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REPORTS

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ENVIROTECH INC.

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3RD MONTHLY MONITORING REPORT

AMOCO PRODUCTION CORPORATION
SAN JUAN GRAVEL A-1
PRODUCTION TANK PIT AREA

FARMINGTON, NEW MEXICO

Prepared For
Mr. Buddy Shaw
Environmental Coordinator
AMOCO Production Company

NOVEMBER 1993

Project: 92140

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

THIRD MONTHLY MONITORING REPORT
AMOCO PRODUCTION CORPORATION
SAN JUAN GRAVEL A-1 - TANK BATTERY
PRODUCTION TANK PIT AREA
SE/4, SE/4 (P) SECTION 21, T29N, R13W, NMPM
FARMINGTON, SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR:
MR. BUDDY SHAW
ENVIRONMENTAL COORDINATOR
AMOCO PRODUCTION COMPANY

PROJECT/PIT NO.: 92140/C4028

NOVEMBER 1993

ENVIROTECH, INC.
Environmental Scientist & Engineers
5796 U.S. Highway 64-3014
Farmington, New Mexico

(505) 632-0615

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APPENDICES

NOVEMBER 1993 PROJECT/PIT NO: 92140/C4028

THIRD MONTHLY MONITORING REPORT
AMOCO PRODUCTION CORPORATION
SAN JUAN GRAVEL A-1 - TANK BATTERY
PRODUCTION TANK PIT AREA
SE/4, SE/4 (P) SECTION 21, T29N, R13W, NMPM
FARMINGTON, SAN JUAN COUNTY, NEW MEXICO

INTRODUCTION

Amoco Production Company has installed a pump and treat system as part of a proposed Remedial Action Plan (RAP) to abate groundwater contamination from the production equipment and storage system associated with the subject well located south of Farmington, in the Southeast 1/4 of the Southeast 1/4 of Section 21, Township 29N, Range 13W, NMPM, San Juan County, New Mexico (refer to Vicinity Map - Appendix A). Monthly monitoring of the remediation system has been required by the New Mexico Oil Conservation Division (NMOCD) for the initial three months of the system operation.

Included in this Monthly Monitoring Report (MMR) is the treatment system analyses and an outline of the future sampling schedule for the remaining 1993 calendar year and the first three quarters of 1994 (located within the Purpose and Scope of Work section on the following page).

PURPOSE AND SCOPE OF WORK

The purpose of this monthly monitoring is to verify that the pump and treat system is effectively remediating groundwater contamination at the referenced site. Verification is conducted by monitoring the Air Stripper Effluent.

The scope of work includes collection of groundwater samples for benzene, toluene, ethylbenzene, and xylenes (BTEX), Polynuclear Aromatic Hydrocarbons (PAH), heavy metals, and major cations and anions analyses using appropriate EPA laboratory methods.

The scope of work consisted of the following:

A. Sampling of the Air Stripper effluent to verify the treated water contaminant concentrations during the remediation.

B. Documentation of analytical results from the sampling event.

C. The remaining 1993 calendar year and first 3 quarters of

FUTURE SAMPLING SCHEDULE

	OCT-DEC, 93	JAN-MAR, 94	APR-JUN, 94	JUL-SEP, 94
MW - 1	X		X	
MW - 2		X		X
MW - 3	X		X	
MW - 4		X		X
MW - 5	X		X	
MW - 6		X		X
MW - 7	X		X	
EFFLUENT	X	X	X	X

ANALYTICAL RESULTS

For this monthly monitoring, only the effluent from the Air Stripper was required to be sampled. The BTEX groundwater sample was collected in laboratory supplied new 40 ml VOA vials and preserved with 5% $HgCl_2$; Polynuclear Aromatic Hydrocarbons (PAH) in a new 1 liter amber coated glass container with teflon closure, heavy metals in a 250 ml plastic container, and the major cations and anions in a 1 liter plastic container. The groundwater samples were placed on ice and transported to Envirotech's laboratory later that day. Sampling was preformed in accordance with USEPA SW-846 protocol.

The field and laboratory results are summarized as follows:

1. Table 1 summarizes the field sampling conditions for this monthly monitoring report.

2. Table 2 summarizes the laboratory analyses for the effluent.

3. Table 3 summarizes the Clean-up Standards for groundwater for the State of New Mexico.

All analytical results for the laboratory analyses, laboratory QC/QA, and Chain-of-Custody for this monthly sampling event are presented in Appendix B.

TABLE 2

RESULTS OF THE AIR STRIPPER EFFLUENT LABORATORY ANALYSIS
AMOCO PRODUCTION CORPORATION
SAN JUAN GRAVEL A-1 - TANK BATTERY
PRODUCTION TANK PIT AREA

BTEX and PAH (µg/L)

SAMPLING POINT	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	PAH (µg/L)
Injection Side	5.7	1.1	0.5	1.7	NA
Effluent	ND	0.7	ND	3.1	ND

HEAVY METALS (mg/L)

SAMPLING POINT	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)
Effluent	ND	ND	ND	ND	ND	ND	ND

NOTE: **ND - Non detectable at the stated detection limit (see laboratory analyses).**
NA - Indicates measurements not applicable.
µg/L = equivalent to parts per billion.
mg/L = equivalent to parts per million.

TABLE 1

SUMMARY OF EFFLUENT SAMPLING CONDITIONS
AMOCO PRODUCTION COMPANY
SAN JUAN GRAVEL A-1 - TANK BATTERY
PRODUCTION TANK PIT AREA

SAMPLING DATE: OCTOBER 11, 1993

SAMPLING POINT	WATER CONDITIONS			COMMENTS
	TEMP. (°C)	CONDUCT (µS)	pH	
Injection Side	19.3	1700	7.80	clear, no odor
Effluent	19.0	1900	7.70	clear, no odor

TABLE 2
(PART 2 OF 2)

LABORATORY ANALYSES		LABORATORY ANALYSES		
			mg/L	meq/L
Lab pH	7.60	Bicarbonate as HCO3	560	9.19
Lab Conductivity, µmhos/cm @ 25°C	1890	Carbonate as CO3	0	0
		Chloride	98	2.77
Total Dissolved Solids (180°C), mg/L	1240	Sulfate	497	10.36
Total Dissolved Solids (calc), mg/L	1140	Calcium	191	9.54
Total Alkalinity as CaCO3, mg/L	459	Magnesium	57	4.73
Total Hardness as CaCO3, mg/L	714	Potassium	10	0.26
		Sodium	6.0	7.09
NOTE: NA - NO DATA AVAILABLE.		Hydroxide as OH	0	0
µmhos/cm = micro mhos per centimeter		Major Cations	NA	21.62
mg/L = parts per million		Major Anions	NA	22.32
meq/L = milliequivalent per liter		Cation/Anion Differ.	NA	1.59%

NOTE: NA - Indicates measurements not applicable.

Clean Up Standards:

The current maximum allowable concentrations for groundwater contamination as outlined by the State of New Mexico Water Quality Control Commission (August 18, 1991) are summarized and reported in Table 4.

TABLE 4

HYDROCARBON SOIL & GROUNDWATER CONTAMINATION STANDARDS
STATE OF NEW MEXICO
RANKING FOR THE SITE > 19

Parameter	Max. Allowable Limits Groundwater
	(µg/L)
Benzene	10
Toluene	750
Ethylbenzene	750
Total Xylene	620
Polynuclear aromatic Hydrocarbons	(µg/L)
Total Naphthalene	30
Benzo(a)pyrene	0.7
Heavy Metals	(mg/L)
Arsenic	0.1
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Total Mercury	0.002
Selenium	0.05
Additional Information	(mg/L)
Protected Groundwater Total Dissolved Solids	<10000

Notes: 1) **µg/L - equivalent to parts per billion.**
mg/L - equivalent to parts per million.

DISCUSSION

Laboratory Analyses

All laboratory analyses conducted for the Air Stripper Effluent reveal non-detect at the stated detection limit or they are well below regulatory standards. The Polynuclear Aromatic Hydrocarbons analyses have consistently been reported as non-detect at the stated detection limit since the initiation of the remediation system. Most of the heavy metals constituents have steadily decreased to non-detect for the analyses conducted.

In addition, the Total Dissolved Solids analysis for the Air Stripper Effluent continues to indicate that the groundwater contains less than 10,000 ppm.

System Effectiveness

The data presented within this report clearly shows that Benzene present in the Effluent are effectively stripped by the Air Stripper unit. Based on observations, the recovery wells are delivering hydrocarbon contaminated water into the oil/separator tank where any free product is removed prior to routing to the Air Stripper.

LIMITATIONS AND CLOSURE

The scope of Envirotech's services was limited to sampling of the Air Stripper Effluent. All work has been performed in accordance with generally accepted professional practices in geotechnical/ environmental engineering and hydrogeology.

The Monthly Monitoring Report has been prepared for the exclusive use of Amoco Production Company as it pertains to their San Juan Gravel A -1 - Tank Battery facility located on the SE/4 of the SE/4 of Section 21, Township 29N, Range 13W, NMPM, San Juan County, New Mexico.

I certify that I am personally familiar with the investigative work at the site, the site conditions, and the reported information as described and this document.

Respectfully Submitted,
ENVIROTECH, INC.

Reviewed By:

Nelson Velez
Staff Geologist

Michael K. Lane, P.E.
Geological Engineer

Appendices

DISCUSSION

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I certify that I am personally familiar with the investigative work at the site, the site conditions, and the reported information as described and this document.

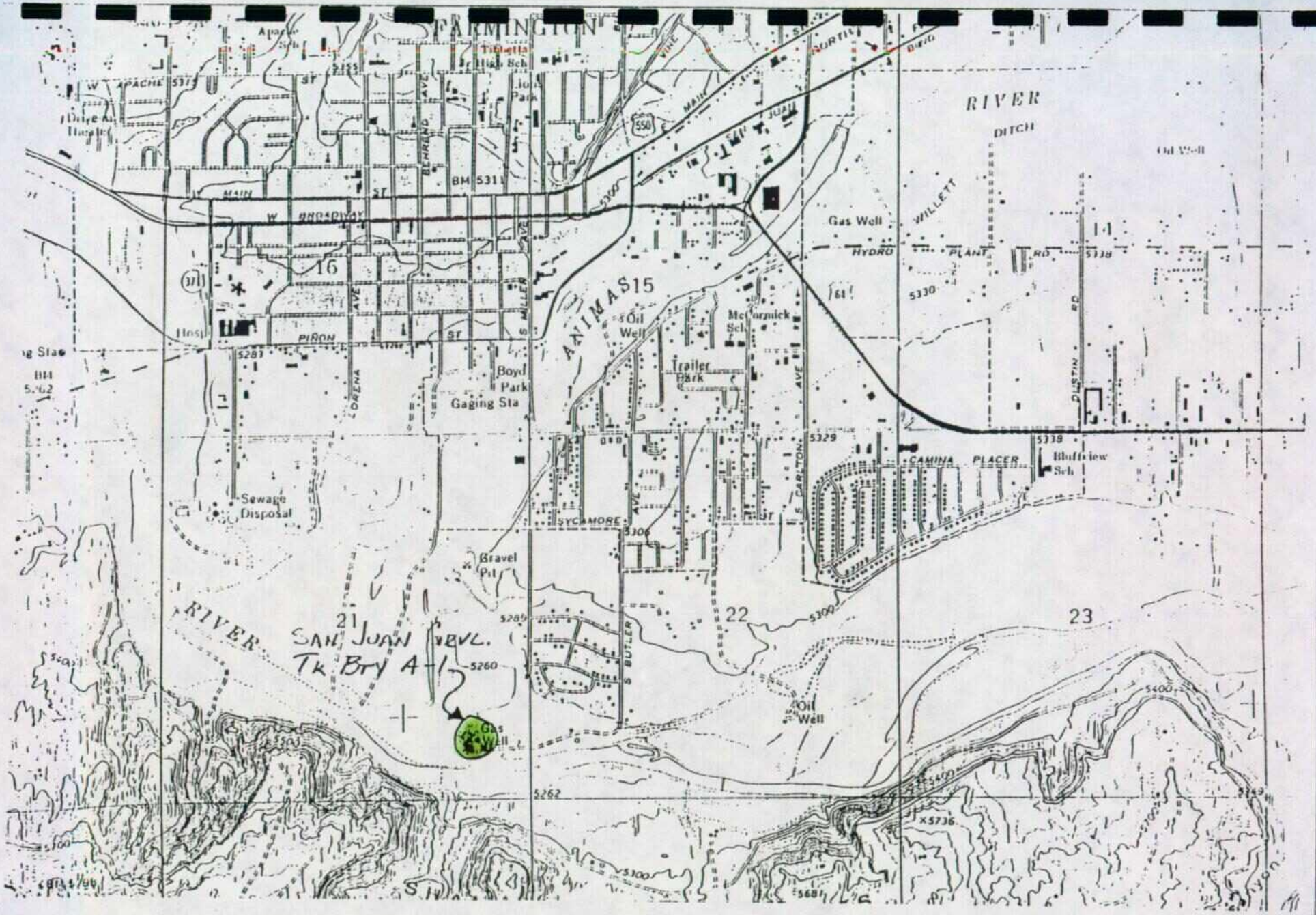
Respectfully Submitted,
ENVIROTECH, INC.

Nelson Velez
Staff Geologist

Reviewed By:

Michael K. Lane, P.E.
Geological Engineer

Appendices



REFERENCE: USGS FARMINGTON SOUTH QUADRANGLE, SAN JUAN COUNTY, NM 7.5' SERIES.

SAN JUAN GRAVEL TANK BATTERY #1
SE/4, SE/4, SEC 21, T29N, R13W
PRODUCTION TANK PIT AREA

NEW MEXICO PRINCIPAL MERIDIAN

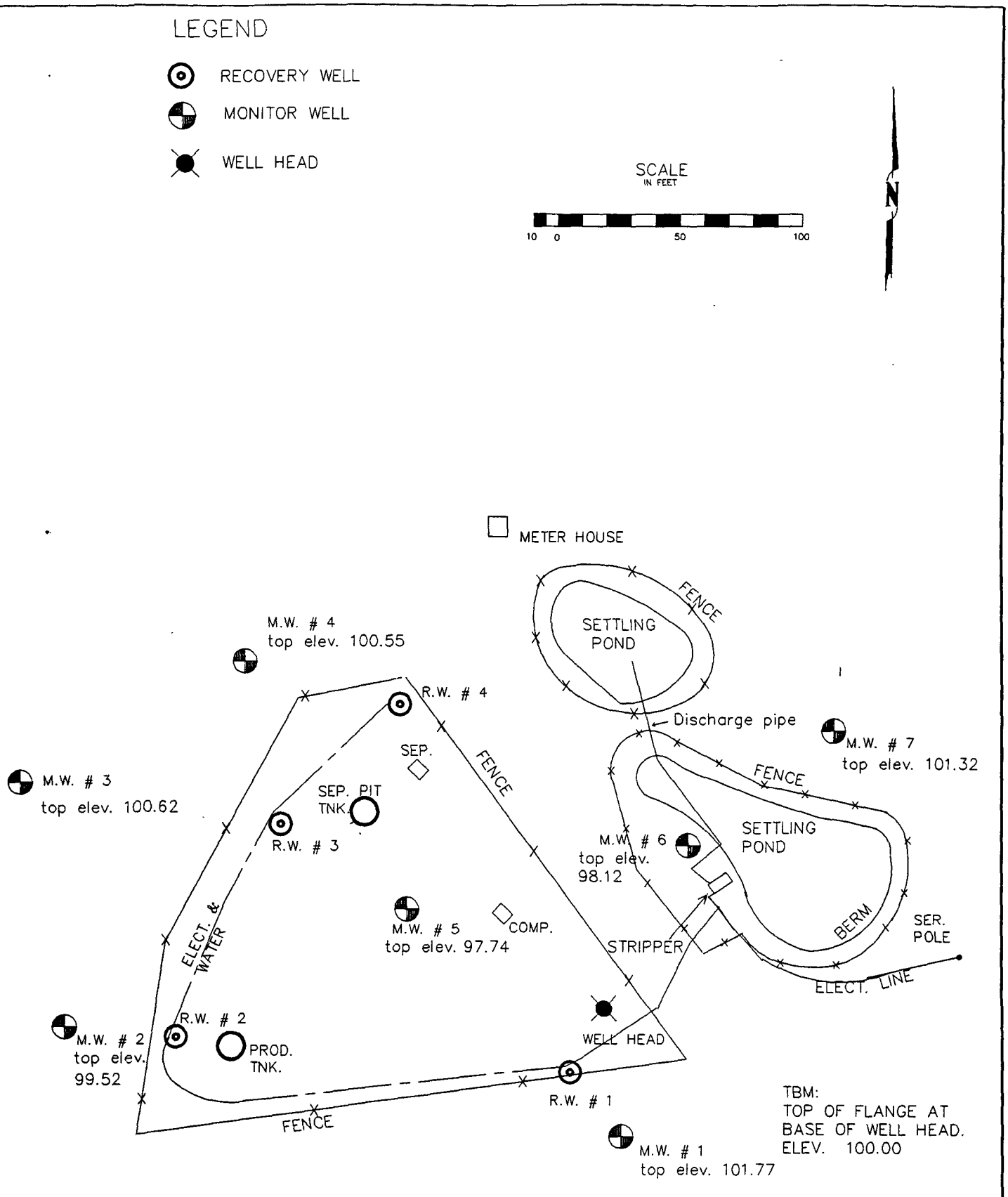
PROJECT NO: 92140/94020.29

AMOCO PRODUCTION COMPANY
200 AMOCO CT.
FARMINGTON, NEW MEXICO

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

VICINITY MAP
SHEET 1

9/30/92



SITE DIAGRAM
AMOCO PRODUCTION CO
SAN JUAN GRAVEL A1
TANK BATTERY

PROJECT No. 92140/C4028

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

ENGINEERED BY: DEF
EDITED BY: NV
DATE SURVEYED: 2/24/93
DATE DRAWN: 7/30/93
SHEET: # 1

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:	Injection Side	Date Reported:	10-12-93
Laboratory Number:	6282	Date Sampled:	10-11-93
Sample Matrix:	Water	Date Received:	10-11-93
Preservative:	HgCl & Cool	Date Analyzed:	10-12-93
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	5.7	0.2
Toluene	1.1	0.3
Ethylbenzene	0.5	0.2
p,m-Xylene	1.2	0.3
o-Xylene	0.5	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromofluorobenzene	101 %

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: SJ GVL A-1, Production Pit, C4028.

Analyst

Review

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:	Effluent	Date Reported:	10-12-93
Laboratory Number:	6283	Date Sampled:	10-11-93
Sample Matrix:	Water	Date Received:	10-11-93
Preservative:	HgCl & Cool	Date Analyzed:	10-12-93
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	0.7	0.3
Ethylbenzene	ND	0.2
p,m-Xylene	2.7	0.3
o-Xylene	0.4	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
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: SJ GVL A-1, Production Pit, C4028.

Analyst

Review

ENVIROTECH LABS

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

EPA METHOD 8100
POLYNUCLEAR AROMATIC HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	Effluent	Date Reported:	10-14-93
Laboratory Number:	6280	Date Sampled:	10-11-93
Sample Matrix:	Water	Date Received:	10-11-93
Preservative:	Cool	Date Analyzed:	10-13-93
Condition:	Cool & Intact	Analysis Requested:	8100

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Naphthalene	ND	0.20
Acenaphthylene	ND	0.20
Acenaphthene	ND	0.20
Fluorene	ND	0.20
Phenanthrene	ND	0.20
Anthracene	ND	0.20
Fluoranthene	ND	0.20
Pyrene	ND	0.20
Benzo(a)anthracene	ND	0.20
Chrysene	ND	0.20
Benzo(b) & Benzo(k) fluoranthene	ND	0.20
Benzo(a)pyrene	ND	0.20
Indeno(1,2,3-cd) pyrene & Dibenzo(a,h)anthracene	ND	0.56
Benzo(g,h,i)perylene	ND	0.20

SURROGATE RECOVERY	Parameter	Percent Recovery
	1-fluoronapthalene	101 %

Methods: Method 8100, Polynuclear Aromatic Hydrocarbons, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

ND - Parameter not detected at the stated detection limit.

Comments: SJ GVL A-1 Production Pit C4028

Analyst

Review

ENVIROTECH LABS

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

TRACE METAL ANALYSIS

Client:	Amoco	Project #:	92140
Sample ID:	Effluent	Date Reported:	10-12-93
Laboratory Number:	6281	Date Sampled:	10-11-93
Sample Matrix:	Water	Date Received:	10-11-93
Preservative:	Cool	Date Analyzed:	10-12-93
Condition:	Cool & Intact	Analysis Needed:	Trace metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
ARSENIC	ND	0.001
BARIUM	ND	0.1
CADMIUM	ND	0.001
CHROMIUM	ND	0.001
LEAD	ND	0.001
MERCURY	ND	0.002
SELENIUM	ND	0.001

Method: Methods 3010A, 3020A, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA 1992

Methods 7060A, 7080, 7131, 7191, 7470, 7421, 7740, 7760A Analysis of Metals by GFAA and FLAA, SW-846, USEPA 1992

ND - Parameter not detected at the stated detection limit.

Comments: SJ GVL A-1 Production Pit C4028

Analyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**ENVIROTECH**		
Sample ID:	Effluent (4932)	Date Reported:	10/28/93
Laboratory ID:	3949	Date Sampled:	10/11/93
Sample Matrix:	Water	Time Sampled:	1022
Condition:	Cool/Intact	Date Received:	10/11/93

Parameter	Analytical Result	Units		Units
Lab pH	7.6	s.u.		
Lab Conductivity @ 25° C	1,890	umhos/cm		
Total Dissolved Solids @ 180°C	1,240	mg/L		
Total Dissolved Solids (Calc)	1,140	mg/L		
Total Alkalinity as CaCO3	459	mg/L		
Total Hardness as CaCO3	714	mg/L		
Bicarbonate as HCO3	560	mg/L	9.19	meq/L
Carbonate as CO3	0	mg/L	0.00	meq/L
Hydroxide as OH	0	mg/L	0.00	meq/L
Chloride	98	mg/L	2.77	meq/L
Sulfate	497	mg/L	10.36	meq/L
Calcium	191	mg/L	9.54	meq/L
Magnesium	57	mg/L	4.73	meq/L
Potassium	10	mg/L	0.26	meq/L
Sodium	6.0	mg/L	7.09	meq/L
Cations			21.62	meq/L
Anions			22.32	meq/L
Cation/Anion Difference			1.59	%

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.

Reviewed by Jeff Thomas

ENVIROTECH LABORATORIES

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

QUALITY ASSURANCE/QUALITY CONTROL

DOCUMENTATION

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:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	10-12-93
Laboratory Number:	1012AM.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	10-12-93
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.3
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.3
o-Xylene	ND	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	110 %
Bromofluorobenzene	81 %

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

ENVIROTECH LABS

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

EPA METHOD 8100
POLYNUCLEAR AROMATIC HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	10-14-93
Laboratory Number:	1013pah.blk	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	10-13-93
Condition:	NA	Analysis Requested:	8100

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Naphthalene	ND	0.2
Acenaphthylene	ND	0.2
Acenaphthene	ND	0.2
Fluorene	ND	0.2
Phenanthrene	ND	0.2
Anthracene	ND	0.2
Fluoranthene	ND	0.2
Pyrene	ND	0.2
Benzo(a)anthracene	ND	0.2
Chrysene	ND	0.2
Benzo(b) & Benzo(k) fluoranthene	ND	0.2
Benzo(a)pyrene	ND	0.2
Indeno(1,2,3-cd) pyrene & Dibenzo(a,h)anthracene	ND	0.6
Benzo(g,h,i)perylene	ND	0.2

SURROGATE RECOVERY:

Parameter	Percent Recovery
1-fluoronapthalene	105 %

Methods: Method 8100, Polynuclear Aromatic Hydrocarbons, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS

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

TRACE METAL ANALYSIS - BLANKS

Client:	NA	Project #:	NA
Sample ID:	Blanks	Date Reported:	10-12-93
Laboratory Number:	NA	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	Cool	Date Analyzed:	10-12-93
Condition:	NA	Analysis Needed:	Trace Metals

Parameter	Instrument Blank (mg/L)	Method Blank (mg/L)	Det. Limit (mg/L)
ARSENIC	ND	ND	0.001
BARIUM	ND	ND	0.1
CADMIUM	ND	ND	0.001
CHROMIUM	ND	ND	0.001
LEAD	ND	ND	0.001
MERCURY	ND	ND	0.002
SELENIUM	ND	ND	0.001
SILVER	ND	ND	0.001

Method: Methods 3010A, 3020A, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, Sept. 1992

Methods 7060A, 7080, 7131, 7191, 7470, 7421, 7740, 7760A Analysis of Metals by GFAA and FLAA, SW-846, USEPA, 1992

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS

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

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

Client:	NA	Project #:	NA
Sample ID:	Sample Spike	Date Reported:	10-12-93
Laboratory Number:	6284	Date Sampled:	10-11-93
Sample Matrix:	Water	Date Received:	10-11-93
Analysis Requested:	BTEX	Date Analyzed:	10-12-93
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	1.5	20.0	23.8	0.2	111	39-150
Toluene	14.9	20.0	36.1	0.3	103	46-148
Ethylbenzene	8.6	20.0	29.6	0.2	103	32-160
p,m-Xylene	109.5	20.0	121.4	0.3	94	46-148
o-Xylene	38.3	20.0	53.6	0.2	92	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

ENVIROTECH LABS

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

QUALITY ASSURANCE REPORT

TRACE METAL ANALYSIS - MATRIX SPIKE

Client:	NA	Project #:	NA
Sample ID:	NA	Date Reported:	10-12-93
Laboratory Number:	NA	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Analysis Requested:	Trace Metals	Date Analyzed:	10-12-93
Condition:	NA	Date Extracted:	NA

Parameter	Spike Added (mg/L)	Sample Result (mg/L)	Spiked Sample Result (mg/L)	Percent Recovery
ARSENIC	0.100	ND	0.098	98
BARIUM	10.0	0.2	10.2	100
CADMIUM	0.100	0.006	0.106	100
CHROMIUM	0.200	0.001	0.202	101
LEAD	0.200	0.005	0.204	99
MERCURY	0.025	0.002	0.026	96
SELENIUM	0.100	ND	0.097	97

QA ACCEPTANCE CRITERIA:

Parameter	Acceptance Range %
Trace Metals	80 - 120

Method: Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, July 1992.

Methods 7060, 7080, 7131, 7191, 7470, 7421, 7740, 7760A Analysis of Metals by GFAA and FLAA, SW-846, USEPA

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

3092

CHAIN OF CUSTODY RECORD

C4028

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
Amoco 92140	PROD. PIT SJ GUL A-1	
Sampler: (Signature) Kelly Johnson NV	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8020)						Remarks
INJECTION SIDE	10/11/93	1006	6282	WATER	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Kelly Johnson NV	10/11/93	1135	Tony Tostado	10/11/93	1140
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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

3091

CHAIN OF CUSTODY RECORD

C4028

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
Amoco 92140	PROD. PIT SJ GUL A-1	
Sampler: (Signature) Kelly Johnson NV	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8020)	PAH (8100)	HEAVY METALS	ANIONS / CATIONS			Remarks
EFFLUENT	10/11/93	1022	6279	WATER	1				✓			
EFFLUENT	10/11/93	1021	6280	WATER	2		✓					
EFFLUENT	10/11/93	1022	6281	WATER	2			✓				
EFFLUENT	10/11/93	1009	6283	WATER	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Kelly Johnson NV	10/11/93	1135	Tony Tustons	10/11/93	1140
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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