPORT

LOCATION NAME: MASDEN GC # 1
CLIENT: AMOCO PRODUCTION COMPANY
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: N14E, 235 FEET FROM WELL HEAD.

BORING #..... BH - 1
MW #..... 1
PAGE #..... 1
DATE STARTED 4/23/96
DATE FINISHED 4/23/96
OPERATOR..... JCB
PREPARED BY NJV

DEPTH
FEET

LITHOLOG-
INTERVAL

MW
SCHEMATIC

FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 3.50 FT ABOVE GROUND SURFACE.

TOS 1.5

DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST.
FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 5.25 FT. INTERVAL).

TD 6.5

▼ GW DEPTH ON 6/5/96 = 5.88 FT. (APPROX.) FROM GROUND SURFACE.

DARK YELLOWISH BROWN SAND & GRAVEL, NON COHESIVE, SATURATED, FIRM TO LOOSE.
NO APPARENT HYDROCARBON ODOR OBSERVED (5.25 - 6.5 FT. INTERVAL).

NOTES:  - SAND

 - SAND & GRAVEL (VARYING SIZES).

TOS - TOP OF SCREEN FROM GROUND SURFACE.

TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.

GW - GROUND WATER.

BLAGG ENGINEERING, Inc.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

BORE / TEST HOLE REPORT

LOCATION NAME: MASDEN GC # 1
CLIENT: AMOCO PRODUCTION COMPANY
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: N12W, 115 FEET FROM WELL HEAD.

BORING #..... BH - 2
MW #..... 2
PAGE #..... 2
DATE STARTED 4/23/96
DATE FINISHED 4/23/96
OPERATOR..... JCB
PREPARED BY NJV

DEPTH
FEET

2 1/4

LITHOLOGY
INTERVAL

MW
SCHEMATIC

FIELD CLASSIFICATION AND REMARKS

TOP OF CASING APPROX. 2.65 FT. ABOVE GROUND SURFACE.

TOS 2.35

DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST.
FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 5.25 FT. INTERVAL).

▼ GW DEPTH ON 6/5/96 = 4.74 FT. (APPROX) FROM GROUND SURFACE.

DARK YELLOWISH BROWN SAND & GRAVEL, NON COHESIVE, SATURATED, FIRM TO LOOSE.
NO APPARENT HYDROCARBON ODOR OBSERVED (5.25 - 7.35 FT. INTERVAL).

TD 7.35

NOTES:



- SAND.



- SAND & GRAVEL (VARYING SIZES).

TOS - TOP OF SCREEN FROM GROUND SURFACE.

TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.

GW - GROUND WATER

BLAGG ENGINEERING, Inc.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

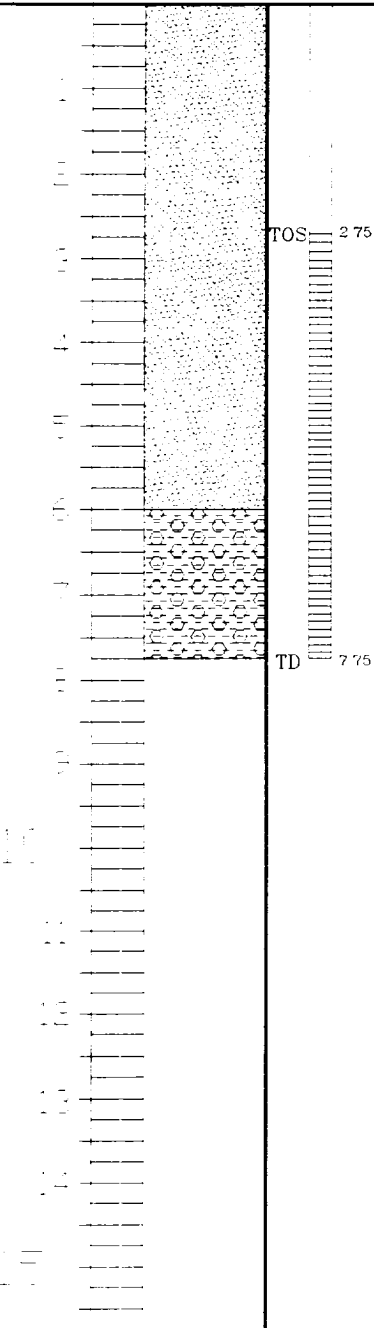
BORE / TEST HOLE REPORT

LOCATION NAME: MASDEN GC # 1
CLIENT: AMOCO PRODUCTION COMPANY
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: N64W, 135 FEET FROM WELL HEAD.

BORING #..... BH - 3
MW #..... 3
PAGE #..... 3
DATE STARTED 4/23/96
DATE FINISHED 4/23/96
OPERATOR..... JCB
PREPARED BY NJV

DEPTH FEET

FIELD CLASSIFICATION AND REMARKS



GROUND SURFACE
TOP OF CASING APPROX. 2.25 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST.
FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 6.0 FT. INTERVAL).

▼ GW DEPTH ON 6/5/96 = 5.86 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT TO DARK GRAY SAND & GRAVEL, NON COHESIVE, SATURATED, FIRM TO LOOSE.
NO APPARENT HYDROCARBON ODOR OBSERVED (6.0 - 7.75 FT. INTERVAL).

NOTES:

-  - SAND.
-  - SAND & GRAVEL (VARYING SIZES) DISCOLORED.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

MONITOR WELL #1

AMOCO PRODUCTION COMPANY

MASDEN GC # 1

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE (505) 632-1199

MONITOR WELL SCHEMATIC

DRAFTED BY: NJV

DATE: MAR. 97

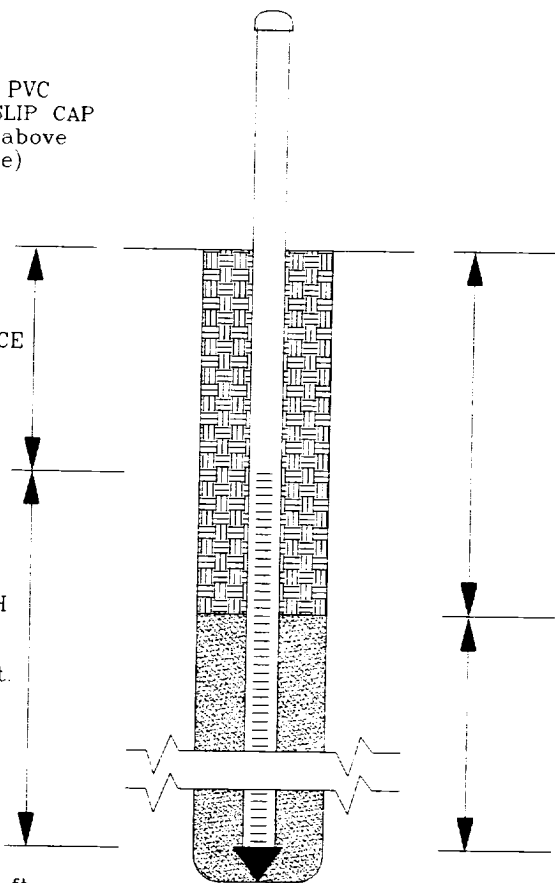
FILENAME: MW

2" DIA. SCH. 40 PVC
WELL CASING WITH SLIP CAP
(approx. 3.50 ft. above
ground surface)

TOTAL CASING
LENGTH = 1.5 ft.
FROM GROUND SURFACE
TO TOP OF SCREEN

0.02 INCH SLOTTED
SCREEN SCH 40 WITH
POINTED ENC CAP
(5 ft. total length;
top of screen 4.38 ft.
above groundwater)

TOTAL DEPTH = 6.5 ft.
FROM GROUND SURFACE



BACK FILLED WITH
CLEAN NATIVE SOIL
TO SURFACE

0.62 ft. SCREEN INTERVAL
SET INTO EXISTING SOIL &
GROUNDWATER CONDITIONS

WATER TABLE
APPROX. 5.88 ft. FROM
GROUND SURFACE
(measured 6/5/96)

MONITOR WELL #2

AMOCO PRODUCTION COMPANY

MASDEN GC # 1

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

MONITOR WELL SCHEMATIC

DRAFTED BY: NJV

DATE: MAR. '97

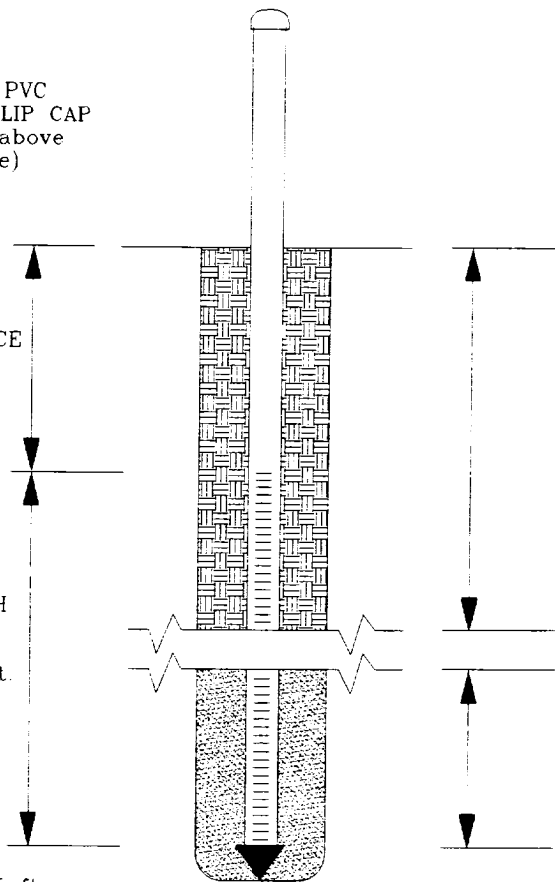
FILENAME: MW-

2" DIA. SCH. 40 PVC
WELL CASING WITH SLIP CAP
(approx. 2.65 ft. above
ground surface)

TOTAL CASING
LENGTH = 2.35 ft.
FROM GROUND SURFACE
TO TOP OF SCREEN

0.02 INCH SLOTTED
SCREEN SCH 40 WITH
POINTED ENC CAP
(5 ft. total length,
top of screen 2.39 ft.
above groundwater)

TOTAL DEPTH = 7.35 ft.
FROM GROUND SURFACE



BACK FILLED WITH
CLEAN NATIVE SOIL
TO SURFACE

WATER TABLE
APPROX. 4.74 ft. FROM
GROUND SURFACE
(measured 6/5/96)

2.61 ft. SCREEN INTERVAL
SET INTO EXISTING SOIL &
GROUNDWATER CONDITIONS

MONITOR WELL #3

AMOCO PRODUCTION COMPANY

MASDEN GC # 1

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632 1199

MONITOR WELL SCHEMATIC

DRAFTED BY: NJV

DATE: MAR. '97

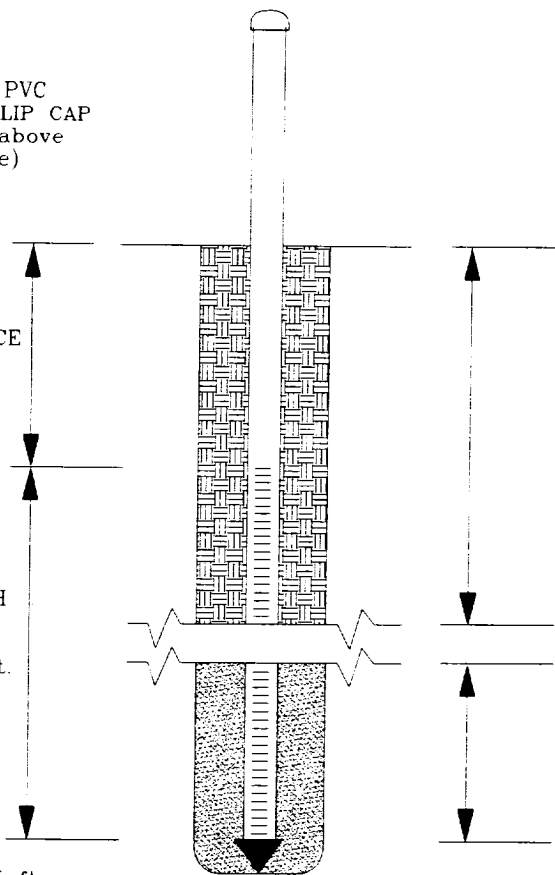
FILENAME: MW

2" DIA. SCH 40 PVC
WELL CASING WITH SLIP CAP
(approx. 2.25 ft. above
ground surface)

TOTAL CASING
LENGTH = 2.75 ft.
FROM GROUND SURFACE
TO TOP OF SCREEN

0.02 INCH SLOTTED
SCREEN SCH 40 WITH
POINTED ENC CAP
(5 ft. total length;
top of screen 3.11 ft.
above groundwater)

TOTAL DEPTH = 7.75 ft.
FROM GROUND SURFACE



BACK FILLED WITH
CLEAN NATIVE SOIL
TO SURFACE

WATER TABLE
APPROX. 5.86 ft. FROM
GROUND SURFACE
(measured 6/5/96)

1.89 ft. SCREEN INTERVAL
SET INTO EXISTING SOIL &
GROUNDWATER CONDITIONS



PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID: Masden GC 1
Sample ID: MW - 1
Lab ID: 3794
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 06/20/96
Date Sampled: 06/05/96
Date Received: 06/05/96
Date Analyzed: 06/19/96

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50

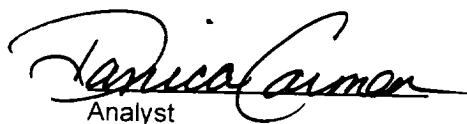
Total BTEX	ND
------------	----

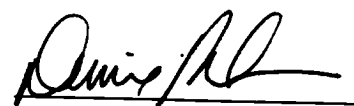
ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	97	88 - 110%
	Bromofluorobenzene	95	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:


Analyst


Review



PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID: Masden GC 1
Sample ID: MW - 2
Lab ID: 3795
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 06/20/96
Date Sampled: 06/05/96
Date Received: 06/05/96
Date Analyzed: 06/19/96

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50

Total BTEX	ND
------------	----

ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	93	88 - 110%
	Bromofluorobenzene	96	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:


Analyst


Review



PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID: Masden GC 1
Sample ID: MW - 3
Lab ID: 3796
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 06/20/96
Date Sampled: 06/05/96
Date Received: 06/05/96
Date Analyzed: 06/19/96

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	23.6	0.50
Ethylbenzene	6.94	0.50
m,p-Xylenes	3.14	1.00
o-Xylene	3.48	0.50

Total BTEX	37.1
------------	------

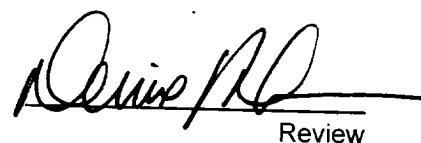
ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	103	88 - 110%
	Bromofluorobenzene	130	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments: High bromofluorobenzene recovery is due to hydrocarbon interference at the BFB retention times.


Analyst


Review



General Water Quality
Blagg Engineering, Inc.

Project ID: Masden GC 1
Sample ID: MW - 1
Laboratory ID: 3876
Sample Matrix: Water

Date Reported: 07/02/96
Date Sampled: 06/10/96
Time Sampled: 8:05
Date Received: 06/10/96

Parameter		Analytical Result	Units
General	Lab pH.....	7.6	s.u.
	Lab Conductivity @ 25° C.....	4,090	µmhos/cm
	Total Dissolved Solids @ 180°C.....	3,490	mg/L
	Total Dissolved Solids (Calc).....	3,230	mg/L
Anions	Total Alkalinity as CaCO ₃	287	mg/L
	Bicarbonate Alkalinity as CaCO ₃	287	mg/L
	Carbonate Alkalinity as CaCO ₃	NA	mg/L
	Hydroxide Alkalinity as CaCO ₃	NA	mg/L
	Chloride.....	47.5	mg/L
	Sulfate.....	2,060	mg/L
	Nitrate + Nitrite - N.....	NA	
	Nitrate - N.....	NA	
Cations	Nitrite - N.....	NA	
	Total Hardness as CaCO ₃	1,570	mg/L
	Calcium.....	619	mg/L
	Magnesium.....	4.91	mg/L
	Potassium.....	5.00	mg/L
	Sodium.....	320	mg/L

Data Validation

		Acceptance Level
Cation/Anion Difference.....	4.87	+/- 5 %
TDS (180):TDS (calculated).....	1.1	1.0 - 1.2

Reference

U.S.E.P.A. 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1983.
Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.


Review



General Water Quality
Blagg Engineering, Inc.

Project ID: Masden GC 1
Sample ID: MW - 2
Laboratory ID: 3877
Sample Matrix: Water

Date Reported: 07/02/96
Date Sampled: 06/10/96
Time Sampled: 8:15
Date Received: 06/10/96

Parameter		Analytical Result	Units
General	Lab pH.....	7.2	s.u.
	Lab Conductivity @ 25° C.....	4,760	µmhos/cm
	Total Dissolved Solids @ 180°C.....	4,070	mg/L
	Total Dissolved Solids (Calc).....	3,960	mg/L
Anions	Total Alkalinity as CaCO ₃	430	mg/L
	Bicarbonate Alkalinity as CaCO ₃	430	mg/L
	Carbonate Alkalinity as CaCO ₃	NA	mg/L
	Hydroxide Alkalinity as CaCO ₃	NA	mg/L
	Chloride.....	35.0	mg/L
	Sulfate.....	2,490	mg/L
	Nitrate + Nitrite - N.....	NA	
	Nitrate - N.....	NA	
Cations	Nitrite - N.....	NA	
	Total Hardness as CaCO ₃	1,630	mg/L
	Calcium.....	536	mg/L
	Magnesium.....	70.0	mg/L
	Potassium.....	5.00	mg/L
	Sodium.....	570	mg/L

Data Validation

		Acceptance Level
Cation/Anion Difference.....	3.38	+/- 5 %
TDS (180):TDS (calculated).....	1.0	1.0 - 1.2

Reference

U.S.E.P.A. 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1983.
Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.

Review



General Water Quality
Blagg Engineering, Inc.

Project ID: Masden GC 1
Sample ID: MW - 3
Laboratory ID: 3878
Sample Matrix: Water

Date Reported: 07/02/96
Date Sampled: 06/10/96
Time Sampled: 8:20
Date Received: 06/10/96

Parameter		Analytical Result	Units
General	Lab pH.....	7.4	s.u.
	Lab Conductivity @ 25° C.....	6,610	µmhos/cm
	Total Dissolved Solids @ 180°C.....	6,320	mg/L
	Total Dissolved Solids (Calc).....	6,000	mg/L
Anions	Total Alkalinity as CaCO ₃	692	mg/L
	Bicarbonate Alkalinity as CaCO ₃	692	mg/L
	Carbonate Alkalinity as CaCO ₃	NA	mg/L
	Hydroxide Alkalinity as CaCO ₃	NA	mg/L
	Chloride.....	65.0	mg/L
	Sulfate.....	3,750	mg/L
	Nitrate + Nitrite - N.....	NA	
	Nitrate - N.....	NA	
Cations	Nitrite - N.....	NA	
	Total Hardness as CaCO ₃	1,920	mg/L
	Calcium.....	498	mg/L
	Magnesium.....	166	mg/L
	Potassium.....	5.00	mg/L
	Sodium.....	1,100	mg/L

Data Validation

		Acceptance Level
Cation/Anion Difference.....	4.06	+/- 5 %
TDS (180):TDS (calculated).....	1.1	1.0 - 1.2

Reference

U.S.E.P.A. 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1983.
Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.


Review



June 20, 1996

Bob O'Neill
Blagg Engineering, Inc.
PO Box 87
Bloomfield, NM 87413

Dear Mr. O'Neill:

Enclosed are the results for the analysis of the samples received June 5, 1996. The samples were from the Masden GC 1 site. Analysis for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) was performed on the samples as per the accompanying chain of custody form.

Analysis was performed on the sample according to EPA Method 602, using a Hewlett-Packard 5890 gas chromatograph equipped with an OI Analytical purge and trap (model 4560) and a photoionization detector. Detectable levels of btex analytes were found in the samples, as reported.

Quality control reports appear at the end of the analytical package and can be identified by title. Should you have any questions regarding the analysis, feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Denise A. Bohemier". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Denise A. Bohemier
Lab Director



July 2, 1996

Bob O'Neill
Blagg Engineering, Inc.
PO Box 87
Bloomfield, NM 87413

Dear Mr. O'Neill:

Enclosed are the results for the analysis of the samples received June 10, 1996. The samples were from the Masden GC 1 site. Analyses for general water quality parameters were performed on the samples, as per the accompanying chain of custody form.

Water parameters were determined for the samples according to the appropriate methodologies as outlined in Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992.

Quality control reports appear at the end of the analytical package and can be identified by title. Should you have any questions regarding the analysis, feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Denise A. Bohemier". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Denise A. Bohemier
Lab Director

807 S. CARLTON • FARMINGTON, NM 87401 • (505) 326-2395

PROJECT MANAGER:

Anaitas Lab I.D.:

Company:

Address:

Phone:

Fax:

Bill To:

Company:

Address:

Sample ID	Date	Time	Matrix	Lab ID
MW-1	6-5	1000	water	
MW-2	"	1020	"	
MW-3	"	1035	"	
Project Information				Sample Receipt
Proj. #:	No. Containers:			
Proj. Name:	Custody Seals: Y / N / NA			
P.O. No:	Received intact:			
Shipped Via:	Received Cold:			

Required Turnaround Time (Prior Authorization Required for Rush)

MAISON 6C 1

CHAIN OF CUSTODY

[illegible]

**MASDEN GC # 1 - Separator Pit
Ne/4 Ne/4 Sec. 28, T29N, R11W**

<u>Site Assessment Date:</u>	May 11, 1992 (Documentation Included)
<u>Pit closure Date:</u>	February 8 - March 12, 1994 (Documentation Included)
<u>Monitor Well Installation Date:</u>	April 23, 1996
<u>Monitor Well Sampling Date:</u>	June 5, 1996

Groundwater Monitor Well Sampling Procedures:

Groundwater samples were collected from site monitor wells following USEPA: SW-846 protocol. The samples were collected using new disposable bailers and placed in new laboratory supplied 40 ml glass vials with teflon septa caps. Samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) per USEPA Method 8020. When applicable, additional groundwater was collected and placed in laboratory supplied 250 or 500 ml plastic containers and analyzed for general water quality per USEPA Method 600/4-79-020. The samples were preserved cool (BTEX samples also preserved with mercuric chloride) and hand delivered to a qualified laboratory for testing. Waste generated during monitor well sampling and development was disposed of utilizing the separator tank pit located on the well site.

Water Quality Information:

The BTEX results for all three (3) monitor wells during the June 5, 1996 sampling event were non detectable or below 25% of the New Mexico Water Quality Control Commission's (NMWQCC) allowable concentration for groundwater. The general water quality results revealed total dissolved solids (TDS) within the separator pit area (MW #2) and down gradient direction (MW #3) to be above the apparent background level (MW #1).

Summary and/or Recommendations:

Based on the enclosed documentation, the groundwater within the separator pit area appears to have been remediated during the closure activities between February and March, 1994. Although the TDS levels exceed the NMWQCC's allowable concentrations, it does not appear that the elevated TDS levels poses any threat to foreseeable domestic use (based on the well site location - see Figure 1).

All aspects of the Amoco groundwater plan dated October 22, 1996 (approved by NMOCD with letter dated February 7, 1997) has been adhered to. Therefore, Amoco is requesting permanent closure status for this pit.

121601

5798 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0815

94126

FIELD REPORT: SITE ASSESSMENT

JOB No: 92140
PAGE No: 1 of

PROJECT: PIT ASSESSMENTS & CLOSURE
CLIENT: AMOCO PRODUCTION COMPANY
CONTRACTOR: ENVIROTECH, INC.
EQUIPMENT USED: Bacillus w/ 24"

DATE STARTED: 5/11/92
DATE FINISHED: 5/11/92
ENVIRO. SPCLT: JRS
OPERATOR: DJJ
ASSISTANT: LT

LOCATION: LSE: Marden Gas WELL: 1 QD: NE/4 NE/4 (A)
SEC: 28 TWP: T29N RNG: R11W PM: NMPM CNTY: ST ST: NM PIT:

LAND USE: City of Bloomfield Municipal Operation Center yard, ^{same as} plat 12
SURFACE CONDITIONS: Fiberglass tank (12' x 6' h) buried on site

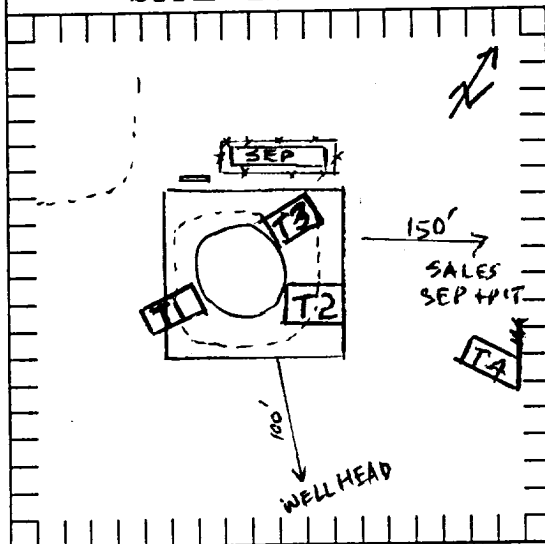
FIELD NOTES & REMARKS: Soils at this site are clean to 4' depth
 4'-7' depth soils are black with sewer (H₂S)
 Strong odor. Entire yard is littered w/ pipes,
 gravel piles, PVC pipes etc. TH4 dugged
 up some old trash pipes + other abandoned
 water manhole cover, TH4 has dark band
 of soil @ 4-5' depth w/ odor read of 49 ppm.
 Soil + Groundwater not contaminated at
 TH4 site.

SAMPLE INVENTORY:		
SMP#	SMP#	LABORATORY
ID:	TYPE:	ANALYSIS:
T1C7'	SOIL	HEAD
T1C7'	SOIL	TPH/418.1
T1C6W	WATER	B020
T2C5'	SOIL	B020
T3C6W	WATER	B020

[illegible]

0 10 20 FEET

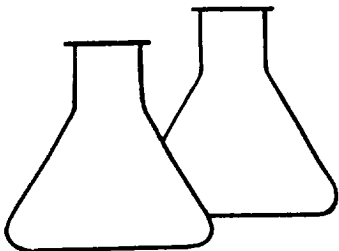
SITE DIAGRAM



TEST HOLE LOGS:

TH#: 1			TH#: 2			TH#: 3			TH#: 4		
SOIL TYPE:	SMPL TYPE:	OVM/TPH	SOIL TYPE:	SMPL TYPE:	OVM/TPH	SOIL TYPE:	SMPL TYPE:	OVM/TPH	SOIL TYPE:	SMPL TYPE:	OVM/TPH
SW											
		7			4			7			4
		894			934			44			49
		1117			1173			1165 1783			3
GW		1215	GW	GW	1783	GW	GW	980	GW	GW	2

SOIL TYPE: C - Clay, M - SIL, S - Sand, G - Gravel Plasticity: L - None, H - Plastic Grading: P - Pearly, W - Wet



ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client: AMOCO
Sample ID: T-1 @ 7'
Laboratory Number: 0603
Sample Matrix: Soil
Preservative: Cool
Condition: Cool & Intact

Project #: 92140
Date Reported: 06-15-92
Date Sampled: 05-11-92
Date Received: NA
Date Analyzed: 06-04-92
Analysis Needed: TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
-----	-----	-----
Total Petroleum Hydrocarbons	12.2	5.0

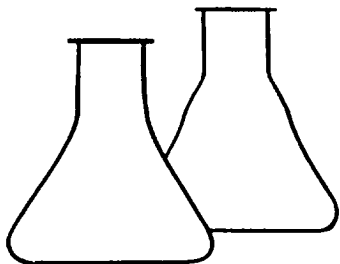
Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas 1 Separator Pit 94126

Tony Tristano
Analyst

Mike Linneman
Review



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	T 1 @ 7'	Date Reported:	09-23-92
Laboratory Number:	0603	Date Sampled:	05-11-92
Sample Matrix:	Soil	Date Received:	05-11-92
Preservative:	Cool	Date Extracted:	06-04-92
Condition:	Cool & Intact	Date Analyzed:	09-23-92
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	70
Toluene	820	70
Ethylbenzene	96	50
p,m-Xylene	370	110
o-Xylene	152	90

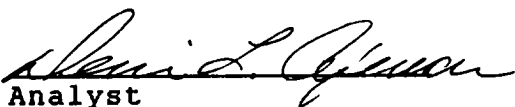
SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	79 %
	Bromfluorobenzene	92 %

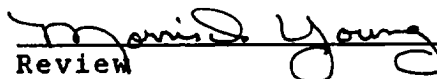
Method: Method 5030, Purge-and-Trap, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

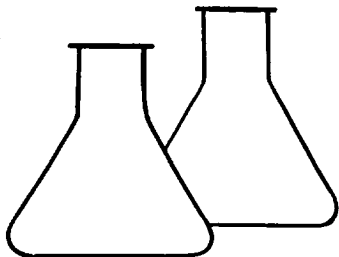
Method 8020, Aromatic Volatile Organics, Test Methods
for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Masden GC 1 Separator Pit 94126


Analyst


Review



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS HEADSPACE EXTRACTION

Client:	AMOCO	Project #:	92140
Sample ID:	T1 @ 7'	Date Reported:	08-31-92
Laboratory Number:	0598	Date Sampled:	05-11-92
Sample Matrix:	Soil	Date Received:	05-11-92
Preservative:	NA	Date Analyzed:	07-09-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
-----	-----	-----
Benzene	ND	1.6
Toluene	ND	1.6
Ethylbenzene	ND	1.6
p,m-Xylene	14.9	12.0
o-Xylene	168	1.6

Method: Method 3810, Headspace, Test Methods for Evaluating
Solid Waste, SW-846, USEPA, Sept. 1986

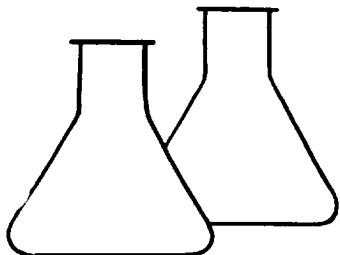
Method 8020, Aromatic Volatile Organics, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas Com 1---Separator Pit---94126

Al Chabauty
Analyst

Marianne Young
Review



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	T1 @ GW	Date Reported:	08-21-92
Laboratory Number:	0600	Date Sampled:	05-11-92
Sample Matrix:	Water	Date Received:	05-11-92
Preservative:	HgCl & Cool	Date Analyzed:	06-25-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	3,090	40.0
Toluene	670	260
Ethylbenzene	1,300	60
p,m-Xylene	15,700	140
o-Xylene	3,960	80

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	94.7 %
	Bromfluorobenzene	81.7 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

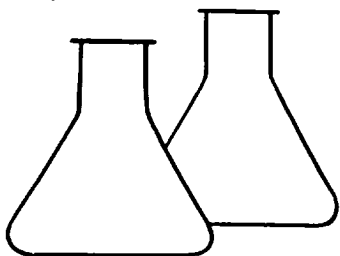
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas 1---Separator Pit---94126

Robert M. Young
Analyst

Maria S. Young
Review



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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	T 2 @ 5'	Date Reported:	09-23-92
Laboratory Number:	0599	Date Sampled:	05-11-92
Sample Matrix:	Soil	Date Received:	05-11-92
Preservative:	Cool	Date Extracted:	06-04-92
Condition:	Cool & Intact	Date Analyzed:	09-23-92
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	177	70
Toluene	2,2530	70
Ethylbenzene	ND	50
p,m-Xylene	56,700	110
o-Xylene	18,300	90

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	113 %
	Bromfluorobenzene	110 %

Method: Method 5030, Purge-and-Trap, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

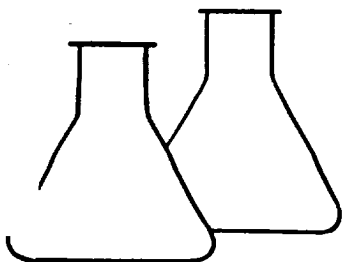
Method 8020, Aromatic Volatile Organics, Test Methods
for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Masden GC 1 Separator Pit 94126

Analyst

Review



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

TOTAL RECOVERABLE PETROLEUM HYDROCARBON

Client: Amoco
Sample ID: T1-3 @GW
Laboratory Number: 0602
Analysis Requested: 418.1
Sample Matrix: Water
Condition: Received on Ice

Report Date: 5-14-92
Date Sampled: 5-11-92
Date Received: 5-11-92
Date Extracted: 5-12-92
Date Analyzed: 5-12-92
Preservative: Cool

Parameter	Concentration (mg/l)	Det. Limit (mg/l)
Total Recoverable Petroleum Hydrocarbons	550.0	10.0

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

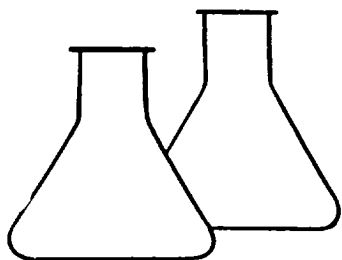
ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas 1 - Separator Pit 94126

Michael L. E.
Analyst

Maris D. Young
Review

COMPOSITE
INVALID



ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	T3 @ GW	Date Reported:	08-21-92
Laboratory Number:	0601	Date Sampled:	05-11-92
Sample Matrix:	Water	Date Received:	05-11-92
Preservative:	HgCl & Cool	Date Analyzed:	06-25-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	20.0
Toluene	ND	130
Ethylbenzene	38.0	30.0
p,m-Xylene	101	70
o-Xylene	84	40.0

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	106.9 %
	Bromfluorobenzene	146.2 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas 1---Separator Pit---94126
Excessive surrogate recovery due to coelution of surrogate with hydrocarbons from sample.

Robert M. Young
Analyst

Morris D. Young
Review

94126

CHAIN OF CUSTODY RECORD

Client/Project Name		Project Location		ANALYSIS/PARAMETERS							
AMOCO / 92140		SEP PIT									
Sampler: (Signature)		Madden Gas									
Chain of Custody Tape No.		No. of Containers									
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	BETX	HEAD	8020	TPH/HQ.I	No. of Containers	Remarks	
T1C7'	5/11/92	1115	0588	SOIL	✓				1		
T2-C5'	5/11/92	1300	0589	SOIL			✓		1		
T1C GW	5/11/92	1130	0600	WATER			✓		2		
T3C GW	5/11/92	1350	0601	WATER			✓		2		
T1-3 GW	5/11/92	1350	0602	WATER				✓	1		
T1C7'	5/11/92	1115	0603	SOIL			✓		1		
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time	
Ray Benally		5/11/92		1725		Michael L. Egan		5-11-92		1725	
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time	
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time	

ENVIROTECH INC.

5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615