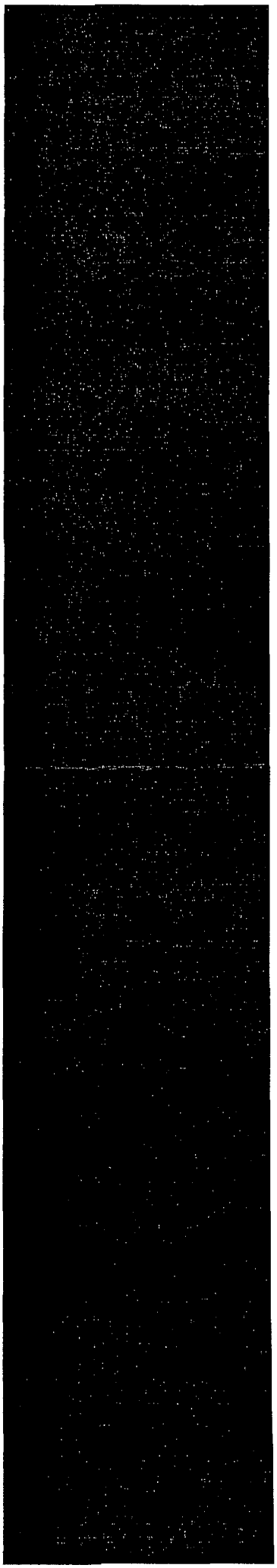
GW - 17

MONITORING REPORTS

DATE:

1998-1995



BROWN AND CALDWELL

FINAL
SEMI-ANNUAL GROUNDWATER SAMPLING REPORT
HOBBS, NEW MEXICO
(FORMER NOWSCO SITE)
BJ SERVICES COMPANY, U.S.A.

SEPTEMBER 30, 1998

BROWN AND CALDWELL

Suite 2500, 1415 Louisiana, Houston, TX 77002
(713) 759-0952 • (713) 308-3886

TRANSMITTAL MEMORANDUM

To: Wayne Price New Mexico Oil Conservation Division 2040 South Pacheco Street Santa Fe, New Mexico 87505	Date: 09/30/98	Job No: 6240-14
	Subject: Hobbs, New Mexico (Former NOWSCO Site) Facility	
	Contract No:	
	Equipment No:	
	Spec. Ref:	
	Submittal No:	

WE ARE SENDING:
- ☒ Attached
- ☐ Under separate cover via **1st Class Mail** the following items:
  - ☐ Shop Drawings
  - ☐ Prints
  - ☐ Plans
  - ☐ Samples
  - ☐ Specifications
  - ☐ Copy of letter
  - ☐ Change Order
  - ☒ Other: Final Report

THESE ARE TRANSMITTED AS CHECKED BELOW:
- ☐ For approval
- ☒ For your use
- ☐ As requested
- ☐ For review and comment
- ☐ With submittal review action noted

SUBMITTAL REVIEW ACTIONS:
- ☐ No exceptions taken
- ☐ Make revisions
- ☐ Amend and resubmit
- ☐ Rejected--see Remarks
- ☐ None

Copies	Date	No.	Description
1	9/30/98		Final Semi-Annual Groundwater Sampling Report, Hobbs, New Mexico (Former NOWSCO Site) BJ Services Company, U.S.A.

REMARKS:

cc: Rick Johnson, BJ Services Company, U.S.A.
Brown and Caldwell File
Transmittal File w/o attachment
Client File w/o attachment

Timothy Jenkins

If enclosures are not as noted, kindly notify us at once

P:\wp\bjserv\transmit\308tr.doc

FINAL
SEMI-ANNUAL GROUNDWATER SAMPLING REPORT
HOBBS, NEW MEXICO (FORMER NOWSCO SITE)
BJ SERVICES COMPANY, U.S.A.

Prepared for

BJ Services Company, U.S.A.
8701 New Trials Drive
The Woodlands, Texas 77381

BC Project Number: 6240-14

Timothy L. Jenkins
Associate Engineer

September 30, 1998

Brown and Caldwell
1415 Louisiana, Suite 2500
Houston, Texas 77002 - (713) 759-0999

Contents

CONTENTS

1

1.0 INTRODUCTION

Brown and Caldwell conducted a groundwater sampling event at the BJ Services Company, U.S.A. (BJ Services) former NOWSCO Well Services, Inc. (NOWSCO) facility in Hobbs, New Mexico on July 9, 1998. The facility is located in Lea County, on the north side of the Carlsbad Highway, also known as U.S. Highway 180/U.S. Highway 62. The facility address is 5514 Carlsbad Highway, Hobbs, New Mexico. A site location map and site plan are attached as Figures 1 and 2, respectively.

Groundwater sampling of monitor wells MW-1, MW-2 and MW-3 was conducted according to the requirements specified in a February 10, 1998 correspondence from the New Mexico Oil Conservation Division (NMOCD) to BJ Services, attached as Appendix A. Despite efforts to engage a submerged pump, the water supply well could not be sampled as requested in the correspondence. Groundwater samples were submitted to an analytical laboratory to determine the concentration of metals, chlorides, and BTEX, as requested in the February 10, 1998 NMOCD correspondence. The laboratory analytical report is included as Appendix B.

This report presents the results of the groundwater sampling event conducted at the BJ Services (former NOWSCO) facility in July, 1998.

2

2.0 FACILITY DESCRIPTION AND BACKGROUND

The former NOWSCO facility is located at 5514 Carlsbad Highway (U.S. 180/U.S. 62) in Hobbs, New Mexico. The facility has been inactive since its purchase by BJ Services on June 12, 1996 as a result of BJ Services' acquisition of NOWSCO. The facility was primarily utilized for well stimulation by acidizing, a process that uses hydrochloric acid mixtures which are blended onsite and delivered to oil and gas well locations.

The facility is located in an area of industrial and undeveloped land west of Hobbs, New Mexico, near the Lea County Airport. A site location map is attached as Figure 1.

On January 6, 1983, the NMOCD approved a discharge plan describing the operation of a pit/tank used for the discharge and recycling of field acid waste, and eventual disposal of well treatment solution. This unit, known as the caliche pit, was located west of the acid dock, and was the subject of past investigations. The caliche pit was inactive prior to the June 1996 ownership transfer to BJ Services, and has not been in operation since this ownership transfer.

A Subsurface Investigation and Site Closure Plan Update was performed in March 1995 by Ritter Environmental & Geotechnical Services, Inc. (Ritter), under contract to NOWSCO. During the March 1995 investigation, four borings were completed at the site. One of the soil borings was drilled to the west of a subgrade sump located in the northwestern portion of the facility. The three remaining soil borings were completed in the vicinity of the former caliche pit. One monitor well (MW-1) was installed during the March 1995 investigation and is located to the west of the former caliche pit, as shown in Figure 3.

On November 19, 1997, Brown and Caldwell completed two soil borings at the BJ Services former NOWSCO facility in Hobbs, New Mexico. In accordance with the Work Plan for Drilling and Assessment Activities (Work Plan) dated November 17, 1997, these borings were completed as

monitor wells MW-2 and MW-3, as shown in Figure 3. Groundwater samples were subsequently collected from the three monitor wells at the site in December 1997.

On January 30, 1998, Brown and Caldwell submitted a Soil and Groundwater Assessment Report for the former caliche pit area. The NMOCD granted approval of the report recommendations in their February 10, 1998 correspondence, and detailed the conditions for the approval. The July 1998 groundwater monitoring event was performed in accordance with these conditions, with the exception of Condition #2; the water supply well could not be sampled due to pump failure.

3.0 FIELD ACTIVITIES

3.1 Water Level Measurement and Groundwater Gradient

Water level measurements were collected from the three monitor wells at the site on July 9, 1998 to determine groundwater flow direction in the eastern portion of the site. The depth-to-groundwater measurements were compared with the top of casing elevations for each monitor well to compute a relative groundwater elevation. The groundwater elevation calculations are presented in Table 1. This data was used to create the July 9, 1998 potentiometric surface map presented as Figure 4.

On the basis of the east-northeast groundwater flow direction depicted in Figure 4, monitor well MW-1 is upgradient of the former caliche pit, and MW-2 and MW-3 are downgradient of the former caliche pit.

3.2 Monitor Well Purging and Sampling Procedures

Sampling of the water supply well at the site was attempted on July 9, 1998, and again on July 10, 1998. These attempts were unsuccessful due to failure of the pump installed in the water supply well. The well configuration did not allow for manual sampling of the well.

Groundwater samples were collected from the monitoring wells at the site on July 9, 1998. Each monitoring well was purged with a submersible pump. Each well was purged a minimum of three well volumes prior to collection of the respective groundwater sample and field measurement for dissolved oxygen and ferrous iron. Groundwater sampling field data sheets are provided in Appendix C. Groundwater samples were transferred to laboratory-supplied glass and plastic containers, labeled, and immediately placed on ice in an insulated cooler for shipment. At the conclusion of sampling, the samples were delivered with completed chain-of-custody documentation to the analytical laboratory. The laboratory report is included in Appendix B.

3.3 Decontamination Procedures

All field sampling equipment was decontaminated prior to use at each well location by washing with a laboratory grade detergent, rinsing with potable water, and completing a final rinse with distilled water.

3.4 Sample Analysis

Each of the groundwater samples was analyzed for chlorides by EPA Method 300.0A, total RCRA metals by SW-846 Method 3050/6010/7000 Series, and benzene, toluene, ethylbenzene, and xylenes (BTEX) by Method 8020. Sample MW-1 was also analyzed for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) by Methods 8240/8270 to fulfill the requirements of another unit undergoing closure in the western portion of the site; results other than BTEX, metals, and chlorides are not included in this groundwater sampling report.

4.0 ANALYTICAL RESULTS

Groundwater samples were collected and analyzed as required in NMOCD correspondence, February 10, 1998, and to monitor the progress of natural attenuation processes in the area of the former caliche pit. Analytical results for groundwater samples collected during the November and December 1997 sampling event are summarized in Table 2; analytical results for groundwater samples collected during the July 1998 sampling event are summarized in Table 3.

As in the case of the December 1997 sampling, monitor well MW-2 yielded a groundwater sample with detectable concentrations of toluene, ethylbenzene and xylenes at respective concentrations of 1,700 micrograms per liter (µg/L), 170 µg/L, and 830 µg/L. The toluene and xylenes concentrations exceed the New Mexico Water Quality Control Commission (NMWQCC) standards of 750 µg/L and 620 µg/L, respectively. The only metal detected in MW-2 was barium at a concentration of 0.22 milligrams per liter (mg/L).

Xylenes, barium, and mercury were detected in the groundwater sample collected from monitor well MW-1 at concentrations of 7.4 µg/L, 0.44 mg/L and 0.00027 mg/L, respectively. These detections do not exceed the NMWQCC standards of 620 µg/L for xylenes, 1.0 mg/L for barium, and 0.002 mg/L for mercury. No other BTEX constituents or metals were detected in this sample.

Arsenic was the only constituent detected in MW-3, and was reported at a concentration of 0.010 mg/L. This concentration is less than the NMWQCC standard of 0.1 mg/L. No BTEX constituents or metals were detected in the sample from monitor well MW-3, which is located downgradient and southeast of the center of the former caliche pit.

Chlorides were detected in the upgradient monitor well, MW-1, at a concentration of 636 mg/L. This concentration exceeds the NMWQCC standard of 250 mg/L, which is applicable to domestic water supply wells only. The chlorides concentrations in the downgradient wells, MW-2 and MW-3, were each less than 250 mg/L.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Groundwater elevation data from monitor wells MW-1 though MW-3 indicate an east-northeastward groundwater flow direction in the eastern portion of the BJ Services (former NOWSCO) facility at Hobbs, New Mexico. Monitor wells MW-2 and MW-3 are located downgradient of the former caliche pit.

The groundwater analytical results for the July 1998 sampling event indicate that toluene and xylenes were detected in MW-2 at concentrations above the NMWQCC groundwater standards. These standards are listed in the most recent guideline publication, as revised on December 1, 1995. While organic constituents have increased in concentration from the previous sampling event, field measurements for dissolved oxygen and ferrous iron suggest that natural attenuation may be occurring. The increases in hydrocarbon concentrations observed in monitor well MW-2 may be a result of seasonal fluctuations of the water table. Ethylbenzene and barium were also detected in MW-2 samples, but at concentrations less than NMWQCC standards. Other various metals were detected in MW-1 and MW-3 at concentrations less than NMWQCC standards.

Chlorides were detected above the NMWQCC standard in monitor well MW-1. The NMWQCC standard is applicable only to domestic water supply wells, however.

5.2 Recommendations

Brown and Caldwell recommends that monitor wells MW-1 through MW-3 be sampled in January 1999, approximately 6 months from the July 1998 sampling event. Samples should be analyzed for BTEX and RCRA metals.

If BTEX and metals concentrations fall below NMWQCC standards during the next sampling event, Brown and Caldwell recommends that the NMOCD consider granting closure for the former

waste management unit known as the caliche pit. However, if groundwater concentrations continue at the current level, or increase, then Brown and Caldwell understands that the NMOCD may require additional sampling.

DISTRIBUTION

Final
Semi-Annual Groundwater Sampling Report
Hobbs, New Mexico (Former NOWSCO Site)
BJ Services Company, U.S.A.

September 30, 1998

1 copy to: New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Attention: Mr. Wayne Price

1 copy to: BJ Services Company, U.S.A.
8701 New Trails Drive
The Woodlands, Texas 77381

Attention: Mr. Rick N. Johnson

1 copy to: Brown and Caldwell
File

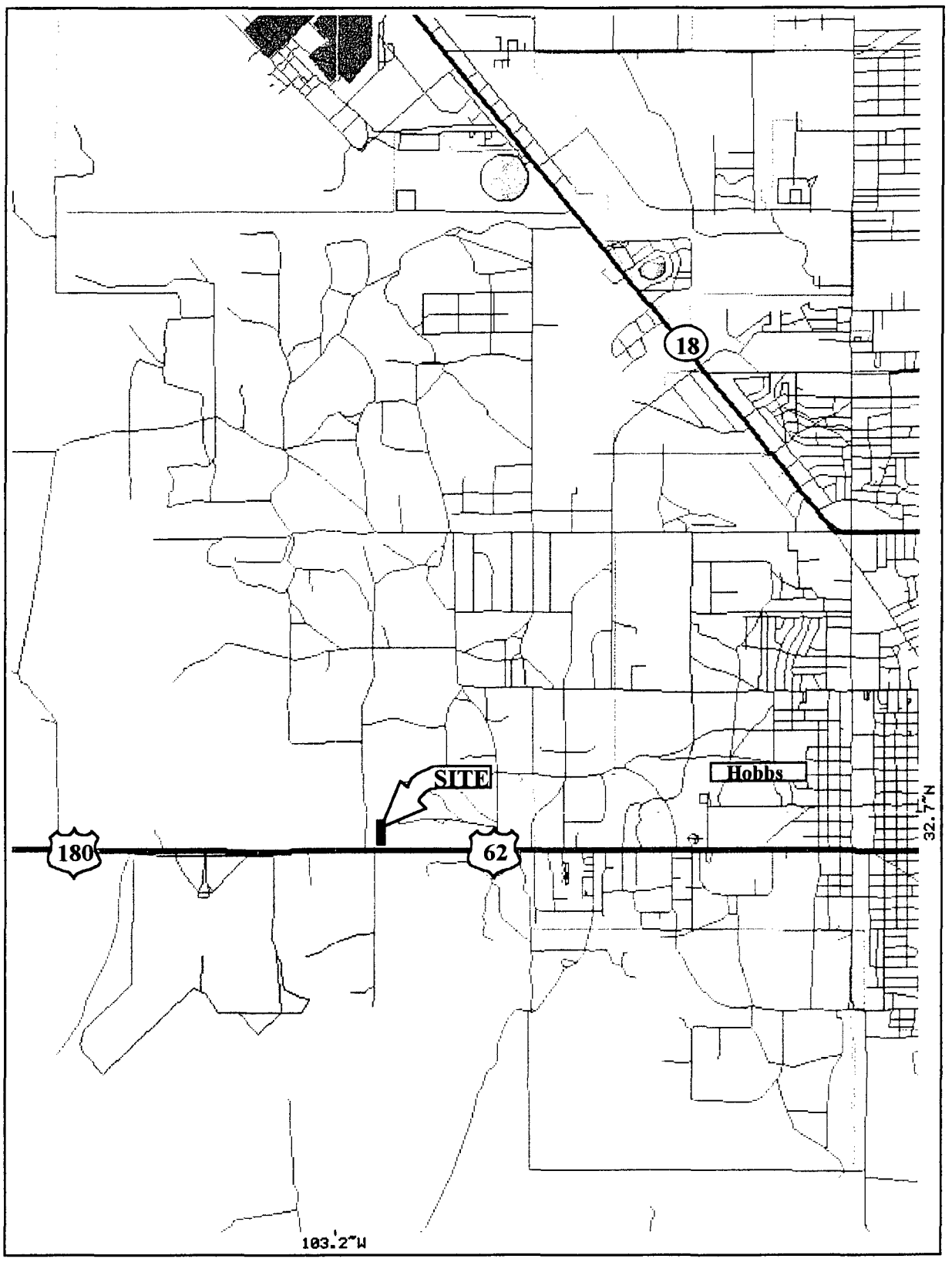
QUALITY CONTROL REVIEWER:

Richard Rexroad
Principal in Charge

TLJ/uak

Figures

FIGURES



BROWN AND CALDWELL HOUSTON, TEXAS	0 0.5 1 miles	TITLE: SITE LOCATION MAP	DATE: 08/24/98
		CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NO.: 6240.01
		SITE LOCATION: HOBBS, NEW MEXICO	FIGURE NO.: 1

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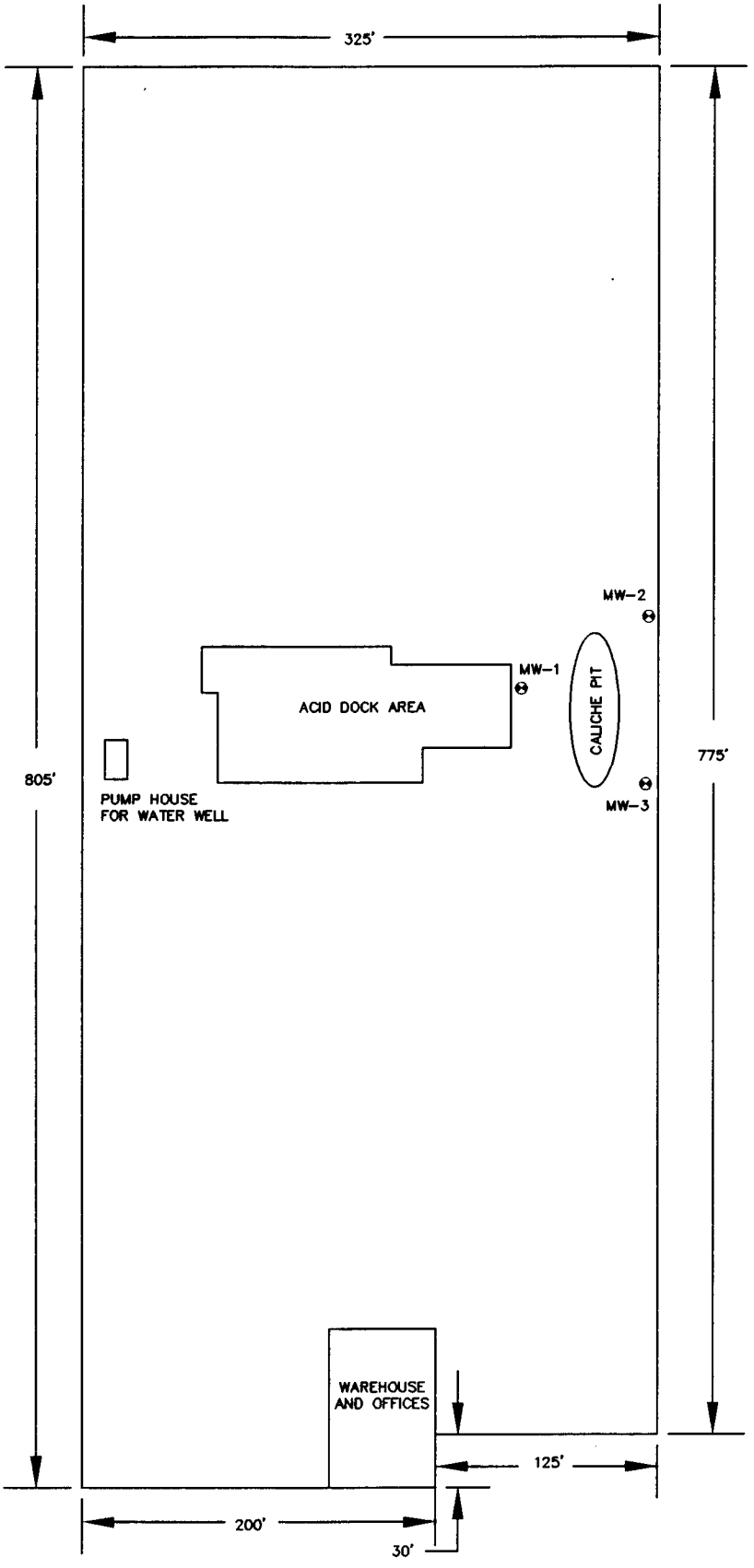


T:\6240.01\SITEMAP 12-29-97 JR

BROWN AND CALDWELL
HOUSTON, TEXAS

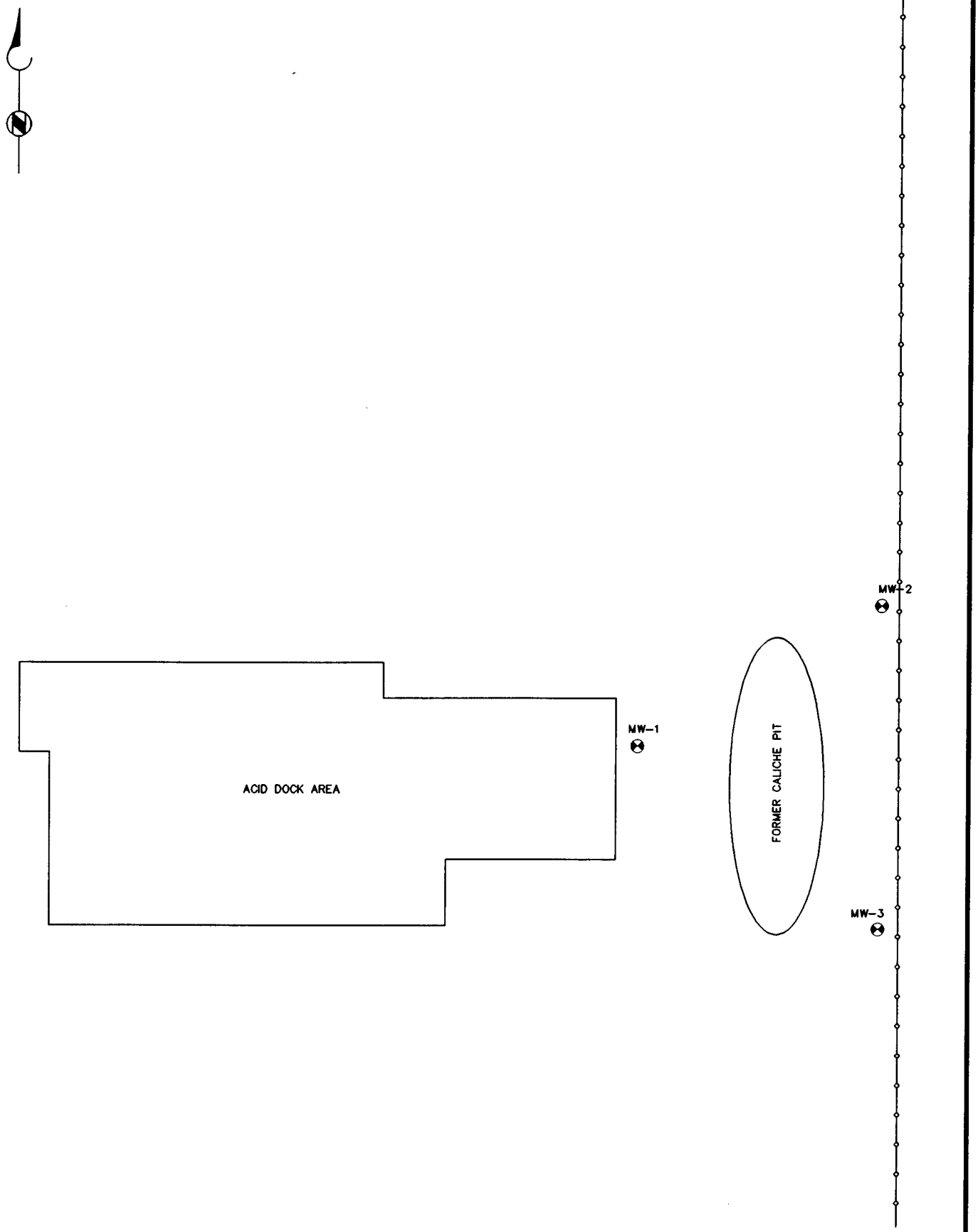
SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 50 100
SCALE: 1" = 100'
DRAWN BY: JR DATE 12/97
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

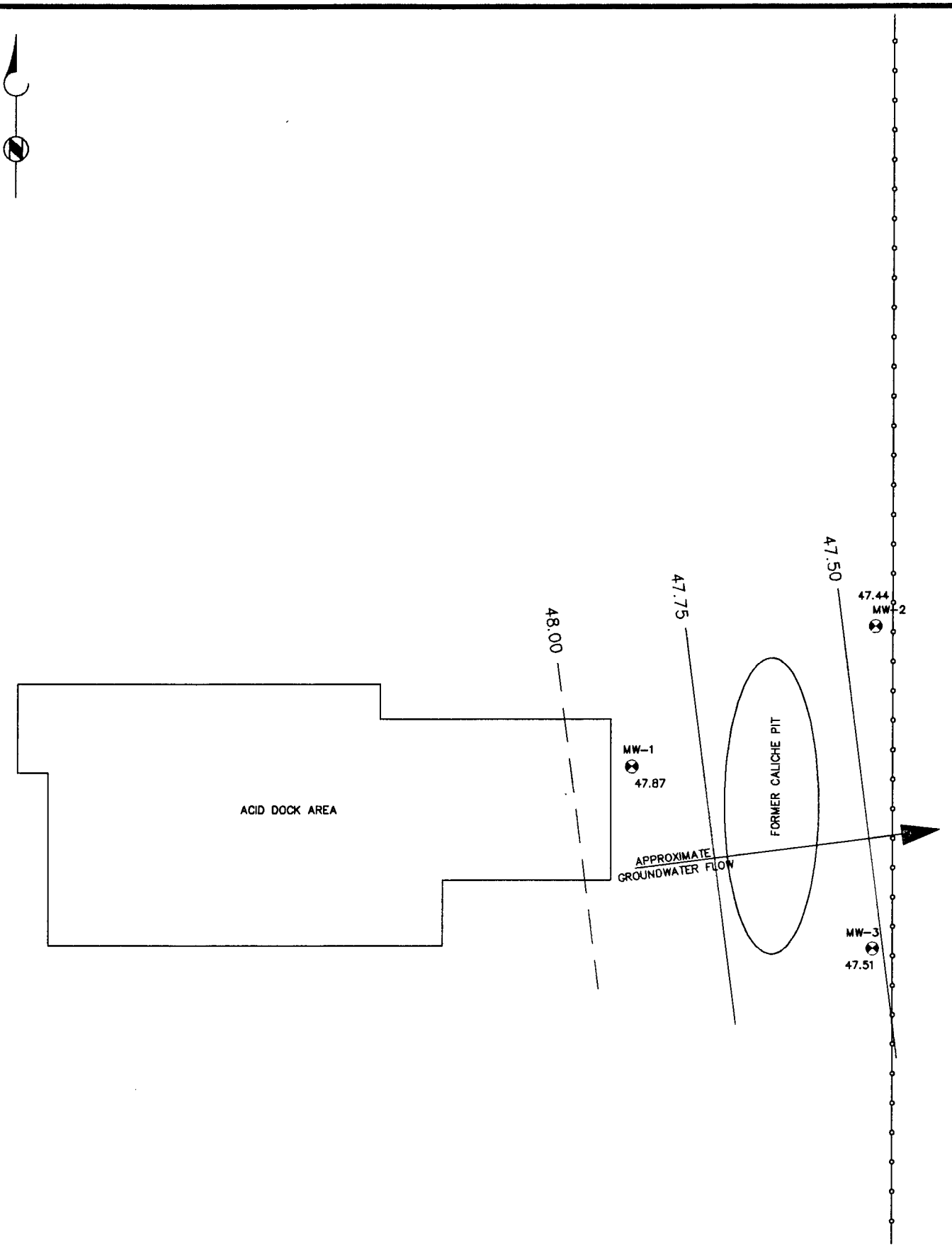
TITLE: SITE PLAN MAP (FORMER NOWSCO FACILITY)
CLIENT: BJ SERVICES COMPANY, U.S.A.
SITE LOCATION: HOBBS, NEW MEXICO

DATE: 12/29/97
PROJECT NUMBER: 6240.01
FIGURE NUMBER: 2



BROWN AND CALDWELL HOUSTON, TEXAS SUBMITTED: _____ DATE: _____ PROJECT MANAGER APPROVED: _____ DATE: _____ BROWN AND CALDWELL	0 20 40 SCALE: 1" = 40' DRAWN BY: JR DATE 1/98 CHK'D BY: ____ DATE ____ APPROVED: ____ DATE ____	TITLE: MONITOR WELL LOCATIONS CLIENT: BJ SERVICES COMPANY, U.S.A. SITE LOCATION: HOBBS, NEW MEXICO	DATE: 01/22/98 PROJECT NUMBER: 6240.01 FIGURE NUMBER: 3

T:\6240\01\6240101 01-22-98 JR



BROWN AND CALDWELL HOUSTON, TEXAS SUBMITTED: _____ DATE: _____ PROJECT MANAGER APPROVED: _____ DATE: _____ BROWN AND CALDWELL	0 20 40 SCALE: 1" = 40' DRAWN BY: JR DATE 1/98 CHK'D BY: ____ DATE ____ APPROVED: ____ DATE ____	TITLE: POTENTIOMETRIC SURFACE MAP FOR JULY 9, 1998 CLIENT: BJ SERVICES COMPANY, U.S.A. (FORMER NOWSCO FACILITY) SITE LOCATION: HOBBS, NEW MEXICO	DATE: 09/10/98 PROJECT NUMBER: 6240.01 FIGURE NUMBER: 4

T:\6240\01\62400102 01-22-98 JR

Tables

TABLES

Table 1
Groundwater Elevation Calculations
BJ Services (former NOWSCO) Facility
Hobbs, New Mexico

Monitor Well Number	Top of Casing Elevation (ft.) [1]	Measurement Date	Depth to Groundwater (ft.)	Groundwater Elevation (ft.) [1]
MW-1	96.15	11/20/97	47.77	48.38
		12/11/97	47.85	48.30
		07/09/98	48.28	47.87
MW-2	95.92	11/20/97	47.98	47.94
		12/11/97	48.06	47.86
		07/09/98	48.48	47.44
MW-3	95.43	11/20/97	47.41	48.02
		12/11/97	47.47	47.96
		07/09/98	47.92	47.51

[1] - Relative to an arbitrary site datum of 100.00 feet.

Table 2
Groundwater Analytical Results
November[1] and December 1997 Sampling Event
BJ Services (former NOWSCO)
Hobbs, New Mexico Facility

Analyte	Sample ID					New Mexico WQCC Standard [3]
	WSW-1 [1]	MW-1	MW-2 [2]	MW-2 (Duplicate)	MW-3	
BTEX-Method 8020 (µg/L)						
Benzene	< 1.0	< 1.0	< 10	< 5.0	< 1.0	10
Toluene	< 1.0	< 1.0	410	370	< 1.0	750
Ethylbenzene	< 1.0	< 1.0	68	57	< 1.0	750
Xylenes	< 1.0	1.8	420	370	< 1.0	620
Metals (mg/L)						
Arsenic	< 0.30	< 0.01	0.017	0.017	< 0.01	0.1
Barium	0.36	0.22	0.33	0.31	< 0.20	1.0
Cadmium	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.01
Chromium	0.082	< 0.010	< 0.010	< 0.010	< 0.010	0.05
Lead	< 0.10	< 0.030	< 0.030	< 0.030	< 0.030	0.05
Mercury	< 0.00020	< 0.00020	0.00020	< 0.00020	< 0.00020	0.002
Selenium	< 0.25	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.05
Silver	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.05
Anions (mg/L)						
Calcium	154	158	215	204	123	NL [4]
Potassium	< 5.0	5.7	11.1	9.3	9.2	NL
Magnesium	25.4	19.3	20.4	19.4	9.9	NL
Sodium	274	241	92.6	88	129	NL
Cations (mg/L)						
Chloride	464	354	218	215	173	250 [5]
Fluoride	3.6	3.3	1.1	1.1	2.2	NL
Nitrate as N	4.1	1.2	1.4	1.4	4.0	NL
o-Phosphate as P	<1.0	<1.0	<1.0	< 1.0	<1.0	NL
Sulfate	159	95.9	92.8	96.9	77.4	600
Alkalinity (mg/L)						
	310	350	400	370	260	NL
PAHs (mg/L)						
	NA [6]	ND [7]	ND	ND	ND	[8]

[1] - WSW = water supply well; this well was sampled on 11/20/98

[2] - Method 8240 Volatile Organics analysis also performed; concentrations for Method 8240 analysis exceed those reported for Method 8020 analysis and are therefore reported - see Appendix D for complete analytical results.

[3] - WQCC = Water Quality Control Commission; units are ug/L for BTEX and mg/L for all other constituents

[4] - NL = Not Listed in New Mexico WQCC standards.

[5] - Applicable to domestic water supply only.

[6] - NA = Not Analyzed

[7] - ND = Not Detected at applicable detection limits; see Laboratory Reports in Appendix D for specific compounds

[8] - total naphthalene plus monomethylnaphthalenes at 0.03 mg/L; benzo-a-pyrene at 0.0007 mg/L.

Table 3
Groundwater Analytical Results
July 1998 Sampling Event [1]
BJ Services (former NOWSCO)
Hobbs, New Mexico Facility

Analyte	Sample ID			New Mexico WQCC Standard [2]
	MW-1	MW-2	MW-3	
BTEX-Method 8020 (µg/L)				
Benzene	< 1.0	< 50	< 1.0	10
Toluene	< 1.0	**1700** [3]	< 1.0	750
Ethylbenzene	< 1.0	170	< 1.0	750
Xylenes	7.4 [4]	**830** [3]	< 1.0	620
Metals (mg/L)				
Arsenic	< 0.010	<0.010	0.010	0.1
Barium	0.44	0.22	< 0.20	1.0
Cadmium	< 0.0050	< 0.0050	< 0.0050	0.01
Chromium	< 0.010	< 0.010	< 0.010	0.05
Lead	< 0.0030	< 0.0030	< 0.0030	0.05
Mercury	0.00027	< 0.0002	< 0.00020	0.002
Selenium	< 0.0050	< 0.0050	< 0.0050	0.05
Silver	< 0.010	< 0.010	< 0.010	0.05
Cations (mg/L)				
Chloride	636	132	142	250 [5]
Fluoride	3.5	NA [6]	NA	NL [7]
Nitrate as N	0.22	NA	NA	NL
o-Phosphate as P	< 1.0	NA	NA	NL
Sulfate	42.3	NA	NA	600

[1] - WSW = water supply well was not sampled due to pump failure

[2] - WQCC = Water Quality Control Commission; units are ug/L for BTEX and mg/L for all other constituents

[3] - Exceeds New Mexico WQCC Standard

[4] - Method 8240 Volatile Organics analysis also performed; concentrations for Method 8240 analysis exceed those reported for Method 8020 analysis and are therefore reported - see Appendix B for complete analytical results.

[5] - Applicable to domestic water supply only.

[6] - NA = Not Analyzed

[7] - NL = Not Listed in New Mexico WQCC standards.

Appendices

APPENDICES

A

APPENDIX A

February 10, 1998 Correspondence from the NMOCD

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

February 10, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-259-015

Mr. Rick N. Johnson
BJ Services Company, U.S.A.
8701 New Trails Drive
Woodlands, Texas 77381

RE: **Soil and Ground Water Assessment of Discharge Plan GW-17 (Formerly Nowsco)**
Hobbs Facility
Lea County, New Mexico

Dear Mr. Johnson:

The New Mexico Oil Conservation Division (OCD) has completed a review of the BJ Services Company, U.S.A. (BJ) "Final Soil and Ground Water Assessment Report" dated January 30, 1998. This report contains a summary of field activities and conclusions and recommendations associated with GW-17. The OCD approves of BJ's recommendations with the following conditions:

1. MW-1 through MW-3 will be sampled for chlorides in addition to BTEX and RCRA metals.

2. The water supply well (WSW-1) will be included in the sampling events.

3. The schedule for sampling will be June 1998 and December 1998. BJ will submit a report to the OCD within 60 of each sampling event. The report will include a description of the actions performed and the results of all sampling activities. A ground water depth and gradient map will be included with the December 1998 report.

4. The OCD will consider closure or future monitoring requirements based on the sample results for 1998.

8. BJ will notify the OCD at least 72 hours in advance of all activities.

9. All original documents will be submitted to the OCD Santa Fe Office with copies to the OCD Hobbs District Office.

Because of the ground water monitoring activities occurring at the facility, the OCD considers the facility to still be active. Therefore, the discharge plan must be renewed for the ground water

monitoring program. The current Discharge plan will expire on April 18, 1998. Please submit an original discharge plan renewal application and one copy along with a discharge plan fee of $740 to OCD Santa Fe Division Office. A copy of the discharge plan renewal application is to be submitted to the OCD Hobbs District Office. Note that the completed and signed application form must be submitted with your discharge plan renewal request. Please make all checks payable to: NMED-Water Quality Management.

If BJ has any questions please contact me at (505)-827-7155.

Sincerely,

Mark Ashley
Geologist

xc: OCD Hobbs Office

B

APPENDIX B

Laboratory Analytical Report

Certificate of Analysis

Quanterra Incorporated
5307 Industrial Oaks Boulevard, Suite 160
Austin, Texas 78735

512 892-6684 Direct
512 892-6652 Fax

Quanterra

ANALYTICAL REPORT

PROJECT NO. 6420.01

BJ-HOBBS(NOWSCO)

Lot #: I8G130130

TIM JENKINS

Brown & Caldwell

QUANTERRA INCORPORATED

Sandra L. Green
Project Manager

August 7, 1998

Quanterra

EXECUTIVE SUMMARY - Detection Highlights

I8G130130

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-1 07/09/98 18:40 001				
Xylenes (total)	4.7	1.0	ug/L	SW846 8020/GRO
Mercury	0.00027	0.00020	mg/L	SW846 7470A
Arsenic	0.0036 B	0.010	mg/L	SW846 6010B
Selenium	0.0022 B	0.0050	mg/L	SW846 6010B
Barium	0.44	0.20	mg/L	SW846 6010B
Calcium	269	5.0	mg/L	SW846 6010B
Potassium	10.5	5.0	mg/L	SW846 6010B
Magnesium	30.2	5.0	mg/L	SW846 6010B
Sodium	216	5.0	mg/L	SW846 6010B
Methylene chloride	3.7 J,B	5.0	ug/L	SW846 8240B
Xylenes (total)	7.4	5.0	ug/L	SW846 8240B
Chloride	636	50.0	mg/L	MCAWW 300.0A
Sulfate	42.3	10.0	mg/L	MCAWW 300.0A
Fluoride	3.5	1.0	mg/L	MCAWW 300.0A
Nitrate	0.22 B,H	0.50	mg/L	MCAWW 300.0A
MW-2 07/09/98 19:30 002				
Toluene	1700	50	ug/L	SW846 8020/GRO
Xylenes (total)	830	50	ug/L	SW846 8020/GRO
Ethylbenzene	170	50	ug/L	SW846 8020/GRO
Arsenic	0.0076 B	0.010	mg/L	SW846 6010B
Selenium	0.0029 B	0.0050	mg/L	SW846 6010B
Barium	0.22	0.20	mg/L	SW846 6010B
Chloride	132	10.0	mg/L	MCAWW 300.0A
MW-3 07/09/98 17:00 003				
Arsenic	0.010	0.010	mg/L	SW846 6010B
Barium	0.11 B	0.20	mg/L	SW846 6010B
Chloride	142	10.0	mg/L	MCAWW 300.0A
FLOOR 07/07/98 16:00 004				
Diesel Range Organics	1600000	36000	ug/kg	SW846 8015B
Gasoline Range Organics	2000000	1100000	ug/kg	SW846 8015B
Arsenic	2.2	1.1	mg/kg	SW846 6010B
Lead	1.6	0.32	mg/kg	SW846 6010B
Barium	103	21.1	mg/kg	SW846 6010B
Chromium	3.3	1.1	mg/kg	SW846 6010B
2-Methylnaphthalene	17000 E	700	ug/kg	SW846 8270C
2-Methylnaphthalene	18000 D	1700	ug/kg	SW846 8270C
Naphthalene	14000 E	700	ug/kg	SW846 8270C

(Continued on next page)

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EXECUTIVE SUMMARY - Detection Highlights

I8G130130

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
FLOOR 07/07/98 16:00 004				
Naphthalene	15000 D	1700	ug/kg	SW846 8270C
Phenanthrene	1100	700	ug/kg	SW846 8270C
Toluene	90 J	620	ug/kg	SW846 8240B
Xylenes (total)	3200	620	ug/kg	SW846 8240B
Percent Moisture	5.2	0.50	%	ASTM D 2216-90
SW-W 07/07/98 16:15 005				
Diesel Range Organics	680000	37000	ug/kg	SW846 8015B
Percent Moisture	7.2	0.50	%	ASTM D 2216-90
SW-E 07/07/98 17:00 006				
Diesel Range Organics	45000	1800	ug/kg	SW846 8015B
Gasoline Range Organics	5500 E	110	ug/kg	SW846 8015B
Xylenes (total)	0.59 J	1.1	ug/kg	SW846 8020/GRO
Percent Moisture	7.7	0.50	%	ASTM D 2216-90
SW-N 07/07/98 16:45 007				
Diesel Range Organics	2100000	90000	ug/kg	SW846 8015B
Ethylbenzene	620	110	ug/kg	SW846 8020/GRO
Toluene	460	110	ug/kg	SW846 8020/GRO
Xylenes (total)	7400	110	ug/kg	SW846 8020/GRO
Percent Moisture	6.0	0.50	%	ASTM D 2216-90
SW-S 07/07/98 16:30 008				
Diesel Range Organics	30000	1900	ug/kg	SW846 8015B
Gasoline Range Organics	4600	110	ug/kg	SW846 8015B
Toluene	1.3	1.1	ug/kg	SW846 8020/GRO
Xylenes (total)	15	1.1	ug/kg	SW846 8020/GRO
Percent Moisture	9.0	0.50	%	ASTM D 2216-90

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ANALYTICAL METHODS SUMMARY

I8G130130

PARAMETER	ANALYTICAL METHOD
Chloride	MCAWW 300.0A
Extractable Petroleum Hydrocarbons	SW846 8015B
Fluoride	MCAWW 300.0A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A
Method for Determination of Water Content of Soil	ASTM D 2216-90
Nitrate as N	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Sulfate	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Volatile Organics by GC/MS	SW846 8240B
Volatile and Gasoline Range Organics (PID/FID)	SW846 8020/GRO
Volatile Petroleum Hydrocarbons	SW846 8015B

References:

ASTM Annual Book Of ASTM Standards.

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

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QC DATA ASSOCIATION SUMMARY

I8G130130

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	MCAWW 300.0A		8197282	8197129
	WATER	MCAWW 300.0A		8197283	8197127
	WATER	MCAWW 300.0A		8196153	8196035
	WATER	MCAWW 300.0A		8196152	8196034
	WATER	MCAWW 300.0A		8196149	8196032
	WATER	MCAWW 300.0A		8196150	8196033
	WATER	SW846 8020/GRO		8204195	8204062
	WATER	SW846 8240B		8210299	8205111
	WATER	SW846 7470A		8197261	8197113
	WATER	SW846 8270C		8194287	
	WATER	SW846 6010B		8197170	8197050
002	WATER	MCAWW 300.0A		8202239	8202084
	WATER	SW846 8020/GRO		8204195	8204062
	WATER	SW846 7470A		8197261	8197113
	WATER	SW846 6010B		8197170	8197050
003	WATER	MCAWW 300.0A		8202239	8202084
	WATER	SW846 8020/GRO		8204195	8204062
	WATER	SW846 7470A		8197261	8197113
	WATER	SW846 6010B		8197170	8197050
004	SOLID	SW846 8015B		8194265	8194117
	SOLID	SW846 8015B		8210151	8210030
	SOLID	SW846 8240B		8198301	8198147
	SOLID	ASTM D 2216-90		8197212	8197075
	SOLID	SW846 7471A		8199137	8199028
	SOLID	SW846 8270C		8201292	8201126
	SOLID	SW846 6010B		8196170	8196046
005	SOLID	SW846 8015B		8194265	8194117
	SOLID	SW846 8015B		8210151	8210030
	SOLID	ASTM D 2216-90		8197212	8197075
006	SOLID	SW846 8015B		8194265	8194117
	SOLID	SW846 8015B		8207136	8207016
	SOLID	SW846 8015B		8210151	8210030
	SOLID	SW846 8020/GRO		8207135	8207015
	SOLID	ASTM D 2216-90		8197212	8197075
007	SOLID	SW846 8015B		8194265	8194117
	SOLID	SW846 8015B		8210151	8210030
	SOLID	SW846 8020/GRO		8210187	
	SOLID	ASTM D 2216-90		8197212	8197075

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QC DATA ASSOCIATION SUMMARY

I8G130130

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
008	SOLID	SW846 8015B		8194265	8194117
	SOLID	SW846 8015B		8207136	8207016
	SOLID	SW846 8020/GRO		8207135	8207015
	SOLID	ASTM D 2216-90		8197212	8197075

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SAMPLE SUMMARY

I8G130130

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
CJQ1F	001	MW-1	07/09/98	18:40
CJQ24	002	MW-2	07/09/98	19:30
CJQ29	003	MW-3	07/09/98	17:00
CJQ2A	004	FLOOR	07/07/98	16:00
CJQ2D	005	SW-W	07/07/98	16:15
CJQ2F	006	SW-E	07/07/98	17:00
CJQ2G	007	SW-N	07/07/98	16:45
CJQ2H	008	SW-S	07/07/98	16:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-1

GC Volatiles

Lot-Sample #...:	I8G130130-001	**Work Order #...:**	CJQ1F10J	**Matrix.....:**	WATER
Date Sampled...:	07/09/98 18:40	**Date Received..:**	07/11/98		
Prep Date.....:	07/17/98	**Analysis Date..:**	07/17/98		
Prep Batch #...:	8204195	**Analysis Time..:**	19:37		
Dilution Factor:	1	**Method.....:**	SW846 8020/GRO		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	**4.7**	**1.0**	**ug/L**
Ethylbenzene	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	101	(75 - 125)

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: I8G130130-001 **Work Order #...:** CJQ1F10K **Matrix.....:** WATER
Date Sampled...: 07/09/98 18:40 **Date Received..:** 07/11/98
Prep Date.....: 07/23/98 **Analysis Date..:** 07/23/98
Prep Batch #...: 8210299 **Analysis Time..:** 23:39
Dilution Factor: 1 **Method.....:** SW846 8240B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	10	ug/L
Dibromochloromethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethene (total)	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	20	ug/L
Methylene chloride	**3.7 J,B**	**5.0**	**ug/L**
4-Methyl-2-pentanone	ND	20	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
Vinyl chloride	ND	10	ug/L
Xylenes (total)	**7.4**	**5.0**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	104	(86 - 115)
1,2-Dichloroethane-d4	92	(76 - 114)
Toluene-d8	103	(88 - 110)

(Continued on next page)

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: I8G130130-001 **Work Order #...:** CJQ1F10K **Matrix.....:** WATER

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-1

GC/MS Semivolatiles

Lot-Sample #...: I8G130130-001 **Work Order #...:** CJQ1F108 **Matrix.....:** WATER
Date Sampled...: 07/09/98 18:40 **Date Received..:** 07/11/98
Prep Date.....: 07/13/98 **Analysis Date..:** 07/18/98
Prep Batch #...: 8194287 **Analysis Time..:** 19:58
Dilution Factor: 1 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benz(a)anthracene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
bis(2-Chloroethyl) ether	ND	10	ug/L
bis(2-Chloroisopropyl) ether	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Chrysene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Di-n-butyl phthalate	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
2,4-Dichlorophenol	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
2,4-Dinitrophenol	ND	50	ug/L

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Quanterra

BROWN & CALDWELL

Client Sample ID: MW-1

GC/MS Semivolatiles

Lot-Sample #...: I8G130130-001 **Work Order #...:** CJQ1F108 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
Hexachlorocyclopentadiene	ND	50	ug/L
Hexachloroethane	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
Naphthalene	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
3-Nitroaniline	ND	50	ug/L
4-Nitroaniline	ND	50	ug/L
Nitrobenzene	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
4-Nitrophenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L
1,2,4-Trichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	51	(21 - 100)
Phenol-d5	59	(10 - 94)
Nitrobenzene-d5	56	(35 - 114)
2-Fluorobiphenyl	58	(43 - 116)
2,4,6-Tribromophenol	82	(10 - 123)
Terphenyl-d14	69	(33 - 141)

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...: I8G130130-002 **Work Order #...:** CJQ2410C **Matrix.....:** WATER
Date Sampled...: 07/09/98 19:30 **Date Received..:** 07/11/98
Prep Date.....: 07/17/98 **Analysis Date..:** 07/17/98
Prep Batch #...: 8204195 **Analysis Time..:** 19:01
Dilution Factor: 50 **Method.....:** SW846 8020/GRO

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	50	ug/L
Toluene	**1700**	**50**	**ug/L**
Xylenes (total)	**830**	**50**	**ug/L**
Ethylbenzene	**170**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	98	(75 - 125)

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-3

GC Volatiles

Lot-Sample #...: I8G130130-003 **Work Order #...:** CJQ2910C **Matrix.....:** WATER
Date Sampled...: 07/09/98 17:00 **Date Received..:** 07/11/98
Prep Date.....: 07/17/98 **Analysis Date..:** 07/17/98
Prep Batch #...: 8204195 **Analysis Time..:** 20:14
Dilution Factor: 1 **Method.....:** SW846 8020/GRO

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	100	(75 - 125)

Quanterra

BROWN & CALDWELL

Client Sample ID: FLOOR

GC Semivolatiles

Lot-Sample #...:	I8G130130-004	**Work Order #...:**	CJQ2A10C	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:00	**Date Received..:**	07/11/98		
Prep Date.....:	07/13/98	**Analysis Date..:**	07/15/98		
Prep Batch #...:	8194265	**Analysis Time..:**	10:35		
Dilution Factor:	20				
% Moisture.....:	5.2	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**1600000**	**36000**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	NC,DIL	(40 - 144)
Dotriacontane	NC,DIL	(42 - 159)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

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BROWN & CALDWELL

Client Sample ID: FLOOR

GC Volatiles

Lot-Sample #...:	I8G130130-004	**Work Order #...:**	CJQ2A10D	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:00	**Date Received..:**	07/11/98		
Prep Date.....:	07/21/98	**Analysis Date..:**	07/21/98		
Prep Batch #...:	8210151	**Analysis Time..:**	22:49		
Dilution Factor:	1000				
% Moisture.....:	5.2	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	**2000000**	**1100000**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	NC,DIL	(75 - 125)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: FLOOR

GC/MS Volatiles

Lot-Sample #...: I8G130130-004 **Work Order #...:** CJQ2A10E **Matrix.....:** SOLID
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
Prep Date.....: 07/16/98 **Analysis Date..:** 07/17/98
Prep Batch #...: 8198301 **Analysis Time..:** 00:17
Dilution Factor: 1
% Moisture.....: 5.2 **Method.....:** SW846 8240B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2500	ug/kg
Benzene	ND	620	ug/kg
Bromodichloromethane	ND	620	ug/kg
Bromoform	ND	620	ug/kg
Bromomethane	ND	1200	ug/kg
2-Butanone	ND	2500	ug/kg
Carbon disulfide	ND	620	ug/kg
Carbon tetrachloride	ND	620	ug/kg
Chlorobenzene	ND	620	ug/kg
Chloroethane	ND	1200	ug/kg
Chloroform	ND	620	ug/kg
Chloromethane	ND	1200	ug/kg
Dibromochloromethane	ND	620	ug/kg
1,1-Dichloroethane	ND	620	ug/kg
1,2-Dichloroethane	ND	620	ug/kg
1,1-Dichloroethene	ND	620	ug/kg
1,2-Dichloroethene (total)	ND	620	ug/kg
1,2-Dichloropropane	ND	620	ug/kg
cis-1,3-Dichloropropene	ND	620	ug/kg
trans-1,3-Dichloropropene	ND	620	ug/kg
Ethylbenzene	ND	620	ug/kg
2-Hexanone	ND	2500	ug/kg
Methylene chloride	ND	620	ug/kg
4-Methyl-2-pentanone	ND	2500	ug/kg
Styrene	ND	620	ug/kg
1,1,2,2-Tetrachloroethane	ND	620	ug/kg
Tetrachloroethene	ND	620	ug/kg
Toluene	**90 J**	**620**	**ug/kg**
1,1,1-Trichloroethane	ND	620	ug/kg
1,1,2-Trichloroethane	ND	620	ug/kg
Trichloroethene	ND	620	ug/kg
Vinyl chloride	ND	1200	ug/kg
Xylenes (total)	**3200**	**620**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	104	(74 - 121)
1,2-Dichloroethane-d4	96	(70 - 121)
Toluene-d8	105	(81 - 117)

(Continued on next page)

Quanterra

BROWN & CALDWELL

Client Sample ID: FLOOR

GC/MS Volatiles

Lot-Sample #...: I8G130130-004 **Work Order #...:** CJQ2A10E **Matrix.....:** SOLID

NOTE(S):

J Estimated result. Result is less than RL.

Quanterra

BROWN & CALDWELL

Client Sample ID: FLOOR

GC/MS Semivolatiles

Lot-Sample #...: I8G130130-004 **Work Order #...:** CJQ2A202 **Matrix.....:** SOLID
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
Prep Date.....: 07/13/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8201292 **Analysis Time..:** 17:37
Dilution Factor: 2
% Moisture.....: 5.2 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	700	ug/kg
Acenaphthylene	ND	700	ug/kg
Anthracene	ND	700	ug/kg
Benz(a)anthracene	ND	700	ug/kg
Benzo(b)fluoranthene	ND	700	ug/kg
Benzo(k)fluoranthene	ND	700	ug/kg
Benzo(ghi)perylene	ND	700	ug/kg
Benzo(a)pyrene	ND	700	ug/kg
bis(2-Chloroethoxy) methane	ND	700	ug/kg
bis(2-Chloroethyl) ether	ND	700	ug/kg
bis(2-Chloroisopropyl) ether	ND	700	ug/kg
bis(2-Ethylhexyl) phthalate	ND	700	ug/kg
4-Bromophenyl phenyl ether	ND	700	ug/kg
Butyl benzyl phthalate	ND	700	ug/kg
4-Chloroaniline	ND	700	ug/kg
4-Chloro-3-methylphenol	ND	700	ug/kg
2-Chloronaphthalene	ND	700	ug/kg
2-Chlorophenol	ND	700	ug/kg
4-Chlorophenyl phenyl ether	ND	700	ug/kg
Chrysene	ND	700	ug/kg
Dibenz(a,h)anthracene	ND	700	ug/kg
Dibenzofuran	ND	700	ug/kg
Di-n-butyl phthalate	ND	700	ug/kg
1,2-Dichlorobenzene	ND	700	ug/kg
1,3-Dichlorobenzene	ND	700	ug/kg
1,4-Dichlorobenzene	ND	700	ug/kg
3,3'-Dichlorobenzidine	ND	3400	ug/kg
2,4-Dichlorophenol	ND	700	ug/kg
Diethyl phthalate	ND	700	ug/kg
2,4-Dimethylphenol	ND	700	ug/kg
Dimethyl phthalate	ND	700	ug/kg
4,6-Dinitro-2-methylphenol	ND	3400	ug/kg

(Continued on next page)

Quanterra

BROWN & CALDWELL

Client Sample ID: FLOOR

GC/MS Semivolatiles

Lot-Sample #...: I8G130130-004 **Work Order #...:** CJQ2A202 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	3400	ug/kg
2,4-Dinitrotoluene	ND	700	ug/kg
2,6-Dinitrotoluene	ND	700	ug/kg
Di-n-octyl phthalate	ND	700	ug/kg
Fluoranthene	ND	700	ug/kg
Fluorene	ND	700	ug/kg
Hexachlorobenzene	ND	700	ug/kg
Hexachlorobutadiene	ND	700	ug/kg
Hexachlorocyclopentadiene	ND	3400	ug/kg
Hexachloroethane	ND	700	ug/kg
Indeno(1,2,3-cd)pyrene	ND	700	ug/kg
Isophorone	ND	700	ug/kg
2-Methylnaphthalene	**17000 E**	**700**	**ug/kg**
2-Methylphenol	ND	700	ug/kg
4-Methylphenol	ND	700	ug/kg
Naphthalene	**14000 E**	**700**	**ug/kg**
2-Nitroaniline	ND	3400	ug/kg
3-Nitroaniline	ND	3400	ug/kg
4-Nitroaniline	ND	3400	ug/kg
Nitrobenzene	ND	700	ug/kg
2-Nitrophenol	ND	700	ug/kg
4-Nitrophenol	ND	3400	ug/kg
N-Nitrosodiphenylamine	ND	700	ug/kg
N-Nitrosodi-n-propylamine	ND	700	ug/kg
Pentachlorophenol	ND	3400	ug/kg
Phenanthrene	**1100**	**700**	**ug/kg**
Phenol	ND	700	ug/kg
Pyrene	ND	700	ug/kg
1,2,4-Trichlorobenzene	ND	700	ug/kg
2,4,5-Trichlorophenol	ND	700	ug/kg
2,4,6-Trichlorophenol	ND	700	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	67	(25 - 121)
Phenol-d5	74	(24 - 113)
Nitrobenzene-d5	71	(23 - 120)
2-Fluorobiphenyl	82	(30 - 115)
2,4,6-Tribromophenol	90	(19 - 122)
Terphenyl-d14	71	(18 - 137)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

E Estimated result. Result concentration exceeds the calibration range.

Quanterra

BROWN & CALDWELL

Client Sample ID: FLOOR

GC/MS Semivolatiles

Lot-Sample #...:	I8G130130-004	**Work Order #...:**	CJQ2A302	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:00	**Date Received..:**	07/11/98		
Prep Date.....:	07/13/98	**Analysis Date..:**	07/23/98		
Prep Batch #...:	8201292	**Analysis Time..:**	12:43		
Dilution Factor:	5				
% Moisture.....:	5.2	**Method.....:**	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2-Methylnaphthalene	**18000 D**	**1700**	**ug/kg**
Naphthalene	**15000 D**	**1700**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	67	(25 - 121)
Phenol-d5	76	(24 - 113)
Nitrobenzene-d5	73	(23 - 120)
2-Fluorobiphenyl	82	(30 - 115)
2,4,6-Tribromophenol	84	(19 - 122)
Terphenyl-d14	78	(18 - 137)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

D Result was obtained from the analysis of a dilution.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-W

GC Semivolatiles

Lot-Sample #...:	I8G130130-005	**Work Order #...:**	CJQ2D102	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:15	**Date Received..:**	07/11/98		
Prep Date.....:	07/13/98	**Analysis Date..:**	07/15/98		
Prep Batch #...:	8194265	**Analysis Time..:**	13:20		
Dilution Factor:	20				
% Moisture.....:	7.2	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**680000**	**37000**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	NC,DIL	(40 - 144)
Dotriacontane	NC,DIL	(42 - 159)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-W

GC Volatiles

Lot-Sample #...:	I8G130130-005	**Work Order #...:**	CJQ2D103	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:15	**Date Received..:**	07/11/98		
Prep Date.....:	07/21/98	**Analysis Date..:**	07/21/98		
Prep Batch #...:	8210151	**Analysis Time..:**	23:27		
Dilution Factor:	500				
% Moisture.....:	7.2	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	54000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	NC,DIL	(75 - 125)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-E

GC Semivolatiles

Lot-Sample #...:	I8G130130-006	**Work Order #...:**	CJQ2F102	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 17:00	**Date Received..:**	07/11/98		
Prep Date.....:	07/13/98	**Analysis Date..:**	07/14/98		
Prep Batch #...:	8194265	**Analysis Time..:**	21:44		
Dilution Factor:	1				
% Moisture.....:	7.7	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**45000**	**1800**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	95	(40 - 144)
Dotriacontane	101	(42 - 159)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-E

GC Volatiles

Lot-Sample #...:	I8G130130-006	**Work Order #...:**	CJQ2F103	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 17:00	**Date Received..:**	07/11/98		
Prep Date.....:	07/21/98	**Analysis Date..:**	07/21/98		
Prep Batch #...:	8207136	**Analysis Time..:**	22:02		
Dilution Factor:	1				
% Moisture.....:	7.7	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	**5500 E**	**110**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	88	(75 - 125)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

E Estimated result. Result concentration exceeds the calibration range.

Sample over cal and will be rerun medium level.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-E

GC Volatiles

Lot-Sample #...: I8G130130-006	**Work Order #...:** CJQ2F203	**Matrix.....:** SOLID	
Date Sampled...: 07/07/98 17:00	**Date Received..:** 07/11/98		
Prep Date.....: 07/21/98	**Analysis Date..:** 07/21/98		
Prep Batch #...: 8210151	**Analysis Time..:** 20:37		
Dilution Factor: 100			
% Moisture.....: 7.7	**Method.....:** SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5400	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	101	(75 - 125)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-E

GC Volatiles

Lot-Sample #...:	I8G130130-006	**Work Order #...:**	CJQ2F104	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 17:00	**Date Received..:**	07/11/98		
Prep Date.....:	07/21/98	**Analysis Date..:**	07/21/98		
Prep Batch #...:	8207135	**Analysis Time..:**	22:02		
Dilution Factor:	1				
% Moisture.....:	7.7	**Method.....:**	SW846 8020/GRO		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.1	ug/kg
Ethylbenzene	ND	1.1	ug/kg
Toluene	ND	1.1	ug/kg
Xylenes (total)	**0.59 J**	**1.1**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	101	(75 - 125)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-N

GC Semivolatiles

Lot-Sample #...:	I8G130130-007	**Work Order #...:**	CJQ2G102	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:45	**Date Received..:**	07/11/98		
Prep Date.....:	07/13/98	**Analysis Date..:**	07/15/98		
Prep Batch #...:	8194265	**Analysis Time..:**	13:53		
Dilution Factor:	50				
% Moisture.....:	6.0	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**2100000**	**90000**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	NC,DIL	(40 - 144)
Dotriacontane	NC,DIL	(42 - 159)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-N

GC Volatiles

Lot-Sample #...:	I8G130130-007	**Work Order #...:**	CJQ2G103	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:45	**Date Received..:**	07/11/98		
Prep Date.....:	07/21/98	**Analysis Date..:**	07/21/98		
Prep Batch #...:	8210151	**Analysis Time..:**	22:11		
Dilution Factor:	2000				
% Moisture.....:	6.0	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	11000000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	NC,DIL	(75 - 125)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-N

GC Volatiles

Lot-Sample #...:	I8G130130-007	**Work Order #...:**	CJQ2G104	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:45	**Date Received..:**	07/11/98		
Prep Date.....:	07/21/98	**Analysis Date..:**	07/22/98		
Prep Batch #...:	8210187	**Analysis Time..:**	11:57		
Dilution Factor:	100				
% Moisture.....:	6.0	**Method.....:**	SW846 8020/GRO		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	110	ug/kg
Ethylbenzene	**620**	**110**	**ug/kg**
Toluene	**460**	**110**	**ug/kg**
Xylenes (total)	**7400**	**110**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	152 *	(75 - 125)

NOTE(S):

* Surrogate recovery is outside stated control limits.

The surrogate recovery in the sample is outside control limits due to confirmed matrix effect.

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-S

GC Semivolatiles

Lot-Sample #...:	I8G130130-008	**Work Order #...:**	CJQ2H102	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:30	**Date Received..:**	07/11/98		
Prep Date.....:	07/13/98	**Analysis Date..:**	07/14/98		
Prep Batch #...:	8194265	**Analysis Time..:**	22:49		
Dilution Factor:	1				
% Moisture.....:	9.0	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**30000**	**1900**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	81	(40 - 144)
Dotriacontane	92	(42 - 159)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-S

GC Volatiles

Lot-Sample #...:	I8G130130-008	**Work Order #...:**	CJQ2H103	**Matrix.....:**	SOLID
Date Sampled...:	07/07/98 16:30	**Date Received..:**	07/11/98		
Prep Date.....:	07/21/98	**Analysis Date..:**	07/21/98		
Prep Batch #...:	8207136	**Analysis Time..:**	22:40		
Dilution Factor:	1				
% Moisture.....:	9.0	**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	**4600**	**110**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	89	(75 - 125)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-S

GC Volatiles

Lot-Sample #...: I8G130130-008 **Work Order #...:** CJQ2H104 **Matrix.....:** SOLID
Date Sampled...: 07/07/98 16:30 **Date Received..:** 07/11/98
Prep Date.....: 07/21/98 **Analysis Date..:** 07/21/98
Prep Batch #...: 8207135 **Analysis Time..:** 22:40
Dilution Factor: 1
% Moisture.....: 9.0 **Method.....:** SW846 8020/GRO

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.1	ug/kg
Ethylbenzene	ND	1.1	ug/kg
Toluene	**1.3**	**1.1**	**ug/kg**
Xylenes (total)	**15**	**1.1**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	105	(75 - 125)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-1

General Chemistry

Lot-Sample #...: I8G130130-001 **Work Order #...:** CJQ1F **Matrix.....:** WATER
Date Sampled...: 07/09/98 18:40 **Date Received..:** 07/11/98

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	**636**	**50.0**	**mg/L**	**MCAWW 300.0A**	**07/16/98**	**8197282**
	Dilution Factor: 50		Analysis Time..: 10:04			
Fluoride	**3.5**	**1.0**	**mg/L**	**MCAWW 300.0A**	**07/14/98**	**8196153**
	Dilution Factor: 1		Analysis Time..: 08:46			
Nitrate	**0.22 B,H**	**0.50**	**mg/L**	**MCAWW 300.0A**	**07/14/98**	**8196152**
	Dilution Factor: 1		Analysis Time..: 08:46			
Nitrite	ND G,H	10.0	mg/L	MCAWW 300.0A	07/14/98	8196150
	Dilution Factor: 20		Analysis Time..: 10:34			
Phosphate as P Ortho	ND H	1.0	mg/L	MCAWW 300.0A	07/14/98	8196149
	Dilution Factor: 1		Analysis Time..: 08:46			
Sulfate	**42.3**	**10.0**	**mg/L**	**MCAWW 300.0A**	**07/16/98**	**8197283**
	Dilution Factor: 10		Analysis Time..: 10:36			

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

H The sample was prepared or analyzed after the EPA recommended holding time had been exceeded.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-2

General Chemistry

Lot-Sample #...: I8G130130-002 **Work Order #...:** CJQ24 **Matrix.....:** WATER
Date Sampled...: 07/09/98 19:30 **Date Received..:** 07/11/98

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	**132**	**10.0**	**mg/L**	**MCAWW 300.0A**	**07/20/98**	**8202239**
	Dilution Factor: 10			Analysis Time..: 11:07		

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-3

General Chemistry

Lot-Sample #...: I8G130130-003 **Work Order #...:** CJQ29 **Matrix.....:** WATER
Date Sampled...: 07/09/98 17:00 **Date Received..:** 07/11/98

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	142	10.0	mg/L	MCAWW 300.0A	07/20/98	8202239

Dilution Factor: 10 Analysis Time..: 10:56

Quanterra

BROWN & CALDWELL

Client Sample ID: FLOOR

General Chemistry

Lot-Sample #...: I8G130130-004 **Work Order #...:** CJQ2A **Matrix.....:** SOLID
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
% Moisture.....: 5.2

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	**5.2**	**0.50**	**%**	**ASTM D 2216-90**	**07/16-07/17/98**	**8197212**
	Dilution Factor: 1			Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-W

General Chemistry

Lot-Sample #...: I8G130130-005 **Work Order #...:** CJQ2D **Matrix.....:** SOLID
Date Sampled...: 07/07/98 16:15 **Date Received..:** 07/11/98
% Moisture.....: 7.2

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	**7.2**	**0.50**	**%**	**ASTM D 2216-90**	**07/16-07/17/98**	**8197212**

Dilution Factor: 1 Analysis Time..: 09:00

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-E

General Chemistry

Lot-Sample #...: I8G130130-006 **Work Order #...:** CJQ2F **Matrix.....:** SOLID
Date Sampled...: 07/07/98 17:00 **Date Received..:** 07/11/98
% Moisture.....: 7.7

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	**7.7**	**0.50**	**%**	**ASTM D 2216-90**	**07/16-07/17/98**	**8197212**

Dilution Factor: 1 Analysis Time..: 09:00

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-N

General Chemistry

Lot-Sample #...: I8G130130-007 **Work Order #...:** CJQ2G **Matrix.....:** SOLID
Date Sampled...: 07/07/98 16:45 **Date Received..:** 07/11/98
% Moisture.....: 6.0

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	**6.0**	**0.50**	**%**	**ASTM D 2216-90**	**07/16-07/17/98**	**8197212**

Dilution Factor: 1 Analysis Time..: 09:00

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: SW-S

General Chemistry

Lot-Sample #...: I8G130130-008 **Work Order #...:** CJQ2H **Matrix.....:** SOLID
Date Sampled...: 07/07/98 16:30 **Date Received..:** 07/11/98
% Moisture.....: 9.0

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	**9.0**	**0.50**	**%**	**ASTM D 2216-90**	**07/16-07/17/98**	**8197212**

Dilution Factor: 1 Analysis Time..: 09:00

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-1

TOTAL Metals

Lot-Sample #...: I8G130130-001 **Matrix.....:** WATER
Date Sampled...: 07/09/98 18:40 **Date Received..:** 07/11/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8197170						
Arsenic	**0.0036 B**	**0.010**	**mg/L**	**SW846 6010B**	**07/16-07/20/98**	**CJQ1F10E**
		Dilution Factor: 1		Analysis Time..: 15:51		
Lead	ND	0.0030	mg/L	SW846 6010B	07/16-07/20/98	CJQ1F10F
		Dilution Factor: 1		Analysis Time..: 15:51		
Selenium	**0.0022 B**	**0.0050**	**mg/L**	**SW846 6010B**	**07/16-07/20/98**	**CJQ1F10G**
		Dilution Factor: 1		Analysis Time..: 15:51		
Silver	ND	0.010	mg/L	SW846 6010B	07/16-07/20/98	CJQ1F109
		Dilution Factor: 1		Analysis Time..: 15:51		
Barium	**0.44**	**0.20**	**mg/L**	**SW846 6010B**	**07/16-07/20/98**	**CJQ1F10A**
		Dilution Factor: 1		Analysis Time..: 15:51		
Calcium	**269**	**5.0**	**mg/L**	**SW846 6010B**	**07/16-07/23/98**	**CJQ1F10L**
		Dilution Factor: 1		Analysis Time..: 16:07		
Cadmium	ND	0.0050	mg/L	SW846 6010B	07/16-07/20/98	CJQ1F10C
		Dilution Factor: 1		Analysis Time..: 15:51		
Chromium	ND	0.010	mg/L	SW846 6010B	07/16-07/20/98	CJQ1F10D
		Dilution Factor: 1		Analysis Time..: 15:51		
Potassium	**10.5**	**5.0**	**mg/L**	**SW846 6010B**	**07/16-07/23/98**	**CJQ1F10M**
		Dilution Factor: 1		Analysis Time..: 16:07		
Magnesium	**30.2**	**5.0**	**mg/L**	**SW846 6010B**	**07/16-07/23/98**	**CJQ1F10N**
		Dilution Factor: 1		Analysis Time..: 16:07		
Sodium	**216**	**5.0**	**mg/L**	**SW846 6010B**	**07/16-07/23/98**	**CJQ1F10P**
		Dilution Factor: 1		Analysis Time..: 16:07		
Prep Batch #...: 8197261						
Mercury	**0.00027**	**0.00020**	**mg/L**	**SW846 7470A**	**07/16-07/18/98**	**CJQ1F10H**
		Dilution Factor: 1		Analysis Time..: 10:01		

NOTE(S):

B Estimated result. Result is less than RL.

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-2

TOTAL Metals

Lot-Sample #...: I8G130130-002 **Matrix.....:** WATER
Date Sampled...: 07/09/98 19:30 **Date Received..:** 07/11/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8197170						
Arsenic	**0.0076 B**	**0.010**	**mg/L**	**SW846 6010B**	**07/16-07/20/98**	**CJQ24107**
		Dilution Factor: 1		Analysis Time..: 15:56		
Lead	ND	0.0030	mg/L	SW846 6010B	07/16-07/20/98	CJQ24108
		Dilution Factor: 1		Analysis Time..: 15:56		
Selenium	**0.0029 B**	**0.0050**	**mg/L**	**SW846 6010B**	**07/16-07/20/98**	**CJQ24109**
		Dilution Factor: 1		Analysis Time..: 15:56		
Silver	ND	0.010	mg/L	SW846 6010B	07/16-07/20/98	CJQ24103
		Dilution Factor: 1		Analysis Time..: 15:56		
Barium	**0.22**	**0.20**	**mg/L**	**SW846 6010B**	**07/16-07/20/98**	**CJQ24104**
		Dilution Factor: 1		Analysis Time..: 15:56		
Cadmium	ND	0.0050	mg/L	SW846 6010B	07/16-07/20/98	CJQ24105
		Dilution Factor: 1		Analysis Time..: 15:56		
Chromium	ND	0.010	mg/L	SW846 6010B	07/16-07/20/98	CJQ24106
		Dilution Factor: 1		Analysis Time..: 15:56		
Prep Batch #...: 8197261						
Mercury	ND	0.00020	mg/L	SW846 7470A	07/16-07/18/98	CJQ2410A
		Dilution Factor: 1		Analysis Time..: 10:03		

NOTE(S):

B Estimated result. Result is less than RL.

Quanterra

BROWN & CALDWELL

Client Sample ID: MW-3

TOTAL Metals

Lot-Sample #...: I8G130130-003 **Matrix.....:** WATER
Date Sampled...: 07/09/98 17:00 **Date Received..:** 07/11/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8197170						
Arsenic	**0.010**	**0.010**	**mg/L**	**SW846 6010B**	**07/16-07/20/98**	**CJQ29107**
		Dilution Factor: 1		Analysis Time..: 16:01		
Lead	ND	0.0030	mg/L	SW846 6010B	07/16-07/20/98	CJQ29108
		Dilution Factor: 1		Analysis Time..: 16:01		
Selenium	ND	0.0050	mg/L	SW846 6010B	07/16-07/20/98	CJQ29109
		Dilution Factor: 1		Analysis Time..: 16:01		
Silver	ND	0.010	mg/L	SW846 6010B	07/16-07/20/98	CJQ29103
		Dilution Factor: 1		Analysis Time..: 16:01		
Barium	**0.11 B**	**0.20**	**mg/L**	**SW846 6010B**	**07/16-07/20/98**	**CJQ29104**
		Dilution Factor: 1		Analysis Time..: 16:01		
Cadmium	ND	0.0050	mg/L	SW846 6010B	07/16-07/20/98	CJQ29105
		Dilution Factor: 1		Analysis Time..: 16:01		
Chromium	ND	0.010	mg/L	SW846 6010B	07/16-07/20/98	CJQ29106
		Dilution Factor: 1		Analysis Time..: 16:01		
Prep Batch #...: 8197261						
Mercury	ND	0.00020	mg/L	SW846 7470A	07/16-07/18/98	CJQ2910A
		Dilution Factor: 1		Analysis Time..: 10:06		

NOTE(S):

B Estimated result. Result is less than RL.

Quanterra

BROWN & CALDWELL

Client Sample ID: FLOOR

TOTAL Metals

Lot-Sample #...: I8G130130-004 **Matrix.....:** SOLID
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
% Moisture.....: 5.2

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8196170						
Arsenic	**2.2**	**1.1**	**mg/kg**	**SW846 6010B**	**07/15-07/16/98**	**CJQ2A103**
		Dilution Factor: 1		Analysis Time..: 12:55		
Barium	**103**	**21.1**	**mg/kg**	**SW846 6010B**	**07/15-07/16/98**	**CJQ2A106**
		Dilution Factor: 1		Analysis Time..: 12:55		
Cadmium	ND	0.53	mg/kg	SW846 6010B	07/15-07/16/98	CJQ2A107
		Dilution Factor: 1		Analysis Time..: 12:55		
Lead	**1.6**	**0.32**	**mg/kg**	**SW846 6010B**	**07/15-07/16/98**	**CJQ2A104**
		Dilution Factor: 1		Analysis Time..: 12:55		
Chromium	**3.3**	**1.1**	**mg/kg**	**SW846 6010B**	**07/15-07/16/98**	**CJQ2A108**
		Dilution Factor: 1		Analysis Time..: 12:55		
Selenium	ND	0.53	mg/kg	SW846 6010B	07/15-07/16/98	CJQ2A105
		Dilution Factor: 1		Analysis Time..: 16:23		
Silver	ND	1.1	mg/kg	SW846 6010B	07/15-07/16/98	CJQ2A109
		Dilution Factor: 1		Analysis Time..: 12:55		
Prep Batch #...: 8199137						
Mercury	ND	0.11	mg/kg	SW846 7471A	07/18-07/21/98	CJQ2A10A
		Dilution Factor: 1		Analysis Time..: 11:15		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Quanterra

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ67101 **Matrix.....:** SOLID
MB Lot-Sample #: I8G130000-265

Prep Date.....: 07/13/98 **Analysis Time..:** 18:26
Analysis Date..: 07/14/98 **Prep Batch #...:** 8194265
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Diesel Range Organics	ND	1700	ug/kg	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	93	(40 - 144)
Dotriacontane	118	(42 - 159)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

Quanterra

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ87101 **Matrix.....:** WATER
MB Lot-Sample #: I8G130000-287

Prep Date.....: 07/13/98 **Analysis Time..:** 18:15
Analysis Date..: 07/18/98 **Prep Batch #...:** 8194287
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Benz(a)anthracene	ND	10	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl) ether	ND	10	ug/L	SW846 8270C
bis(2-Chloroisopropyl) ether	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	**11**	**10**	**ug/L**	**SW846 8270C**
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	10	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	50	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C

(Continued on next page)

Quanterra

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ87101 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopentadiene	ND	50	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
2-Nitroaniline	ND	50	ug/L	SW846 8270C
3-Nitroaniline	ND	50	ug/L	SW846 8270C
4-Nitroaniline	ND	50	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
4-Nitrophenol	ND	50	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-propylamine	ND	10	ug/L	SW846 8270C
Pentachlorophenol	ND	50	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
1,2,4-Trichlorobenzene	ND	10	ug/L	SW846 8270C
2,4,5-Trichlorophenol	ND	10	ug/L	SW846 8270C
2,4,6-Trichlorophenol	ND	10	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	53	(21 - 100)
Phenol-d5	61	(10 - 94)
Nitrobenzene-d5	61	(35 - 114)
2-Fluorobiphenyl	59	(43 - 116)
2,4,6-Tribromophenol	76	(10 - 123)
Terphenyl-d14	70	(33 - 141)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJW89101 **Matrix.....:** SOLID
MB Lot-Sample #: I8G170000-301

Prep Date.....: 07/16/98 **Analysis Time..:** 23:29
Analysis Date..: 07/16/98 **Prep Batch #...:** 8198301
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2500	ug/kg	SW846 8240B
Benzene	ND	620	ug/kg	SW846 8240B
Bromodichloromethane	ND	620	ug/kg	SW846 8240B
Bromoform	ND	620	ug/kg	SW846 8240B
Bromomethane	ND	1200	ug/kg	SW846 8240B
2-Butanone	ND	2500	ug/kg	SW846 8240B
Carbon disulfide	ND	620	ug/kg	SW846 8240B
Carbon tetrachloride	ND	620	ug/kg	SW846 8240B
Chlorobenzene	ND	620	ug/kg	SW846 8240B
Chloroethane	ND	1200	ug/kg	SW846 8240B
Chloroform	ND	620	ug/kg	SW846 8240B
Chloromethane	ND	1200	ug/kg	SW846 8240B
Dibromochloromethane	ND	620	ug/kg	SW846 8240B
1,1-Dichloroethane	ND	620	ug/kg	SW846 8240B
1,2-Dichloroethane	ND	620	ug/kg	SW846 8240B
1,1-Dichloroethene	ND	620	ug/kg	SW846 8240B
1,2-Dichloroethene (total)	ND	620	ug/kg	SW846 8240B
1,2-Dichloropropane	ND	620	ug/kg	SW846 8240B
cis-1,3-Dichloropropene	ND	620	ug/kg	SW846 8240B
trans-1,3-Dichloropropene	ND	620	ug/kg	SW846 8240B
Ethylbenzene	ND	620	ug/kg	SW846 8240B
2-Hexanone	ND	2500	ug/kg	SW846 8240B
Methylene chloride	ND	620	ug/kg	SW846 8240B
4-Methyl-2-pentanone	ND	2500	ug/kg	SW846 8240B
Styrene	ND	620	ug/kg	SW846 8240B
1,1,2,2-Tetrachloroethane	ND	620	ug/kg	SW846 8240B
Tetrachloroethene	ND	620	ug/kg	SW846 8240B
Toluene	ND	620	ug/kg	SW846 8240B
1,1,1-Trichloroethane	ND	620	ug/kg	SW846 8240B
1,1,2-Trichloroethane	ND	620	ug/kg	SW846 8240B
Trichloroethene	ND	620	ug/kg	SW846 8240B
Vinyl chloride	ND	1200	ug/kg	SW846 8240B
Xylenes (total)	ND	620	ug/kg	SW846 8240B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(74 - 121)
1,2-Dichloroethane-d4	96	(70 - 121)
Toluene-d8	105	(81 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK1EK101 **Matrix.....:** WATER
MB Lot-Sample #: I8G230000-195

Prep Date.....: 07/17/98 **Analysis Time..:** 15:53
Analysis Date..: 07/17/98 **Prep Batch #...:** 8204195
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8020/GRO
Toluene	ND	1.0	ug/L	SW846 8020/GRO
Xylenes (total)	ND	1.0	ug/L	SW846 8020/GRO
Ethylbenzene	ND	1.0	ug/L	SW846 8020/GRO

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	100	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK4CW101 **Matrix.....:** SOLID
MB Lot-Sample #: I8G260000-135
Prep Date.....: 07/21/98 **Analysis Time..:** 21:10
Analysis Date..: 07/21/98 **Prep Batch #...:** 8207135
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/kg	SW846 8020/GRO
Ethylbenzene	ND	1.0	ug/kg	SW846 8020/GRO
Toluene	ND	1.0	ug/kg	SW846 8020/GRO
Xylenes (total)	ND	1.0	ug/kg	SW846 8020/GRO

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	100	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

Quanterra

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK4CX101 **Matrix.....:** SOLID
MB Lot-Sample #: I8G260000-136

Prep Date.....: 07/21/98 **Analysis Time..:** 21:10
Analysis Date..: 07/21/98 **Prep Batch #...:** 8207136
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Gasoline Range Organics	**23 J**	**100**	**ug/kg**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	98	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

Results and reporting limits have been adjusted for dry weight.

Quanterra

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK6RX101 **Matrix.....:** WATER
MB Lot-Sample #: I8G290000-299

Prep Date.....: 07/23/98 **Analysis Time..:** 17:12
Analysis Date..: 07/24/98 **Prep Batch #...:** 8210299
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	20	ug/L	SW846 8240B
Benzene	ND	5.0	ug/L	SW846 8240B
Bromodichloromethane	ND	5.0	ug/L	SW846 8240B
Bromoform	ND	5.0	ug/L	SW846 8240B
Bromomethane	ND	10	ug/L	SW846 8240B
2-Butanone	ND	20	ug/L	SW846 8240B
Carbon disulfide	ND	5.0	ug/L	SW846 8240B
Carbon tetrachloride	ND	5.0	ug/L	SW846 8240B
Chlorobenzene	ND	5.0	ug/L	SW846 8240B
Chloroethane	ND	10	ug/L	SW846 8240B
Chloroform	ND	5.0	ug/L	SW846 8240B
Chloromethane	ND	10	ug/L	SW846 8240B
Dibromochloromethane	ND	5.0	ug/L	SW846 8240B
1,1-Dichloroethane	ND	5.0	ug/L	SW846 8240B
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8240B
1,1-Dichloroethene	ND	5.0	ug/L	SW846 8240B
1,2-Dichloroethene (total)	ND	5.0	ug/L	SW846 8240B
1,2-Dichloropropane	ND	5.0	ug/L	SW846 8240B
cis-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8240B
trans-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8240B
Ethylbenzene	ND	5.0	ug/L	SW846 8240B
2-Hexanone	ND	20	ug/L	SW846 8240B
Methylene chloride	ND	5.0	ug/L	SW846 8240B
4-Methyl-2-pentanone	ND	20	ug/L	SW846 8240B
Styrene	ND	5.0	ug/L	SW846 8240B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	SW846 8240B
Tetrachloroethene	ND	5.0	ug/L	SW846 8240B
Toluene	ND	5.0	ug/L	SW846 8240B
1,1,1-Trichloroethane	ND	5.0	ug/L	SW846 8240B
1,1,2-Trichloroethane	ND	5.0	ug/L	SW846 8240B
Trichloroethene	ND	5.0	ug/L	SW846 8240B
Vinyl chloride	ND	10	ug/L	SW846 8240B
Xylenes (total)	ND	5.0	ug/L	SW846 8240B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	106	(86 - 115)
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	101	(88 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK621101 **Matrix.....:** SOLID
MB Lot-Sample #: I8G290000-151

Prep Date.....: 07/21/98 **Analysis Time..:** 18:57
Analysis Date..: 07/21/98 **Prep Batch #...:** 8210151
Dilution Factor: 100

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Gasoline Range Organics	ND	5000	ug/kg	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	112	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

Quanterra

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK652101 **Matrix.....:** SOLID
MB Lot-Sample #: I8G290000-187

Prep Date.....: 07/21/98 **Analysis Time..:** 18:57
Analysis Date..: 07/21/98 **Prep Batch #...:** 8210187
Dilution Factor: 100

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	100	ug/kg	SW846 8020/GRO
Ethylbenzene	ND	100	ug/kg	SW846 8020/GRO
Toluene	**23 J**	**100**	**ug/kg**	**SW846 8020/GRO**
Xylenes (total)	**59 J**	**100**	**ug/kg**	**SW846 8020/GRO**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	112	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Quanterra

METHOD BLANK REPORT

General Chemistry

Client Lot #...: I8G130130 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: CJTW1101		MB Lot-Sample #:	I8G160000-282	
	ND	1.0	mg/L	MCAWW 300.0A	07/16/98	8197282
		Dilution Factor: 1				
		Analysis Time..: 07:43				
Chloride		Work Order #: CJXT8101		MB Lot-Sample #:	I8G210000-239	
	ND	1.0	mg/L	MCAWW 300.0A	07/20/98	8202239
		Dilution Factor: 1				
		Analysis Time..: 08:35				
Fluoride		Work Order #: CJRCL101		MB Lot-Sample #:	I8G150000-153	
	ND	1.0	mg/L	MCAWW 300.0A	07/14/98	8196153
		Dilution Factor: 1				
		Analysis Time..: 08:23				
Nitrate		Work Order #: CJRCH101		MB Lot-Sample #:	I8G150000-152	
	ND	0.50	mg/L	MCAWW 300.0A	07/14/98	8196152
		Dilution Factor: 1				
		Analysis Time..: 08:23				
Nitrite		Work Order #: CJRC6101		MB Lot-Sample #:	I8G150000-150	
	ND	0.50	mg/L	MCAWW 300.0A	07/14/98	8196150
		Dilution Factor: 1				
		Analysis Time..: 08:23				
Phosphate as P Ortho		Work Order #: CJRAW101		MB Lot-Sample #:	I8G150000-149	
	ND	1.0	mg/L	MCAWW 300.0A	07/14/98	8196149
		Dilution Factor: 1				
		Analysis Time..: 08:23				
Sulfate		Work Order #: CJTVX101		MB Lot-Sample #:	I8G160000-283	
	ND	1.0	mg/L	MCAWW 300.0A	07/16/98	8197283
		Dilution Factor: 1				
		Analysis Time..: 07:43				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: I8G150000-170 **Prep Batch #...:** 8196170						
Arsenic	ND	1.0	mg/kg	SW846 6010B	07/15-07/16/98	CJRDK101
		Dilution Factor: 1				
		Analysis Time..: 12:40				
Barium	ND	20.0	mg/kg	SW846 6010B	07/15-07/16/98	CJRDK107
		Dilution Factor: 1				
		Analysis Time..: 12:40				
Cadmium	ND	0.50	mg/kg	SW846 6010B	07/15-07/16/98	CJRDK10D
		Dilution Factor: 1				
		Analysis Time..: 12:40				
Lead	ND	0.30	mg/kg	SW846 6010B	07/15-07/16/98	CJRDK102
		Dilution Factor: 1				
		Analysis Time..: 12:40				
Chromium	ND	1.0	mg/kg	SW846 6010B	07/15-07/16/98	CJRDK10E
		Dilution Factor: 1				
		Analysis Time..: 12:40				
Selenium	ND	0.50	mg/kg	SW846 6010B	07/15-07/16/98	CJRDK104
		Dilution Factor: 1				
		Analysis Time..: 16:09				
Silver	ND	1.0	mg/kg	SW846 6010B	07/15-07/16/98	CJRDK106
		Dilution Factor: 1				
		Analysis Time..: 12:40				
MB Lot-Sample #: I8G180000-137 **Prep Batch #...:** 8199137						
Mercury	ND	0.10	mg/kg	SW846 7471A	07/18-07/21/98	CJWGW101
		Dilution Factor: 1				
		Analysis Time..: 11:01				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: I8G160000-261 **Prep Batch #...:** 8197261						
Mercury	ND	0.00020	mg/L	SW846 7470A	07/16-07/18/98	CJTQA104
		Dilution Factor: 1				
		Analysis Time..: 09:14				
MB Lot-Sample #: I8G160000-170 **Prep Batch #...:** 8197170						
Arsenic	ND	0.010	mg/L	SW846 6010B	07/16-07/20/98	CJT9M106
		Dilution Factor: 1				
		Analysis Time..: 15:37				
Lead	ND	0.0030	mg/L	SW846 6010B	07/16-07/20/98	CJT9M107
		Dilution Factor: 1				
		Analysis Time..: 15:37				
Selenium	ND	0.0050	mg/L	SW846 6010B	07/16-07/20/98	CJT9M10P
		Dilution Factor: 1				
		Analysis Time..: 15:37				
Silver	ND	0.010	mg/L	SW846 6010B	07/16-07/20/98	CJT9M10R
		Dilution Factor: 1				
		Analysis Time..: 15:37				
Barium	ND	0.20	mg/L	SW846 6010B	07/16-07/20/98	CJT9M101
		Dilution Factor: 1				
		Analysis Time..: 15:37				
Calcium	ND	5.0	mg/L	SW846 6010B	07/16-07/23/98	CJT9M10V
		Dilution Factor: 1				
		Analysis Time..: 15:45				
Cadmium	ND	0.0050	mg/L	SW846 6010B	07/16-07/20/98	CJT9M10U
		Dilution Factor: 1				
		Analysis Time..: 15:37				
Chromium	ND	0.010	mg/L	SW846 6010B	07/16-07/20/98	CJT9M102
		Dilution Factor: 1				
		Analysis Time..: 15:37				
Potassium	ND	5.0	mg/L	SW846 6010B	07/16-07/23/98	CJT9M10X
		Dilution Factor: 1				
		Analysis Time..: 15:45				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: I8G130130

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	ND	5.0	mg/L	SW846 6010B	07/16-07/23/98	CJT9M110
		Dilution Factor: 1				
		Analysis Time..: 15:45				
Sodium	ND	5.0	mg/L	SW846 6010B	07/16-07/23/98	CJT9M111
		Dilution Factor: 1				
		Analysis Time..: 15:45				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ87102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: I8G130000-287 CJQ87103-LCSD
Prep Date.....: 07/13/98 **Analysis Date..:** 07/18/98
Prep Batch #...: 8194287 **Analysis Time..:** 18:50
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Phenol	**150**	**88.7**	**ug/L**	**59**		**SW846 8270C**
	150	**74.5**	**ug/L**	**50**	**17**	**SW846 8270C**
2-Chlorophenol	**150**	**90.2**	**ug/L**	**60**		**SW846 8270C**
	150	**76.2**	**ug/L**	**51**	**17**	**SW846 8270C**
1,4-Dichlorobenzene	**100**	**58.5**	**ug/L**	**58**		**SW846 8270C**
	100	**47.9**	**ug/L**	**48**	**20**	**SW846 8270C**
N-Nitrosodi-n-propylamine	**100**	**68.2**	**ug/L**	**68**		**SW846 8270C**
	100	**57.2**	**ug/L**	**57**	**17**	**SW846 8270C**
1,2,4-Trichlorobenzene	**100**	**62.4**	**ug/L**	**62**		**SW846 8270C**
	100	**49.8 p**	**ug/L**	**50**	**22**	**SW846 8270C**
4-Chloro-3-methylphenol	**150**	**103**	**ug/L**	**69**		**SW846 8270C**
	150	**85.0**	**ug/L**	**57**	**20**	**SW846 8270C**
Acenaphthene	**100**	**70.0**	**ug/L**	**70**		**SW846 8270C**
	100	**60.4**	**ug/L**	**60**	**15**	**SW846 8270C**
4-Nitrophenol	**150**	**132**	**ug/L**	**88**		**SW846 8270C**
	150	**129**	**ug/L**	**86**	**1.8**	**SW846 8270C**
2,4-Dinitrotoluene	**100**	**81.1**	**ug/L**	**81**		**SW846 8270C**
	100	**77.0**	**ug/L**	**77**	**5.1**	**SW846 8270C**
Pentachlorophenol	**150**	**126**	**ug/L**	**84**		**SW846 8270C**
	150	**121**	**ug/L**	**81**	**4.0**	**SW846 8270C**
Pyrene	**100**	**74.0**	**ug/L**	**74**		**SW846 8270C**
	100	**69.7**	**ug/L**	**70**	**6.0**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	57	(21 - 100)
	46	(21 - 100)
Phenol-d5	66	(10 - 94)
	54	(10 - 94)
Nitrobenzene-d5	68	(35 - 114)
	55	(35 - 114)
2-Fluorobiphenyl	66	(43 - 116)
	55	(43 - 116)
2,4,6-Tribromophenol	84	(10 - 123)
	77	(10 - 123)
Terphenyl-d14	71	(33 - 141)
	66	(33 - 141)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

p Relative percent difference (RPD) is outside stated control limits.

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: I8G130130 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Arsenic	200	164	mg/kg	82		SW846 6010B	07/15-07/16/98	8196170
	200	189	mg/kg	95	14	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1						
Barium	200	173	mg/kg	86		SW846 6010B	07/15-07/16/98	8196170
	200	198	mg/kg	99	14	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1						
Cadmium	5.00	4.52	mg/kg	90		SW846 6010B	07/15-07/16/98	8196170
	5.00	5.19	mg/kg	104	14	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1						
Chromium	20.0	17.5	mg/kg	88		SW846 6010B	07/15-07/16/98	8196170
	20.0	20.1	mg/kg	101	14	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1						
Lead	50.0	41.9	mg/kg	84		SW846 6010B	07/15-07/16/98	8196170
	50.0	48.3	mg/kg	97	14	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1						
Selenium	200	166	mg/kg	83		SW846 6010B	07/15-07/16/98	8196170
	200	190	mg/kg	95	13	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1						
Silver	5.00	4.07	mg/kg	81		SW846 6010B	07/15-07/16/98	8196170
	5.00	4.45	mg/kg	89	8.9	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1						
Mercury	0.417	0.394	mg/kg	94		SW846 7471A	07/18-07/21/98	8199137
	0.417	0.377	mg/kg	90	4.3	SW846 7471A	07/18-07/21/98	8199137
		Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: I8G130130 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Arsenic	2.00	1.95	mg/L	98		SW846 6010B	07/16-07/20/98	8197170
	2.00	2.00	mg/L	100	2.3	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1						
Barium	2.00	2.10	mg/L	105		SW846 6010B	07/16-07/20/98	8197170
	2.00	2.13	mg/L	107	1.5	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1						
Cadmium	0.0500	0.0529	mg/L	106		SW846 6010B	07/16-07/20/98	8197170
	0.0500	0.0542	mg/L	108	2.4	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1						
Calcium	50.0	56.1	mg/L	112		SW846 6010B	07/16-07/23/98	8197170
	50.0	55.7	mg/L	111	0.58	SW846 6010B	07/16-07/23/98	8197170
		Dilution Factor: 1						
Chromium	0.200	0.205	mg/L	103		SW846 6010B	07/16-07/20/98	8197170
	0.200	0.210	mg/L	105	2.1	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1						
Lead	0.500	0.496	mg/L	99		SW846 6010B	07/16-07/20/98	8197170
	0.500	0.508	mg/L	102	2.3	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1						
Magnesium	50.0	54.3	mg/L	109		SW846 6010B	07/16-07/23/98	8197170
	50.0	53.7	mg/L	107	1.0	SW846 6010B	07/16-07/23/98	8197170
		Dilution Factor: 1						
Potassium	50.0	53.5	mg/L	107		SW846 6010B	07/16-07/23/98	8197170
	50.0	52.6	mg/L	105	1.7	SW846 6010B	07/16-07/23/98	8197170
		Dilution Factor: 1						
Selenium	2.00	1.95	mg/L	97		SW846 6010B	07/16-07/20/98	8197170
	2.00	2.01	mg/L	100	2.8	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1						
Silver	0.0500	0.0485	mg/L	97		SW846 6010B	07/16-07/20/98	8197170
	0.0500	0.0493	mg/L	99	1.6	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1						

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: I8G130130 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sodium	50.0	52.7	mg/L	105		SW846 6010B	07/16-07/23/98	8197170
	50.0	52.0	mg/L	104	1.4	SW846 6010B	07/16-07/23/98	8197170
		Dilution Factor: 1						
Mercury	0.00500	0.00512	mg/L	102		SW846 7470A	07/16-07/18/98	8197261
	0.00500	0.00537	mg/L	107	4.8	SW846 7470A	07/16-07/18/98	8197261
		Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: I8G130130 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Arsenic	98	(80 - 120)			SW846 6010B	07/16-07/20/98	8197170
	100	(80 - 120)	2.3	(0-20)	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1					
Barium	105	(80 - 120)			SW846 6010B	07/16-07/20/98	8197170
	107	(80 - 120)	1.5	(0-20)	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1					
Cadmium	106	(80 - 120)			SW846 6010B	07/16-07/20/98	8197170
	108	(80 - 120)	2.4	(0-20)	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1					
Calcium	112	(80 - 120)			SW846 6010B	07/16-07/23/98	8197170
	111	(80 - 120)	0.58	(0-20)	SW846 6010B	07/16-07/23/98	8197170
		Dilution Factor: 1					
Chromium	103	(80 - 120)			SW846 6010B	07/16-07/20/98	8197170
	105	(80 - 120)	2.1	(0-20)	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1					
Lead	99	(80 - 120)			SW846 6010B	07/16-07/20/98	8197170
	102	(80 - 120)	2.3	(0-20)	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1					
Magnesium	109	(80 - 120)			SW846 6010B	07/16-07/23/98	8197170
	107	(80 - 120)	1.0	(0-20)	SW846 6010B	07/16-07/23/98	8197170
		Dilution Factor: 1					
Potassium	107	(80 - 120)			SW846 6010B	07/16-07/23/98	8197170
	105	(80 - 120)	1.7	(0-20)	SW846 6010B	07/16-07/23/98	8197170
		Dilution Factor: 1					
Selenium	97	(80 - 120)			SW846 6010B	07/16-07/20/98	8197170
	100	(80 - 120)	2.8	(0-20)	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1					
Silver	97	(80 - 120)			SW846 6010B	07/16-07/20/98	8197170
	99	(80 - 120)	1.6	(0-20)	SW846 6010B	07/16-07/20/98	8197170
		Dilution Factor: 1					

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Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: I8G130130 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Arsenic	82	(80 - 120)			SW846 6010B	07/15-07/16/98	8196170
	95	(80 - 120)	14	(0-20)	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1					
Barium	86	(80 - 120)			SW846 6010B	07/15-07/16/98	8196170
	99	(80 - 120)	14	(0-20)	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1					
Cadmium	90	(80 - 120)			SW846 6010B	07/15-07/16/98	8196170
	104	(80 - 120)	14	(0-20)	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1					
Chromium	88	(80 - 120)			SW846 6010B	07/15-07/16/98	8196170
	101	(80 - 120)	14	(0-20)	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1					
Lead	84	(80 - 120)			SW846 6010B	07/15-07/16/98	8196170
	97	(80 - 120)	14	(0-20)	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1					
Selenium	83	(80 - 120)			SW846 6010B	07/15-07/16/98	8196170
	95	(80 - 120)	13	(0-20)	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1					
Silver	81	(80 - 120)			SW846 6010B	07/15-07/16/98	8196170
	89	(80 - 120)	8.9	(0-20)	SW846 6010B	07/15-07/16/98	8196170
		Dilution Factor: 1					
Mercury	94	(81 - 120)			SW846 7471A	07/18-07/21/98	8199137
	90	(81 - 120)	4.3	(0-21)	SW846 7471A	07/18-07/21/98	8199137
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ87102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: I8G130000-287 CJQ87103-LCSD
Prep Date.....: 07/13/98 **Analysis Date..:** 07/18/98
Prep Batch #...: 8194287 **Analysis Time..:** 18:50
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	**59**	**(25 - 112)**			**SW846 8270C**
	50	**(25 - 112)**	**17**	**(0-27)**	**SW846 8270C**
2-Chlorophenol	**60**	**(46 - 103)**			**SW846 8270C**
	51	**(46 - 103)**	**17**	**(0-35)**	**SW846 8270C**
1,4-Dichlorobenzene	**58**	**(37 - 98)**			**SW846 8270C**
	48	**(37 - 98)**	**20**	**(0-22)**	**SW846 8270C**
N-Nitrosodi-n-propylamine	**68**	**(44 - 109)**			**SW846 8270C**
	57	**(44 - 109)**	**17**	**(0-25)**	**SW846 8270C**
1,2,4-Trichlorobenzene	**62**	**(38 - 101)**			**SW846 8270C**
	50 p	**(38 - 101)**	**22**	**(0-19)**	**SW846 8270C**
4-Chloro-3-methylphenol	**69**	**(48 - 104)**			**SW846 8270C**
	57	**(48 - 104)**	**20**	**(0-38)**	**SW846 8270C**
Acenaphthene	**70**	**(47 - 112)**			**SW846 8270C**
	60	**(47 - 112)**	**15**	**(0-19)**	**SW846 8270C**
4-Nitrophenol	**88**	**(14 - 130)**			**SW846 8270C**
	86	**(14 - 130)**	**1.8**	**(0-27)**	**SW846 8270C**
2,4-Dinitrotoluene	**81**	**(47 - 106)**			**SW846 8270C**
	77	**(47 - 106)**	**5.1**	**(0-34)**	**SW846 8270C**
Pentachlorophenol	**84**	**(33 - 113)**			**SW846 8270C**
	81	**(33 - 113)**	**4.0**	**(0-76)**	**SW846 8270C**
Pyrene	**74**	**(55 - 129)**			**SW846 8270C**
	70	**(55 - 129)**	**6.0**	**(0-12)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	57	(21 - 100)
	46	(21 - 100)
Phenol-d5	66	(10 - 94)
	54	(10 - 94)
Nitrobenzene-d5	68	(35 - 114)
	55	(35 - 114)
2-Fluorobiphenyl	66	(43 - 116)
	55	(43 - 116)
2,4,6-Tribromophenol	84	(10 - 123)
	77	(10 - 123)
Terphenyl-d14	71	(33 - 141)
	66	(33 - 141)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

p Relative percent difference (RPD) is outside stated control limits.

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: I8G130130 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Sodium	105	(80 - 120)			SW846 6010B	07/16-07/23/98	8197170
	104	(80 - 120)	1.4	(0-20)	SW846 6010B	07/16-07/23/98	8197170
		Dilution Factor: 1					
Mercury	102	(81 - 120)			SW846 7470A	07/16-07/18/98	8197261
	107	(81 - 120)	4.8	(0-21)	SW846 7470A	07/16-07/18/98	8197261
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ67102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G130000-265
Prep Date.....: 07/13/98 **Analysis Date..:** 07/14/98
Prep Batch #...: 8194265 **Analysis Time..:** 19:00
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Diesel Range Organics	**33300**	**17900**	**ug/kg**	**54**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	83	(40 - 144)
Dotriacontane	106	(42 - 159)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJX6R102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G200000-292
Prep Date.....: 07/13/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8201292 **Analysis Time..:** 15:53
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Phenol	**5000**	**3450**	**ug/kg**	**69**	**SW846 8270C**
2-Chlorophenol	**5000**	**3500**	**ug/kg**	**70**	**SW846 8270C**
1,4-Dichlorobenzene	**3330**	**2210**	**ug/kg**	**66**	**SW846 8270C**
N-Nitrosodi-n-propylamine	**3330**	**2380**	**ug/kg**	**71**	**SW846 8270C**
1,2,4-Trichlorobenzene	**3330**	**2280**	**ug/kg**	**68**	**SW846 8270C**
4-Chloro-3-methylphenol	**5000**	**3670**	**ug/kg**	**73**	**SW846 8270C**
Acenaphthene	**3330**	**2340**	**ug/kg**	**70**	**SW846 8270C**
4-Nitrophenol	**5000**	**3650**	**ug/kg**	**73**	**SW846 8270C**
2,4-Dinitrotoluene	**3330**	**2390**	**ug/kg**	**72**	**SW846 8270C**
Pentachlorophenol	**5000**	**3670**	**ug/kg**	**73**	**SW846 8270C**
Pyrene	**3330**	**2320**	**ug/kg**	**70**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	70	(25 - 121)
Phenol-d5	75	(24 - 113)
Nitrobenzene-d5	71	(23 - 120)
2-Fluorobiphenyl	71	(30 - 115)
2,4,6-Tribromophenol	81	(19 - 122)
Terphenyl-d14	68	(18 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJW89102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G170000-301
Prep Date.....: 07/16/98 **Analysis Date..:** 07/16/98
Prep Batch #...: 8198301 **Analysis Time..:** 23:53
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,1-Dichloroethene	**6250**	**6110**	**ug/kg**	**98**	**SW846 8240B**
Trichloroethene	**6250**	**6310**	**ug/kg**	**101**	**SW846 8240B**
Benzene	**6250**	**6550**	**ug/kg**	**105**	**SW846 8240B**
Toluene	**6250**	**6580**	**ug/kg**	**105**	**SW846 8240B**
Chlorobenzene	**6250**	**6580**	**ug/kg**	**105**	**SW846 8240B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	99	(74 - 121)
1,2-Dichloroethane-d4	95	(70 - 121)
Toluene-d8	105	(81 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK1EK102 **Matrix.....:** WATER
LCS Lot-Sample#: I8G230000-195
Prep Date.....: 07/17/98 **Analysis Date..:** 07/17/98
Prep Batch #...: 8204195 **Analysis Time..:** 14:39
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	20.0	20.5	ug/L	103	SW846 8020/GR
Toluene	20.0	20.3	ug/L	101	SW846 8020/GR
Ethylbenzene	20.0	21.9	ug/L	110	SW846 8020/GR
Xylenes (total)	60.0	61.6	ug/L	103	SW846 8020/GR
Methyl tert-butyl ether	20.0	21.0	ug/L	105	SW846 8020/GR

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	99	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK4CW102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G260000-135
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8207135 **Analysis Time..:** 10:00
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	20.1	20.2	ug/kg	101	SW846 8020/(
Toluene	60.0	62.8	ug/kg	105	SW846 8020/(
Ethylbenzene	20.1	20.2	ug/kg	100	SW846 8020/(
Xylenes (total)	119	121	ug/kg	102	SW846 8020/(
Methyl tert-butyl ether	39.9	44.3	ug/kg	111	SW846 8020/(

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	100	(75 - 125)
Bromofluorobenzene		(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK4CX102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G260000-136
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8207136 **Analysis Time..:** 10:39
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Gasoline Range Organics	1000	1060	ug/kg	106	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
p-Chlorofluorobenzene	115	(50 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

This sample is in control.

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK6RX102 **Matrix.....:** WATER
LCS Lot-Sample#: I8G290000-299
Prep Date.....: 07/23/98 **Analysis Date..:** 07/24/98
Prep Batch #...: 8210299 **Analysis Time..:** 16:39
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,1-Dichloroethene	**50.0**	**59.4**	**ug/L**	**119**	**SW846 8240B**
Trichloroethene	**50.0**	**54.3**	**ug/L**	**109**	**SW846 8240B**
Benzene	**50.0**	**54.5**	**ug/L**	**109**	**SW846 8240B**
Toluene	**50.0**	**56.9**	**ug/L**	**114**	**SW846 8240B**
Chlorobenzene	**50.0**	**54.0**	**ug/L**	**108**	**SW846 8240B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(86 - 115)
1,2-Dichloroethane-d4	93	(76 - 114)
Toluene-d8	98	(88 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK621102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G290000-151
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8210151 **Analysis Time..:** 15:26
Dilution Factor: 100

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Gasoline Range Organics	50000		ug/kg	116	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Sample meets +/- 30% for an extracted LCS.

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK652102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G290000-187
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8210187 **Analysis Time..:** 14:48
Dilution Factor: 100

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	2010	1830	ug/kg	91	SW846 8020/GR
Toluene	6000	5710	ug/kg	95	SW846 8020/GR
Ethylbenzene	2010	1790	ug/kg	89	SW846 8020/GR
Xylenes (total)	11900	11600	ug/kg	97	SW846 8020/GR
Methyl tert-butyl ether	3990	4060	ug/kg	102	SW846 8020/GR

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	104	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

Quanterra

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: I8G130130 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: CJTW1102 LCS Lot-Sample#: I8G160000-282					
	3.00	3.15	mg/L	105	MCAWW 300.0A	07/16/98	8197282
		Dilution Factor: 1					
		Analysis Time..: 08:53					
Chloride		Work Order #: CJXT8102 LCS Lot-Sample#: I8G210000-239					
	3.00	2.86	mg/L	95	MCAWW 300.0A	07/20/98	8202239
		Dilution Factor: 1					
		Analysis Time..: 08:45					
Fluoride		Work Order #: CJRCL102 LCS Lot-Sample#: I8G150000-153					
	2.00	2.02	mg/L	101	MCAWW 300.0A	07/14/98	8196153
		Dilution Factor: 1					
		Analysis Time..: 08:33					
Nitrate		Work Order #: CJRCH102 LCS Lot-Sample#: I8G150000-152					
	3.00	2.93	mg/L	98	MCAWW 300.0A	07/14/98	8196152
		Dilution Factor: 1					
		Analysis Time..: 08:33					
Nitrite		Work Order #: CJRC6102 LCS Lot-Sample#: I8G150000-150					
	3.00	2.87	mg/L	96	MCAWW 300.0A	07/14/98	8196150
		Dilution Factor: 1					
		Analysis Time..: 08:33					
Phosphate as P Ortho		Work Order #: CJRAW102 LCS Lot-Sample#: I8G150000-149					
	5.00	5.03	mg/L	101	MCAWW 300.0A	07/14/98	8196149
		Dilution Factor: 1					
		Analysis Time..: 08:33					
Sulfate		Work Order #: CJTVX102 LCS Lot-Sample#: I8G160000-283					
	15.0	14.8	mg/L	99	MCAWW 300.0A	07/16/98	8197283
		Dilution Factor: 1					
		Analysis Time..: 07:43					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ67102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G130000-265
Prep Date.....: 07/13/98 **Analysis Date..:** 07/14/98
Prep Batch #...: 8194265 **Analysis Time..:** 19:00
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Diesel Range Organics	**54**	**(38 - 139)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	83	(40 - 144)
Dotriacontane	106	(42 - 159)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJW89102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G170000-301
Prep Date.....: 07/16/98 **Analysis Date..:** 07/16/98
Prep Batch #...: 8198301 **Analysis Time..:** 23:53
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	**98**	**(67 - 126)**	**SW846 8240B**
Trichloroethene	**101**	**(66 - 116)**	**SW846 8240B**
Benzene	**105**	**(78 - 113)**	**SW846 8240B**
Toluene	**105**	**(80 - 119)**	**SW846 8240B**
Chlorobenzene	**105**	**(82 - 117)**	**SW846 8240B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	99	(74 - 121)
1,2-Dichloroethane-d4	95	(70 - 121)
Toluene-d8	105	(81 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJX6R102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G200000-292
Prep Date.....: 07/13/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8201292 **Analysis Time..:** 15:53
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Phenol	**69**	**(36 - 105)**	**SW846 8270C**
2-Chlorophenol	**70**	**(35 - 109)**	**SW846 8270C**
1,4-Dichlorobenzene	**66**	**(32 - 107)**	**SW846 8270C**
N-Nitrosodi-n-propylamine	**71**	**(34 - 117)**	**SW846 8270C**
1,2,4-Trichlorobenzene	**68**	**(30 - 113)**	**SW846 8270C**
4-Chloro-3-methylphenol	**73**	**(40 - 111)**	**SW846 8270C**
Acenaphthene	**70**	**(37 - 114)**	**SW846 8270C**
4-Nitrophenol	**73**	**(49 - 107)**	**SW846 8270C**
2,4-Dinitrotoluene	**72**	**(46 - 104)**	**SW846 8270C**
Pentachlorophenol	**73**	**(29 - 106)**	**SW846 8270C**
Pyrene	**70**	**(51 - 134)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	70	(25 - 121)
Phenol-d5	75	(24 - 113)
Nitrobenzene-d5	71	(23 - 120)
2-Fluorobiphenyl	71	(30 - 115)
2,4,6-Tribromophenol	81	(19 - 122)
Terphenyl-d14	68	(18 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK1EK102 **Matrix.....:** WATER
LCS Lot-Sample#: I8G230000-195
Prep Date.....: 07/17/98 **Analysis Date..:** 07/17/98
Prep Batch #...: 8204195 **Analysis Time..:** 14:39
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	103	(85 - 115)	SW846 8020/GRO
Toluene	101	(85 - 115)	SW846 8020/GRO
Ethylbenzene	110	(85 - 115)	SW846 8020/GRO
Xylenes (total)	103	(85 - 115)	SW846 8020/GRO
Methyl tert-butyl ether	105	(85 - 115)	SW846 8020/GRO

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	99	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK4CW102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G260000-135
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8207135 **Analysis Time..:** 10:00
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	101	(85 - 115)	SW846 8020/GRO
Toluene	105	(85 - 115)	SW846 8020/GRO
Ethylbenzene	100	(85 - 115)	SW846 8020/GRO
Xylenes (total)	102	(85 - 115)	SW846 8020/GRO
Methyl tert-butyl ether	111	(85 - 115)	SW846 8020/GRO

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	100	(75 - 125)
Bromofluorobenzene		(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK4CX102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G260000-136
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8207136 **Analysis Time..:** 10:39
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Gasoline Range Organics	106	(85 - 115)	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
p-Chlorofluorobenzene	115	(50 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

This sample is in control.

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK6RX102 **Matrix.....:** WATER
LCS Lot-Sample#: I8G290000-299
Prep Date.....: 07/23/98 **Analysis Date..:** 07/24/98
Prep Batch #...: 8210299 **Analysis Time..:** 16:39
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	**119**	**(67 - 126)**	**SW846 8240B**
Trichloroethene	**109**	**(76 - 115)**	**SW846 8240B**
Benzene	**109**	**(85 - 121)**	**SW846 8240B**
Toluene	**114**	**(81 - 119)**	**SW846 8240B**
Chlorobenzene	**108**	**(86 - 118)**	**SW846 8240B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(86 - 115)
1,2-Dichloroethane-d4	93	(76 - 114)
Toluene-d8	98	(88 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK621102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G290000-151
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8210151 **Analysis Time..:** 15:26
Dilution Factor: 100

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Gasoline Range Organics	116	(70 - 130)	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Sample meets +/- 30% for an extracted LCS.

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CK652102 **Matrix.....:** SOLID
LCS Lot-Sample#: I8G290000-187
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8210187 **Analysis Time..:** 14:48
Dilution Factor: 100

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	91	(85 - 115)	SW846 8020/GRO
Toluene	95	(85 - 115)	SW846 8020/GRO
Ethylbenzene	89	(85 - 115)	SW846 8020/GRO
Xylenes (total)	97	(85 - 115)	SW846 8020/GRO
Methyl tert-butyl ether	102	(85 - 115)	SW846 8020/GRO

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	104	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

Quanterra

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: I8G130130 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: CJTW1102 LCS Lot-Sample#: I8G160000-282			
	105	(80 - 120)	MCAWW 300.0A	07/16/98	8197282
		Dilution Factor: 1			
		Analysis Time..: 08:53			
Chloride		Work Order #: CJXT8102 LCS Lot-Sample#: I8G210000-239			
	95	(80 - 120)	MCAWW 300.0A	07/20/98	8202239
		Dilution Factor: 1			
		Analysis Time..: 08:45			
Fluoride		Work Order #: CJRCL102 LCS Lot-Sample#: I8G150000-153			
	101	(80 - 120)	MCAWW 300.0A	07/14/98	8196153
		Dilution Factor: 1			
		Analysis Time..: 08:33			
Nitrate		Work Order #: CJRCH102 LCS Lot-Sample#: I8G150000-152			
	98	(80 - 120)	MCAWW 300.0A	07/14/98	8196152
		Dilution Factor: 1			
		Analysis Time..: 08:33			
Nitrite		Work Order #: CJRC6102 LCS Lot-Sample#: I8G150000-150			
	96	(80 - 120)	MCAWW 300.0A	07/14/98	8196150
		Dilution Factor: 1			
		Analysis Time..: 08:33			
Phosphate as P Ortho		Work Order #: CJRAW102 LCS Lot-Sample#: I8G150000-149			
	101	(80 - 120)	MCAWW 300.0A	07/14/98	8196149
		Dilution Factor: 1			
		Analysis Time..: 08:33			
Sulfate		Work Order #: CJTVX102 LCS Lot-Sample#: I8G160000-283			
	99	(80 - 120)	MCAWW 300.0A	07/16/98	8197283
		Dilution Factor: 1			
		Analysis Time..: 07:43			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** WATER
Date Sampled...: 07/13/98 06:00 **Date Received..:** 07/14/98

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: I8G140106-005 **Prep Batch #...:** 8197261									
Mercury									
	ND	0.001	0.000923	mg/L	92		SW846 7470A	07/16-07/18/98	CJQF0113
	ND	0.001	0.00116 *	mg/L	116	23	SW846 7470A	07/16-07/18/98	CJQF0114
			Dilution Factor: 1						
			Analysis Time..: 09:24						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Relative percent difference (RPD) is outside stated control limits.

Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2A10F-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-004 CJQ2A10G-MSD
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
Prep Date.....: 07/13/98 **Analysis Date..:** 07/15/98
Prep Batch #...: 8194265 **Analysis Time..:** 11:08
Dilution Factor: 20 **% Moisture.....:** 5.2

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Diesel Range Organics	**160000**	**70200**	**1420000**	**ug/kg**	**0.0**		**SW846 8015B**
	Qualifiers: a						
	160000	**70200**	**1410000**	**ug/kg**	**0.0**	**0.0**	**SW846 8015B**
	Qualifiers: a						

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	00	(40 - 144)
	Qualifiers: NC,DIL	
	00	(40 - 144)
	Qualifiers: NC,DIL	
Dotriacontane	00	(42 - 159)
	Qualifiers: NC,DIL	
	00	(42 - 159)
	Qualifiers: NC,DIL	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2A10L-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-004 CJQ2A10M-MSD
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
Prep Date.....: 07/16/98 **Analysis Date..:** 07/17/98
Prep Batch #...: 8198301 **Analysis Time..:** 00:42
Dilution Factor: 1 **% Moisture.....:** 5.2

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**ND**	**6250**	**6580**	**ug/kg**	**105**		**SW846 8240B**
	ND	**6250**	**6620**	**ug/kg**	**106**	**0.61**	**SW846 8240B**
Chlorobenzene	**ND**	**6250**	**6540**	**ug/kg**	**105**		**SW846 8240B**
	ND	**6250**	**6450**	**ug/kg**	**103**	**1.5**	**SW846 8240B**
1,1-Dichloroethene	**ND**	**6250**	**6240**	**ug/kg**	**100**		**SW846 8240B**
	ND	**6250**	**6110**	**ug/kg**	**98**	**2.1**	**SW846 8240B**
Toluene	**90**	**6250**	**6600**	**ug/kg**	**104**		**SW846 8240B**
	90	**6250**	**6500**	**ug/kg**	**103**	**1.5**	**SW846 8240B**
Trichloroethene	**ND**	**6250**	**6330**	**ug/kg**	**101**		**SW846 8240B**
	ND	**6250**	**6290**	**ug/kg**	**101**	**0.61**	**SW846 8240B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	106	(74 - 121)
	101	(74 - 121)
1,2-Dichloroethane-d4	94	(70 - 121)
	93	(70 - 121)
Toluene-d8	107	(81 - 117)
	104	(81 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2A10N-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-004 CJQ2A10P-MSD
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
Prep Date.....: 07/13/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8201292 **Analysis Time..:** 18:12
Dilution Factor: 2 **% Moisture.....:** 5.2

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Acenaphthene	**ND**	**3520**	**3080**	**ug/kg**	**87**		**SW846 8270C**
	ND	**3520**	**3070**	**ug/kg**	**87**	**0.02**	**SW846 8270C**
4-Chloro-3-methylphenol	**ND**	**5270**	**4600**	**ug/kg**	**87**		**SW846 8270C**
	ND	**5270**	**4480**	**ug/kg**	**85**	**2.5**	**SW846 8270C**
2-Chlorophenol	**ND**	**5270**	**3410**	**ug/kg**	**65**		**SW846 8270C**
	ND	**5270**	**3310**	**ug/kg**	**63**	**2.7**	**SW846 8270C**
1,4-Dichlorobenzene	**ND**	**3520**	**2100**	**ug/kg**	**60**		**SW846 8270C**
	ND	**3520**	**2080**	**ug/kg**	**59**	**0.97**	**SW846 8270C**
2,4-Dinitrotoluene	**ND**	**3520**	**2770**	**ug/kg**	**79**		**SW846 8270C**
	ND	**3520**	**2790**	**ug/kg**	**79**	**0.60**	**SW846 8270C**
4-Nitrophenol	**ND**	**5270**	**3790**	**ug/kg**	**72**		**SW846 8270C**
	ND	**5270**	**3900**	**ug/kg**	**74**	**2.8**	**SW846 8270C**
N-Nitrosodi-n-propylamine	**ND**	**3520**	**2330**	**ug/kg**	**66**		**SW846 8270C**
	ND	**3520**	**2290**	**ug/kg**	**65**	**1.5**	**SW846 8270C**
Pentachlorophenol	**ND**	**5270**	**3530**	**ug/kg**	**67**		**SW846 8270C**
	ND	**5270**	**3290**	**ug/kg**	**62**	**7.1**	**SW846 8270C**
Phenol	**ND**	**5270**	**3460**	**ug/kg**	**66**		**SW846 8270C**
	ND	**5270**	**3420**	**ug/kg**	**65**	**1.2**	**SW846 8270C**
Pyrene	**ND**	**3520**	**2750**	**ug/kg**	**76**		**SW846 8270C**
	ND	**3520**	**2710**	**ug/kg**	**75**	**1.6**	**SW846 8270C**
1,2,4-Trichlorobenzene	**ND**	**3520**	**2380**	**ug/kg**	**68**		**SW846 8270C**
	ND	**3520**	**2330**	**ug/kg**	**66**	**2.0**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	64	(25 - 121)
	62	(25 - 121)
Phenol-d5	71	(24 - 113)
	71	(24 - 113)
Nitrobenzene-d5	73	(23 - 120)
	69	(23 - 120)
2-Fluorobiphenyl	78	(30 - 115)
	79	(30 - 115)
2,4,6-Tribromophenol	91	(19 - 122)
	88	(19 - 122)
Terphenyl-d14	76	(18 - 137)
	76	(18 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

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MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2G109-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-007 CJQ2G10A-MSD
Date Sampled...: 07/07/98 16:45 **Date Received..:** 07/11/98
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8210151 **Analysis Time..:** 01:20
Dilution Factor: 2000 **% Moisture.....:** 6.0

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Gasoline Range Organics	ND	532	NC,DIL	ug/kg			SW846 8015B
	ND	532	NC,DIL	ug/kg			SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	NC,DIL	(75 - 125)
	NC,DIL	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2H105-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-008 CJQ2H106-MSD
Date Sampled...: 07/07/98 16:30 **Date Received..:** 07/11/98
Prep Date.....: 07/21/98 **Analysis Date..:** 07/21/98
Prep Batch #...: 8207135 **Analysis Time..:** 23:19
Dilution Factor: 1 **% Moisture.....:** 9.0

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methyl tert-butyl ether	ND	43.9	46.9	ug/kg	107		SW846 8020/GRO
	ND	43.9	45.7	ug/kg	104	2.5	SW846 8020/GRO
Benzene	ND	22.1	22.5	ug/kg	102		SW846 8020/GRO
	ND	22.1	22.3	ug/kg	101	1.1	SW846 8020/GRO
Toluene	1.3	66.0	69.0	ug/kg	103		SW846 8020/GRO
	1.3	66.0	68.2	ug/kg	101	1.2	SW846 8020/GRO
Ethylbenzene	ND	22.1	22.5	ug/kg	102		SW846 8020/GRO
	ND	22.1	22.5	ug/kg	102	0.05	SW846 8020/GRO
Xylenes (total)	15	131	140	ug/kg	96		SW846 8020/GRO
	15	131	140	ug/kg	95	0.48	SW846 8020/GRO

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	101	(75 - 125)
	103	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

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MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2H107-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-008 CJQ2H108-MSD
Date Sampled...: 07/07/98 16:30 **Date Received..:** 07/11/98
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8207136 **Analysis Time..:** 01:14
Dilution Factor: 1 **% Moisture.....:** 9.0

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Gasoline Range Organics	4600	1100	4200 NC	ug/kg			SW846 8015B
	4600	1100	3880	ug/kg			SW846 8015B

Qualifiers: NC,MSB

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	110	(75 - 125)
	107	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2910D-MS **Matrix.....:** WATER
MS Lot-Sample #: I8G130130-003 CJQ2910E-MSD
Date Sampled...: 07/09/98 17:00 **Date Received..:** 07/11/98
Prep Date.....: 07/17/98 **Analysis Date..:** 07/17/98
Prep Batch #...: 8204195 **Analysis Time..:** 20:51
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methyl tert-butyl ether	ND	20.0	21.8	ug/L	109		SW846 8020/GRO
	ND	20.0	22.5	ug/L	113	3.4	SW846 8020/GRO
Benzene	ND	20.0	20.1	ug/L	101		SW846 8020/GRO
	ND	20.0	20.5	ug/L	103	2.0	SW846 8020/GRO
Toluene	ND	20.0	20.2	ug/L	101		SW846 8020/GRO
	ND	20.0	20.4	ug/L	102	1.1	SW846 8020/GRO
Xylenes (total)	ND	60.0	60.1	ug/L	100		SW846 8020/GRO
	ND	60.0	61.3	ug/L	102	1.9	SW846 8020/GRO
Ethylbenzene	ND	20.0	20.8	ug/L	104		SW846 8020/GRO
	ND	20.0	20.4	ug/L	102	1.9	SW846 8020/GRO

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	100	(75 - 125)
	100	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** SOLID
Date Sampled...: 07/08/98 09:55 **Date Received..:** 07/10/98

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: I8G130133-005 **Prep Batch #...:** 8196170									
Arsenic									
	3.0	219	169	mg/kg	76		SW846 6010B	07/15-07/16/98	CJQ4M10C
	3.0	219	164 N	mg/kg	73	3.1	SW846 6010B	07/15-07/16/98	CJQ4M10D
			Dilution Factor: 1						
			Analysis Time..: 13:24						
Barium									
	27.9	219	212	mg/kg	84		SW846 6010B	07/15-07/16/98	CJQ4M10X
	27.9	219	191 N	mg/kg	74	10	SW846 6010B	07/15-07/16/98	CJQ4M11C
			Dilution Factor: 1						
			Analysis Time..: 13:24						
Cadmium									
	ND	5.48	4.39	mg/kg	80		SW846 6010B	07/15-07/16/98	CJQ4M115
	ND	5.48	4.28	mg/kg	78	2.6	SW846 6010B	07/15-07/16/98	CJQ4M116
			Dilution Factor: 1						
			Analysis Time..: 13:24						
Chromium									
	10.3	21.9	33.6	mg/kg	107		SW846 6010B	07/15-07/16/98	CJQ4M118
	10.3	21.9	26.2 N,*	mg/kg	73	25	SW846 6010B	07/15-07/16/98	CJQ4M119
			Dilution Factor: 1						
			Analysis Time..: 13:24						
Lead									
	5.9	54.8	46.0 N	mg/kg	73		SW846 6010B	07/15-07/16/98	CJQ4M10F
	5.9	54.8	42.6 N	mg/kg	67	7.8	SW846 6010B	07/15-07/16/98	CJQ4M10G
			Dilution Factor: 1						
			Analysis Time..: 13:24						
Selenium									
	0.21	219	168	mg/kg	77		SW846 6010B	07/15-07/16/98	CJQ4M10M
	0.21	219	163	mg/kg	75	2.9	SW846 6010B	07/15-07/16/98	CJQ4M10N
			Dilution Factor: 1						
			Analysis Time..: 17:12						
Silver									
	ND	5.48	4.20	mg/kg	77		SW846 6010B	07/15-07/16/98	CJQ4M10U
	ND	5.48	4.17	mg/kg	76	0.72	SW846 6010B	07/15-07/16/98	CJQ4M10V
			Dilution Factor: 1						
			Analysis Time..: 13:24						

MS Lot-Sample #: I8G130133-005 **Prep Batch #...:** 8199137

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** SOLID
Date Sampled...: 07/08/98 09:55 **Date Received..:** 07/10/98

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Mercury									
	ND	0.091	0.0728	mg/kg	80		SW846 7471A	07/18-07/21/98	CJQ4M108
	ND	0.091	0.0875	mg/kg	96	18	SW846 7471A	07/18-07/21/98	CJQ4M109

Dilution Factor: 1
Analysis Time..: 11:09

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** WATER
Date Sampled...: 07/09/98 17:35 **Date Received..:** 07/10/98

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: I8G130133-010 **Prep Batch #...:** 8197170									
Arsenic									
	ND	2.00	2.04	mg/L	102		SW846 6010B	07/16-07/20/98	CJQ5E10N
	ND	2.00	1.88	mg/L	94	7.9	SW846 6010B	07/16-07/20/98	CJQ5E10P
			Dilution Factor: 1						
			Analysis Time..: 16:36						
Barium									
	0.33	2.00	2.51	mg/L	109		SW846 6010B	07/16-07/20/98	CJQ5E10C
	0.33	2.00	2.31	mg/L	99	8.2	SW846 6010B	07/16-07/20/98	CJQ5E10D
			Dilution Factor: 1						
			Analysis Time..: 16:36						
Cadmium									
	ND	0.050	0.0537	mg/L	107		SW846 6010B	07/16-07/20/98	CJQ5E118
	ND	0.050	0.0496	mg/L	99	8.1	SW846 6010B	07/16-07/20/98	CJQ5E119
			Dilution Factor: 1						
			Analysis Time..: 16:36						
Calcium									
	178	50.0	233	mg/L	109		SW846 6010B	07/16-07/23/98	CJQ5E11C
	178	50.0	221	mg/L	86	5.2	SW846 6010B	07/16-07/23/98	CJQ5E11D
			Dilution Factor: 1						
			Analysis Time..: 15:57						
Chromium									
	ND	0.200	0.210	mg/L	105		SW846 6010B	07/16-07/20/98	CJQ5E10E
	ND	0.200	0.193	mg/L	96	8.6	SW846 6010B	07/16-07/20/98	CJQ5E10F
			Dilution Factor: 1						
			Analysis Time..: 16:36						
Lead									
	ND	0.500	0.504	mg/L	101		SW846 6010B	07/16-07/20/98	CJQ5E10Q
	ND	0.500	0.464	mg/L	93	8.2	SW846 6010B	07/16-07/20/98	CJQ5E10R
			Dilution Factor: 1						
			Analysis Time..: 16:36						
Magnesium									
	11.1	50.0	66.3	mg/L	110		SW846 6010B	07/16-07/23/98	CJQ5E11M
	11.1	50.0	62.5	mg/L	103	5.9	SW846 6010B	07/16-07/23/98	CJQ5E11N
			Dilution Factor: 1						
			Analysis Time..: 15:57						

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Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** WATER
Date Sampled...: 07/09/98 17:35 **Date Received..:** 07/10/98

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Potassium									
	ND	50.0	57.0	mg/L	114		SW846 6010B	07/16-07/23/98	CJQ5E11J
	ND	50.0	54.5	mg/L	109	4.6	SW846 6010B	07/16-07/23/98	CJQ5E11K
			Dilution Factor: 1						
			Analysis Time..: 15:57						
Selenium									
	ND	2.00	2.01	mg/L	101		SW846 6010B	07/16-07/20/98	CJQ5E10U
	ND	2.00	1.87	mg/L	93	7.4	SW846 6010B	07/16-07/20/98	CJQ5E10V
			Dilution Factor: 1						
			Analysis Time..: 16:36						
Silver									
	ND	0.050	0.0501	mg/L	100		SW846 6010B	07/16-07/20/98	CJQ5E112
	ND	0.050	0.0387 *	mg/L	77	26	SW846 6010B	07/16-07/20/98	CJQ5E113
			Dilution Factor: 1						
			Analysis Time..: 16:36						
Sodium									
	31.5	50.0	86.7	mg/L	110		SW846 6010B	07/16-07/23/98	CJQ5E11Q
	31.5	50.0	81.8	mg/L	101	5.7	SW846 6010B	07/16-07/23/98	CJQ5E11R
			Dilution Factor: 1						
			Analysis Time..: 15:57						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Relative percent difference (RPD) is outside stated control limits.

Quanterra

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJTTP108-MS **Matrix.....:** WATER
MS Lot-Sample #: I8G160161-001 CJTTP109-MSD
Date Sampled...: 07/13/98 14:10 **Date Received..:** 07/15/98
Prep Date.....: 07/23/98 **Analysis Date..:** 07/23/98
Prep Batch #...: 8204185 **Analysis Time..:** 18:17
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	**ND**	**50.0**	**58.4**	**ug/L**	**117**		**SW846 8260B**
	ND	**50.0**	**59.4**	**ug/L**	**119**	**1.8**	**SW846 8260B**
Trichloroethene	**ND**	**50.0**	**53.5**	**ug/L**	**107**		**SW846 8260B**
	ND	**50.0**	**54.1**	**ug/L**	**108**	**1.1**	**SW846 8260B**
Benzene	**6.1**	**50.0**	**58.2**	**ug/L**	**104**		**SW846 8260B**
	6.1	**50.0**	**57.9**	**ug/L**	**104**	**0.44**	**SW846 8260B**
Toluene	**ND**	**50.0**	**55.8**	**ug/L**	**112**		**SW846 8260B**
	ND	**50.0**	**56.3**	**ug/L**	**113**	**0.91**	**SW846 8260B**
Chlorobenzene	**ND**	**50.0**	**53.8**	**ug/L**	**108**		**SW846 8260B**
	ND	**50.0**	**53.6**	**ug/L**	**107**	**0.26**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	105	(86 - 115)
	105	(86 - 115)
Toluene-d8	101	(88 - 110)
	101	(88 - 110)
Dibromofluoromethane	96	(86 - 118)
	97	(86 - 118)
1,2-Dichloroethane-d4	96	(80 - 120)
	97	(80 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: I8G130130 **Matrix.....:** WATER
Date Sampled...: 07/16/98 09:00 **Date Received..:** 07/16/98

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride			WO#: CJF8910V-MS/CJF8910W-MSD				MS Lot-Sample #: I8F300115-001		
	99.8	60.0	166	mg/L	110		MCAWW 300.0A	07/16/98	8197282
	99.8	60.0	155	mg/L	93	6.6	MCAWW 300.0A	07/16/98	8197282
			Dilution Factor: 1						
			Analysis Time..: 08:16						
Chloride			WO#: CJTA1108-MS/CJTA1109-MSD				MS Lot-Sample #: S8G160102-004		
	161	60.0	220	mg/L	97		MCAWW 300.0A	07/20/98	8202239
	161	60.0	215	mg/L	90	2.0	MCAWW 300.0A	07/20/98	8202239
			Dilution Factor: 1						
			Analysis Time..: 09:08						
Fluoride			WO#: CJQ1F10X-MS/CJQ1F110-MSD				MS Lot-Sample #: I8G130130-001		
	3.5	2.00	5.94	mg/L	122		MCAWW 300.0A	07/14/98	8196153
	3.5	2.00	5.98	mg/L	124	0.73	MCAWW 300.0A	07/14/98	8196153
			Dilution Factor: 1						
			Analysis Time..: 08:57						
Nitrate			WO#: CJQ1F10V-MS/CJQ1F10W-MSD				MS Lot-Sample #: I8G130130-001		
	0.22	3.00	3.04	mg/L	94		MCAWW 300.0A	07/14/98	8196152
	0.22	3.00	2.98	mg/L	92	2.0	MCAWW 300.0A	07/14/98	8196152
			Dilution Factor: 1						
			Analysis Time..: 08:57						
Nitrite			WO#: CJQ1F10T-MS/CJQ1F10U-MSD				MS Lot-Sample #: I8G130130-001		
	ND	60.0	59.2	mg/L	99		MCAWW 300.0A	07/14/98	8196150
	ND	60.0	58.1	mg/L	97	1.8	MCAWW 300.0A	07/14/98	8196150
			Dilution Factor: 1						
			Analysis Time..: 10:45						
Phosphate as P Ortho			WO#: CJQ1F10Q-MS/CJQ1F10R-MSD				MS Lot-Sample #: I8G130130-001		
	ND	5.00	3.64 N	mg/L	73		MCAWW 300.0A	07/14/98	8196149
	ND	5.00	3.80	mg/L	76	4.4	MCAWW 300.0A	07/14/98	8196149
			Dilution Factor: 1						
			Analysis Time..: 08:57						
Sulfate			WO#: CJF8910T-MS/CJF8910U-MSD				MS Lot-Sample #: I8F300115-001		
	134	300	428	mg/L	98		MCAWW 300.0A	07/16/98	8197283
	134	300	422	mg/L	96	1.6	MCAWW 300.0A	07/16/98	8197283
			Dilution Factor: 1						
			Analysis Time..: 08:16						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** WATER
Date Sampled...: 07/13/98 06:00 **Date Received..:** 07/14/98

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: I8G140106-005 **Prep Batch #...:** 8197261							
Mercury	92	(75 - 125)			SW846 7470A	07/16-07/18/98	CJQF0113
	116 *	(75 - 125)	23	(0-20)	SW846 7470A	07/16-07/18/98	CJQF0114
		Dilution Factor: 1					
		Analysis Time..: 09:24					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Relative percent difference (RPD) is outside stated control limits.

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2A10F-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-004 CJQ2A10G-MSD
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
Prep Date.....: 07/13/98 **Analysis Date..:** 07/15/98
Prep Batch #...: 8194265 **Analysis Time..:** 11:08
Dilution Factor: 20 **% Moisture.....:** 5.2

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Diesel Range Organics	**0.0 a**	**(40 - 126)**			**SW846 8015B**
	0.0 a	**(40 - 126)**	**0.0**	**(0-30)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	NC,DIL	(40 - 144)
	NC,DIL	(40 - 144)
Dotriacontane	NC,DIL	(42 - 159)
	NC,DIL	(42 - 159)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2A10L-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-004 CJQ2A10M-MSD
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
Prep Date.....: 07/16/98 **Analysis Date..:** 07/17/98
Prep Batch #...: 8198301 **Analysis Time..:** 00:42
Dilution Factor: 1 **% Moisture.....:** 5.2

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**105**	**(74 - 120)**			**SW846 8240B**
	106	**(74 - 120)**	**0.61**	**(0-13)**	**SW846 8240B**
Chlorobenzene	**105**	**(78 - 121)**			**SW846 8240B**
	103	**(78 - 121)**	**1.5**	**(0-13)**	**SW846 8240B**
1,1-Dichloroethene	**100**	**(69 - 122)**			**SW846 8240B**
	98	**(69 - 122)**	**2.1**	**(0-15)**	**SW846 8240B**
Toluene	**104**	**(76 - 126)**			**SW846 8240B**
	103	**(76 - 126)**	**1.5**	**(0-33)**	**SW846 8240B**
Trichloroethene	**101**	**(50 - 130)**			**SW846 8240B**
	101	**(50 - 130)**	**0.61**	**(0-18)**	**SW846 8240B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	106	(74 - 121)
	101	(74 - 121)
1,2-Dichloroethane-d4	94	(70 - 121)
	93	(70 - 121)
Toluene-d8	107	(81 - 117)
	104	(81 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2A10N-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-004 CJQ2A10P-MSD
Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98
Prep Date.....: 07/13/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8201292 **Analysis Time..:** 18:12
Dilution Factor: 2 **% Moisture.....:** 5.2

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	**87**	**(49 - 108)**			**SW846 8270C**
	87	**(49 - 108)**	**0.02**	**(0-27)**	**SW846 8270C**
4-Chloro-3-methylphenol	**87**	**(53 - 109)**			**SW846 8270C**
	85	**(53 - 109)**	**2.5**	**(0-25)**	**SW846 8270C**
2-Chlorophenol	**65**	**(44 - 99)**			**SW846 8270C**
	63	**(44 - 99)**	**2.7**	**(0-30)**	**SW846 8270C**
1,4-Dichlorobenzene	**60**	**(41 - 93)**			**SW846 8270C**
	59	**(41 - 93)**	**0.97**	**(0-36)**	**SW846 8270C**
2,4-Dinitrotoluene	**79**	**(40 - 112)**			**SW846 8270C**
	79	**(40 - 112)**	**0.60**	**(0-34)**	**SW846 8270C**
4-Nitrophenol	**72**	**(42 - 117)**			**SW846 8270C**
	74	**(42 - 117)**	**2.8**	**(0-29)**	**SW846 8270C**
N-Nitrosodi-n-propylamine	**66**	**(44 - 106)**			**SW846 8270C**
	65	**(44 - 106)**	**1.5**	**(0-32)**	**SW846 8270C**
Pentachlorophenol	**67**	**(1.0- 127)**			**SW846 8270C**
	62	**(1.0- 127)**	**7.1**	**(0-96)**	**SW846 8270C**
Phenol	**66**	**(40 - 103)**			**SW846 8270C**
	65	**(40 - 103)**	**1.2**	**(0-30)**	**SW846 8270C**
Pyrene	**76**	**(51 - 125)**			**SW846 8270C**
	75	**(51 - 125)**	**1.6**	**(0-36)**	**SW846 8270C**
1,2,4-Trichlorobenzene	**68**	**(42 - 101)**			**SW846 8270C**
	66	**(42 - 101)**	**2.0**	**(0-32)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	64	(25 - 121)
	62	(25 - 121)
Phenol-d5	71	(24 - 113)
	71	(24 - 113)
Nitrobenzene-d5	73	(23 - 120)
	69	(23 - 120)
2-Fluorobiphenyl	78	(30 - 115)
	79	(30 - 115)
2,4,6-Tribromophenol	91	(19 - 122)
	88	(19 - 122)
Terphenyl-d14	76	(18 - 137)
	76	(18 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2G109-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-007 CJQ2G10A-MSD
Date Sampled...: 07/07/98 16:45 **Date Received..:** 07/11/98
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8210151 **Analysis Time..:** 01:20
Dilution Factor: 2000 **% Moisture.....:** 6.0

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Gasoline Range Organics	NC,DIL	(75 - 125)			SW846 8015B
	NC,DIL	(75 - 125)		(0-30)	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	NC,DIL	(75 - 125)
	NC,DIL	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2H105-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-008 CJQ2H106-MSD
Date Sampled...: 07/07/98 16:30 **Date Received..:** 07/11/98
Prep Date.....: 07/21/98 **Analysis Date..:** 07/21/98
Prep Batch #...: 8207135 **Analysis Time..:** 23:19
Dilution Factor: 1 **% Moisture.....:** 9.0

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methyl tert-butyl ether	107	(75 - 125)			SW846 8020/GRO
	104	(75 - 125)	2.5	(0-30)	SW846 8020/GRO
Benzene	102	(75 - 125)			SW846 8020/GRO
	101	(75 - 125)	1.1	(0-30)	SW846 8020/GRO
Toluene	103	(75 - 125)			SW846 8020/GRO
	101	(75 - 125)	1.2	(0-30)	SW846 8020/GRO
Ethylbenzene	102	(75 - 125)			SW846 8020/GRO
	102	(75 - 125)	0.05	(0-30)	SW846 8020/GRO
Xylenes (total)	96	(75 - 125)			SW846 8020/GRO
	95	(75 - 125)	0.48	(0-30)	SW846 8020/GRO

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	101	(75 - 125)
	103	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2H107-MS **Matrix.....:** SOLID
MS Lot-Sample #: I8G130130-008 CJQ2H108-MSD
Date Sampled...: 07/07/98 16:30 **Date Received..:** 07/11/98
Prep Date.....: 07/21/98 **Analysis Date..:** 07/22/98
Prep Batch #...: 8207136 **Analysis Time..:** 01:14
Dilution Factor: 1 **% Moisture.....:** 9.0

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Gasoline Range Organics	NC	(75 - 125)			SW846 8015B
	NC,MSB	(75 - 125)		(0-30)	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	110	(75 - 125)
	107	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJQ2910D-MS **Matrix.....:** WATER
MS Lot-Sample #: I8G130130-003 CJQ2910E-MSD
Date Sampled...: 07/09/98 17:00 **Date Received..:** 07/11/98
Prep Date.....: 07/17/98 **Analysis Date..:** 07/17/98
Prep Batch #...: 8204195 **Analysis Time..:** 20:51
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methyl tert-butyl ether	109	(75 - 125)			SW846 8020/GRO
	113	(75 - 125)	3.4	(0-30)	SW846 8020/GRO
Benzene	101	(75 - 125)			SW846 8020/GRO
	103	(75 - 125)	2.0	(0-30)	SW846 8020/GRO
Toluene	101	(75 - 125)			SW846 8020/GRO
	102	(75 - 125)	1.1	(0-30)	SW846 8020/GRO
Xylenes (total)	100	(75 - 125)			SW846 8020/GRO
	102	(75 - 125)	1.9	(0-30)	SW846 8020/GRO
Ethylbenzene	104	(75 - 125)			SW846 8020/GRO
	102	(75 - 125)	1.9	(0-30)	SW846 8020/GRO

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	100	(75 - 125)
	100	(75 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** SOLID
Date Sampled...: 07/08/98 09:55 **Date Received..:** 07/10/98

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: I8G130133-005 **Prep Batch #...:** 8196170							
Arsenic	76	(75 - 125)			SW846 6010B	07/15-07/16/98	CJQ4M10C
	73 N	(75 - 125)	3.1	(0-20)	SW846 6010B	07/15-07/16/98	CJQ4M10D
		Dilution Factor: 1					
		Analysis Time..: 13:24					
Barium	84	(75 - 125)			SW846 6010B	07/15-07/16/98	CJQ4M10X
	74 N	(75 - 125)	10	(0-20)	SW846 6010B	07/15-07/16/98	CJQ4M110
		Dilution Factor: 1					
		Analysis Time..: 13:24					
Cadmium	80	(75 - 125)			SW846 6010B	07/15-07/16/98	CJQ4M115
	78	(75 - 125)	2.6	(0-20)	SW846 6010B	07/15-07/16/98	CJQ4M116
		Dilution Factor: 1					
		Analysis Time..: 13:24					
Chromium	107	(75 - 125)			SW846 6010B	07/15-07/16/98	CJQ4M118
	73 N,*	(75 - 125)	25	(0-20)	SW846 6010B	07/15-07/16/98	CJQ4M119
		Dilution Factor: 1					
		Analysis Time..: 13:24					
Lead	73 N	(75 - 125)			SW846 6010B	07/15-07/16/98	CJQ4M10F
	67 N	(75 - 125)	7.8	(0-20)	SW846 6010B	07/15-07/16/98	CJQ4M10G
		Dilution Factor: 1					
		Analysis Time..: 13:24					
Selenium	77	(75 - 125)			SW846 6010B	07/15-07/16/98	CJQ4M10M
	75	(75 - 125)	2.9	(0-20)	SW846 6010B	07/15-07/16/98	CJQ4M10N
		Dilution Factor: 1					
		Analysis Time..: 17:12					
Silver	77	(75 - 125)			SW846 6010B	07/15-07/16/98	CJQ4M10U
	76	(75 - 125)	0.72	(0-20)	SW846 6010B	07/15-07/16/98	CJQ4M10V
		Dilution Factor: 1					
		Analysis Time..: 13:24					
MS Lot-Sample #: I8G130133-005 **Prep Batch #...:** 8199137							
Mercury	80	(75 - 125)			SW846 7471A	07/18-07/21/98	CJQ4M108
	96	(75 - 125)	18	(0-20)	SW846 7471A	07/18-07/21/98	CJQ4M109
		Dilution Factor: 1					
		Analysis Time..: 11:09					

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: I8G130130
Date Sampled...: 07/08/98 09:55 **Date Received..:** 07/10/98 **Matrix.....:** SOLID

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** WATER
Date Sampled...: 07/09/98 17:35 **Date Received..:** 07/10/98

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: I8G130133-010 **Prep Batch #...:** 8197170							
Arsenic	102	(75 - 125)			SW846 6010B	07/16-07/20/98	CJQ5E10N
	94	(75 - 125)	7.9	(0-20)	SW846 6010B	07/16-07/20/98	CJQ5E10P
		Dilution Factor: 1					
		Analysis Time..: 16:36					
Barium	109	(75 - 125)			SW846 6010B	07/16-07/20/98	CJQ5E10C
	99	(75 - 125)	8.2	(0-20)	SW846 6010B	07/16-07/20/98	CJQ5E10D
		Dilution Factor: 1					
		Analysis Time..: 16:36					
Cadmium	107	(75 - 125)			SW846 6010B	07/16-07/20/98	CJQ5E118
	99	(75 - 125)	8.1	(0-20)	SW846 6010B	07/16-07/20/98	CJQ5E119
		Dilution Factor: 1					
		Analysis Time..: 16:36					
Calcium	109	(75 - 125)			SW846 6010B	07/16-07/23/98	CJQ5E11C
	86	(75 - 125)	5.2	(0-20)	SW846 6010B	07/16-07/23/98	CJQ5E11D
		Dilution Factor: 1					
		Analysis Time..: 15:57					
Chromium	105	(75 - 125)			SW846 6010B	07/16-07/20/98	CJQ5E10E
	96	(75 - 125)	8.6	(0-20)	SW846 6010B	07/16-07/20/98	CJQ5E10F
		Dilution Factor: 1					
		Analysis Time..: 16:36					
Lead	101	(75 - 125)			SW846 6010B	07/16-07/20/98	CJQ5E10Q
	93	(75 - 125)	8.2	(0-20)	SW846 6010B	07/16-07/20/98	CJQ5E10R
		Dilution Factor: 1					
		Analysis Time..: 16:36					
Magnesium	110	(75 - 125)			SW846 6010B	07/16-07/23/98	CJQ5E11M
	103	(75 - 125)	5.9	(0-20)	SW846 6010B	07/16-07/23/98	CJQ5E11N
		Dilution Factor: 1					
		Analysis Time..: 15:57					
Potassium	114	(75 - 125)			SW846 6010B	07/16-07/23/98	CJQ5E11J
	109	(75 - 125)	4.6	(0-20)	SW846 6010B	07/16-07/23/98	CJQ5E11K
		Dilution Factor: 1					
		Analysis Time..: 15:57					
Selenium	101	(75 - 125)			SW846 6010B	07/16-07/20/98	CJQ5E10U
	93	(75 - 125)	7.4	(0-20)	SW846 6010B	07/16-07/20/98	CJQ5E10V
		Dilution Factor: 1					
		Analysis Time..: 16:36					

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: I8G130130 **Matrix.....:** WATER
Date Sampled...: 07/09/98 17:35 **Date Received..:** 07/10/98

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	100	(75 - 125)			SW846 6010B	07/16-07/20/98	CJQ5E112
	77 *	(75 - 125)	26	(0-20)	SW846 6010B	07/16-07/20/98	CJQ5E113
		Dilution Factor: 1					
		Analysis Time..: 16:36					
Sodium	110	(75 - 125)			SW846 6010B	07/16-07/23/98	CJQ5E11Q
	101	(75 - 125)	5.7	(0-20)	SW846 6010B	07/16-07/23/98	CJQ5E11R
		Dilution Factor: 1					
		Analysis Time..: 15:57					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Relative percent difference (RPD) is outside stated control limits.

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I8G130130 **Work Order #...:** CJTTP108-MS **Matrix.....:** WATER
MS Lot-Sample #: I8G160161-001 CJTTP109-MSD
Date Sampled...: 07/13/98 14:10 **Date Received..:** 07/15/98
Prep Date.....: 07/23/98 **Analysis Date..:** 07/23/98
Prep Batch #...: 8204185 **Analysis Time..:** 18:17
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	**117**	**(72 - 124)**			**SW846 8260B**
	119	**(72 - 124)**	**1.8**	**(0-18)**	**SW846 8260B**
Trichloroethene	**107**	**(78 - 110)**			**SW846 8260B**
	108	**(78 - 110)**	**1.1**	**(0-19)**	**SW846 8260B**
Benzene	**104**	**(82 - 115)**			**SW846 8260B**
	104	**(82 - 115)**	**0.44**	**(0-18)**	**SW846 8260B**
Toluene	**112**	**(79 - 117)**			**SW846 8260B**
	113	**(79 - 117)**	**0.91**	**(0-18)**	**SW846 8260B**
Chlorobenzene	**108**	**(78 - 120)**			**SW846 8260B**
	107	**(78 - 120)**	**0.26**	**(0-18)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	105	(86 - 115)
	105	(86 - 115)
Toluene-d8	101	(88 - 110)
	101	(88 - 110)
Dibromofluoromethane	96	(86 - 118)
	97	(86 - 118)
1,2-Dichloroethane-d4	96	(80 - 120)
	97	(80 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Quanterra

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: I8G130130 **Matrix.....:** WATER
Date Sampled...: 07/16/98 09:00 **Date Received..:** 07/16/98

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		WO#: CJF8910V-MS/CJF8910W-MSD			MS Lot-Sample #:		I8F300115-001
	110	(75 - 125)			MCAWW 300.0A	07/16/98	8197282
	93	(75 - 125)	6.6	(0-20)	MCAWW 300.0A	07/16/98	8197282
		Dilution Factor: 1					
		Analysis Time..: 08:16					
Chloride		WO#: CJTA1108-MS/CJTA1109-MSD			MS Lot-Sample #:		S8G160102-004
	97	(75 - 125)			MCAWW 300.0A	07/20/98	8202239
	90	(75 - 125)	2.0	(0-20)	MCAWW 300.0A	07/20/98	8202239
		Dilution Factor: 1					
		Analysis Time..: 09:08					
Fluoride		WO#: CJQ1F10X-MS/CJQ1F110-MSD			MS Lot-Sample #:		I8G130130-001
	122	(75 - 125)			MCAWW 300.0A	07/14/98	8196153
	124	(75 - 125)	0.73	(0-20)	MCAWW 300.0A	07/14/98	8196153
		Dilution Factor: 1					
		Analysis Time..: 08:57					
Nitrate		WO#: CJQ1F10V-MS/CJQ1F10W-MSD			MS Lot-Sample #:		I8G130130-001
	94	(75 - 125)			MCAWW 300.0A	07/14/98	8196152
	92	(75 - 125)	2.0	(0-20)	MCAWW 300.0A	07/14/98	8196152
		Dilution Factor: 1					
		Analysis Time..: 08:57					
Nitrite		WO#: CJQ1F10T-MS/CJQ1F10U-MSD			MS Lot-Sample #:		I8G130130-001
	99	(75 - 125)			MCAWW 300.0A	07/14/98	8196150
	97	(75 - 125)	1.8	(0-20)	MCAWW 300.0A	07/14/98	8196150
		Dilution Factor: 1					
		Analysis Time..: 10:45					
Phosphate as P Ortho		WO#: CJQ1F10Q-MS/CJQ1F10R-MSD			MS Lot-Sample #:		I8G130130-001
	73 N	(75 - 125)			MCAWW 300.0A	07/14/98	8196149
	76	(75 - 125)	4.4	(0-20)	MCAWW 300.0A	07/14/98	8196149
		Dilution Factor: 1					
		Analysis Time..: 08:57					
Sulfate		WO#: CJF8910T-MS/CJF8910U-MSD			MS Lot-Sample #:		I8F300115-001
	98	(75 - 125)			MCAWW 300.0A	07/16/98	8197283
	96	(75 - 125)	1.6	(0-20)	MCAWW 300.0A	07/16/98	8197283
		Dilution Factor: 1					
		Analysis Time..: 08:16					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

Quanterra

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: I8G130130 **Work Order #...:** CJQ2A-SMP CJQ2A-DUP **Matrix.....:** SOLID

Date Sampled...: 07/07/98 16:00 **Date Received..:** 07/11/98

% Moisture.....: 5.2

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #:	I8G130130-004	
	5.2	5.4	%	3.8	(0-14)	ASTM D 2216-90	07/16-07/17/98	8197212

Dilution Factor: 1
Analysis Time..: 00:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

Quanterra

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: I8G130130 **Work Order #...:** CJTA1-SMP **Matrix.....:** WATER
CJTA1-DUP
Date Sampled...: 07/16/98 09:00 **Date Received..:** 07/16/98

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: S8G160102-004		
	161	169	mg/L	4.9	(0-20)	MCAWW 300.0A	07/20/98	8202239

Dilution Factor: 20
Analysis Time..: 08:57

Chain of Custody Record

CHAIN OF CUSTODY NUMBER
S8061256 001

126 [illegible]

Quanterra

QUA-4149 (1097)

Client	Project Manager	Date	Page 1 of 2
BROWN & CALDWELL	BILL ROGERS	07/06/1998	

Address	Telephone Number (Area Code)/Fax Number	Lab Location
C/O BJ SERVICES	(713) 646-1122 / (713) 308-3895	QUANTERRA - AUSTIN

City	State	Zip Code	Site Contact
HOBBS	NM	88240	TIM JENKINS

Project Number/Name	Carrier/Waybill Number
BJ ANDREWS, TX	

Contract/Purchase Order/Quote Number
CONTRACT / PURCHASE ORDER # : 4003-02 QUOTE: 24651

Analysis columns: (1) HS9260-1S, (2) MS8270-1S, (3) MT6812EE, (4) M6010SE, (5) M7471-S, (6) GC8320-1S, (7) TFHE-S, (8) TCCL-J, (9) IC2-2, (10) ICRC3-S, (11) ICP61-S, (12) ICSC1-S, (13) TPHV-S, (14), (15)

Sample I.D. Number and Description	Date	Time	Sample Type	Containers Volume	Containers Type	Containers No.	Preservative	Condition on Receipt/Comments	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
#1 Floor	7/7/98	1400	SOLID	120mL	CLEAR GL	1	None	4°C [illegible]	X												X		
#1 Floor	7/7/98	1400	SOLID	500mL	CLEAR GL	1	None			X	X	X	X		X								
#2			SOLID	120mL	CLEAR GL	1	None		X														
#2			SOLID	500mL	CLEAR GL	1	None			X	X	X	X										
#3			SOLID	250mL	CLEAR GL	1								X									
#4			SOLID	250mL	CLEAR GL	1								X									
#5			SOLID	250mL	CLEAR GL	1								X									
#6			SOLID	250mL	CLEAR GL	1								X									
#7			SOLID	250mL	CLEAR GL	1								X									
#8			SOLID	250mL	CLEAR GL	1								X									
#9			SOLID	250mL	CLEAR GL	1								X									
#10			SOLID	250mL	CLEAR GL	1								X									
#11			SOLID	250mL	CLEAR GL	1								X									
#12 Floor SBA-2			SOLID	250mL	CLEAR GL	1			X												X		
#12 SBA-2			SOLID	500mL	CLEAR GL	1	None			X		X			X	X	X	X	X	X			
#13 SBB-2			SOLID	250mL	CLEAR GL	1			X												X		

Special Instructions INCLUDE CUSTODY SEALS, COC, LABELS, RETURN SHIPPING

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months
(A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☐ Normal ☐ Rush ☐ Other ______

QC Level
☐ I. ☐ II. ☐ III.

Project Specific Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By [signature]	7-6-98	1500	1. Received By [signature]	7/7/98	1230
2. Relinquished By [signature]	7/7/98	1700	2. Received By FEDEX	7/10/98	1000
3. Relinquished By			3. Received By [signature]	7/11/98	[illegible]

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client [illegible]

Chain of Custody Record

CHAIN OF CUSTODY NUMBER
SE031250-007

Quanterra

QUA-4149 (1097)

Client	Project Manager	Date	Page 2 of 3
BROWN & CALDWELL	BILL ROGERS	07/06/1998	

Address	Telephone Number (Area Code)/Fax Number	Lab Location
C/O BJ SERVICES	(713) 646-1122 / (713) 308-3899	QUANTERRA - AUSTIN

City	State	Zip Code	Site Contact
HOBBS	NM	88240	TIM JENKINS

Project Number/Name	Carrier/Waybill Number
BJ - ANDREWS, TX	

Contract/Purchase Order/Quote Number: CONTRACT / PURCHASE ORDER # : 4003-03 QUOTE: 24654

Sample I.D. Number and Description	Date	Time	Sample Type	Containers Volume	Containers Type	Containers No.	Preservative	Condition on Receipt/Comments	HS8260|S	MS8270|S	MT6010SE	M6010SE	M7471|S	GC8024|S	TPHS|S	ICCL|S	ICF|S	ICNO3|S	ICPO4|S	ICSO4|S	TPHV|S
#1. SBB-2A			SOLID	500ml	CLEAR GL	1	None	4°C [illegible]		X		X			X	X	X	X	X	X	
#14 ~~SBB~~ SBC-2	/	/	SOLID	250ml	CLEAR GL	1	/		X												X
#14 SBC-2	/	/	SOLID	500ml	CLEAR GL	1	None			X		X			X	X	X	X	X	X	
#15 SW-W	7/7/98	16:15	SOLID	250ml	CLEAR GL	1			X					X							X
#15 SW-W	7/7/98	16:15	SOLID	500ml	CLEAR GL	1	None			X		X			X	X	X	X	X	X	
#16 SW-E	7/7/98	17:00	SOLID	250ml	CLEAR GL	1								X							X
#16 SW-E	7/7/98	1700	SOLID	500ml	CLEAR GL	1	None			X		X			X	X	X	X	X	X	
#17 SW-N	7/7/98	16:45	SOLID	250ml	CLEAR GL	1								X							X
#17 SW-N	7/7/98	16:45	SOLID	500ml	CLEAR GL	1	None			X		X			X	X	X	X	X	X	
#18 SW-S	7/7/98	16:30	SOLID	250ml	CLEAR GL	1								X							X
#18 SW-S	7/7/98	16:30	SOLID	500ml	CLEAR GL	1	None			X		X			X	X	X	X	X	X	
#19 SBA-1	/	/	SOLID	250ml	CLEAR GL	1								X							X
#19 SBA-1	/	/	SOLID	500ml	CLEAR GL	1	None					X			X	X	X	X	X	X	
#22 SBB-1	/	/	SOLID	250ml	CLEAR GL	1								X							X
#20 SBB-1	/	/	SOLID	500ml	CLEAR GL	1	None					X			X	X	X	X	X	X	
#21 SBC-1			SOLID	250ml	CLEAR GL	1								X							X

Special Instructions: INCLUDE CUSTODY SEALS,COC,LABELS RETURN SHIPPING

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ Normal ☐ Rush ☐ Other____

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Michael C. Wells	7-6-98	1800	1. Received By: Anita Poscha	7/7/98	12:30
2. Relinquished By: Anita Poscha	7/10/98	17:00	2. Received By: FEDEX	7/10/98	17:00
3. Relinquished By:			3. Received By: Marly Kingo	7/11/98	10:41 AM

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

1613212

Chain of Custody Record

Quanterra

CHAIN OF CUSTODY NUMBER
SEC01299-001

QUA-4149 (1097)

Client	Project Manager	Date	Page 1 of 1
BROWN & CALDWELL	TIM JENKINS	07/08/1998	
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Location**	
C/O BJ SERVICES	(713) 795-0999 / (713) 308-3899	QUANTERRA - AUSTIN	

City	State	Zip Code	Site Contact
HOBBS	NM	88240	SCOTT LESIKAR

Project Number/Name	Carrier/Waybill Number
BJ HOBBS(NOWSCO)	

Contract/Purchase Order/Quote Number
CONTRACT / PURCHASE ORDER # : 6240.01 QUOTE: 24698

Sample I.D. Number and Description	Date	Time	Sample Type	Containers: Volume	Containers: Type	Containers: No.	Preservative	Condition on Receipt/Comments	GC80201L	ICCL1L	M74701L	M6010DS	MT6010DS		VOCs 8240	SVOC 8270	RCRA metals	major cations/anions
#1 MW-1	7-9-98	1840	WATER	40mL	VIAL	3	1:1 HCl		X									
#1 MW-1	"	"	WATER	500mL	PLASTIC	1	Conc HNO3				X	X	X					
#1 MW-1	"	"	WATER	500mL	PLASTIC	1	None			X								
#2 MW-2	"	19:30	WATER	40mL	VIAL	3	1:1 HCL		X									
#2 MW-2	"	"	WATER	500mL	PLASTIC	1	Conc HNO3				X	X	X					
#2 MW-2	"	"	WATER	500mL	PLASTIC	1	None			X								
#3 MW-3	"	1700	WATER	40mL	VIAL	3	1:1 HCL		X									
#3 MW-3	"	"	WATER	500mL	PLASTIC	1	Conc HNO3				X	X	X					
#3 MW-3	"	"	WATER	500mL	PLASTIC	1	None			X								
~~#4~~			~~WATER~~	~~40mL~~	~~VIAL~~	~~3~~	~~1:1 HCL~~		~~X~~									
#4 MW-1 500 ml clear	7-9-98	1840	WATER	500mL	PLASTIC	1	Conc HNO3				~~X~~	~~X~~	~~X~~		X	X	X	X
#4 MW-1 500 ml clear	7-9-98	1840	WATER	500mL	PLASTIC	1	None			~~X~~					X	X	X	X
~~#5~~			~~WATER~~	~~40mL~~	~~VIAL~~	~~3~~	~~1:1 HCl~~		~~X~~									
~~#5~~			~~WATER~~	~~500mL~~	~~PLASTIC~~	~~1~~	~~Conc HNO3~~				~~X~~	~~X~~	~~X~~					
~~#5~~			~~WATER~~	~~500mL~~	~~PLASTIC~~	~~1~~	~~None~~			~~X~~								
~~#6~~			~~WATER~~	~~40mL~~	~~VIAL~~	~~3~~	~~1:1 HCL~~		~~X~~									

same sample

Special Instructions: INCLUDE CUSTODY SEALS,COC,LABELS,RETURN SHIPPING

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☒ Normal ☐ Rush ☐ Other ____

QC Level
☐ I. ☐ II. ☐ III.

Project Specific Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Kalat Lee	7-8-98	1800	1. Received By: Scott Lesikar	7-9-98	12:30
2. Relinquished By: Scott Lesikar	7-10-98	1700	2. Received By: FedEx	7-10-98	1700
3. Relinquished By			3. Received By: [illegible]	7/[illegible]	[illegible]

Comments: Call T. Jenkins if any questions

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

C

APPENDIX C

Groundwater Sampling
Field Data Sheets

BROWN AND CALDWELL

WELL ID: MW-1

Groundwater Sampling Field Data Sheet

Project Number: _____ **Task Number:** _____ **Date:** 7-9-99

Casing Diameter: 4 inches **Total Depth of Well from TOC:** 54.30 feet **Static Water from TOC:** 48.28 47.92 feet **Product Level from TOC:** N/A feet **Length of Water Column:** 6.02 5.38 feet **Well Volume:** 4 gal **Screened Interval (from GS):** feet	**Purge Equipment:** Geosquirt w/ 3/8 tubing **Sample Equipment:** Same **Analytical Equipment (pH, DO, Redox, Titration, etc.):** YSI 600 XL	**Equipment Calibration - Time** pH _____ = _____ at _____ °C pH _____ = _____ at _____ °C Conductivity Conductance Standard: _____ µmhos/cm at 25°C Measured Value: _____ µmhos/cm at 25°C Dissolved Oxygen DO Meter Calibrated to: _____ mg/L

Time	Well Volume	Gallons Removed	pH	Temp	Conductivity	Redox	Dissolved Oxygen	Visual Description
17:40	0	0	7.10	20.04	2360	212.0	broke	silty
18:00	1	4	6.85	19.78	1730	212.2	meter	clear
18:20	2	8	6.80	19.80	1671	209	DO	↓
18:40	3	12	6.77	19.53	1653	204.1		

Geochemical Parameters		*Comments:*
Ferrous Iron:	0.2 mg/L	
Dissolved Oxygen:	7.0 mg/L	
Nitrate:	mg/L	
Sulfide:	mg/L	

PPE Worn: D	*Sampler's Signature:* Scott E. Fiesler
Disposition of Purge Water: drum on site	

BROWN AND CALDWELL

WELL ID: MW-2

Groundwater Sampling Field Data Sheet

Project Number: ______ Task Number: ______ Date: 7/9/98

Casing Diameter: 2 inches	Purge Equipment: Geosquirt w/ 3/8" tubing	Equipment Calibration - Time
Total Depth of Well from TOC: 53.80 feet		pH ___ = ___ at ___ °C
Static Water from TOC: 48.48 feet	Sample Equipment: same as above	pH ___ = ___ at ___ °C
Product Level from TOC: NA feet		Conductivity: Conductance Standard: ______ µmhos/cm at 25° C
Length of Water Column: 5.32 feet	Analytical Equipment (pH, DO, Redox, filtration, etc.): YSI 600XL	Measured Value: ______ µmhos/cm at 25° C
Well Volume: 1.5 gal		Dissolved Oxygen: DO Meter Calibrated to: ______ mg/L
Screened Interval (from GS): ___ feet		

Time	Well Volume	Gallons Removed	pH	Temp	Conductivity	Redox	Dissolved Oxygen	Visual Description
19:20	0	0	6.85	23.54	692	7.4	31.04	sl. cloudy
19:30	1	1.5	6.95	20.52	659	-17.1	27.44	clear
19:40	2	3.0	6.90	19.91	661	-38.3	27.64	↓
19:50	3	4.5	6.87	19.85	667	-.52	27.80	↓
							dis- regard	

Geochemical Parameters:		Comments:
Ferrous Iron:	0.8 mg/L	
Dissolved Oxygen:	1.0 mg/L	
Nitrate:	___ mg/L	
Sulfate:	___ mg/L	

PPE Worn: D	Sampler's Signature: [signature]
Disposition of Purge Water: drum on site	

BROWN AND CALDWELL

WELL ID: MW-3

Groundwater Sampling Field Data Sheet

Project Number: _____ **Task Number:** _____ **Date:** 7-9-98

Casing Diameter: 2.0 inches	**Purge Equipment:** Geosquirt 3/8" tubing	**Equipment Calibration - Time**
Total Depth of Well from TOC: 55.0 feet		pH _____ = _____ at _____ °C
Static Water from TOC: 47.92 feet	**Sample Equipment:** same as above	pH _____ = _____ at _____ °C
Product Level from TOC: N/A feet		**Comments:**
Length of Water Column: 7.08 feet	**Analytical Equipment (pH, DO, Redox, Filtration, etc.):** YSI 600 XL	Conductance Standard: _____ µmhos/cm at 25°C
Well Volume: 1.15 gal		Measured Value: _____ µmhos/cm at 25°C
Screened Interval (from GS): _____ feet		Observed Changes:
		DO Meter Calibrated to: _____ mg/L

Time	Well Volume	Gallons Removed	pH	Temp	Conductivity	Redox	Dissolved Oxygen	Visual Description
16:20	0	0	7.24	20.51	795	206.2	DO meter broke	clear
16:32	1 ~~1.2~~	1.2	7.13	19.55	718	213.1		
16:44	2 ~~2.4~~	2.4	7.12	19.36	673	220.4		
16:56	3 ~~3.6~~	3.6	7.12	19.37	671	224.5		

Geochemical Parameters		Comments:
Ferrous Iron:	0.2 mg/L	
Dissolved Oxygen:	5.2 mg/L	
Nitrate:	mg/L	
Sulfate:	mg/L	

PPE Worn: Level D

Disposition of Purge Water: drum - on site

Sampler's Signature: Scott E Fisher

48 Location _____ Date 7/9/98

Project / Client _____

6.02
x0.653
1806
30100
36120
39.3106 x 3 = for 12 gallons

17:40 Start pumping
rate ~ 0.2 gpm

TIME	TEMP	COND	PH	Redox
17:40	20.04	2360	7.10	212.0
18:00	19.78	1730	6.85	212.2
18:20	19.80	1671	6.80	209
18:40	19.53	1653	6.77	204.1
18:45	collect sample			
12:50	decon equip	move to MW-2		
19:00	MW-2 H_2O @ 48.48			
	start pumping			

~~19:10~~	TEMP	COND	PH	Redox
19:20	23.54	692	6.85	7.4
19:30	20.52	659	6.95	-17.1
19:40	19.91	661	6.90	-38.3
19:50	19.85	667	6.87	-52
20:00	collect sample			
20:20	off site			

46 Location _____ Date 7/9/98

Project / Client _____

10:30 SEL on site as agreed on 7-8-98
11:05 driller arrives, leaves site to get supplies, 2 loads caliche are on pad
11:10 water levels MW-1 48.28
MW-3 47.92
MW-2 48.48
12:10 driller still not back
one truck w caliche arrives, driver uses backhoe to spread the 3 loads
12:15 driller on site
compact work area for SB-A
12:30 start drill rig, begin drilling

SBA - fill material to ~21' BGS
so drill out to 25', try to sample
13:50 sample 25-25.5', 130 blows/6"
SM Silty Sand: ~~v. dense~~ lt brown, sl. damp, v. fine grained, v. dense
14:05 PID 683 BKG 1.0
14:50 stop drilling - too hard

Location _____ Date 7/9/98 47

Project / Client _____

16:20 begin to sample MW-3
H_2O @ 47.92
TD = 55.00
set pump 1.0' above bottom 54.0'
well vol = 7.08
× 0.163
2124
4248
7080
1154.04 × 1.15 gal/vol
16:30 measure pump rate ~~0-10 gpm~~ 0-1 gpm
~~Ho32~~

TIME	TEMP	COND	pH	DO	Redox
16:20	20.51	795	7.24		206.2
16:32	19.55	718	7.13		213.1
16:44	19.36	673	7.12		220.4
16:56	19.37	671	7.12		224.5

17:00 collect sample
17:15 clean equip / use dedicated tubing
17:30 move to MW-1
17:35 H_2O @ 48.28
TD 54.30
set pump 1' above bottom

July 28, 1997

AUG - 1 1997

CERTIFIED MAIL NO. P 414 631 841
RETURN RECEIPT REQUESTED

Mr. William C. Olsen
State of New Mexico
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, NM 87505

RE: Groundwater Monitoring Results
Unlined Surface Impoundment Closure
BJ Services Company, U.S.A.
Hobbs, New Mexico Facility (former NOWSCO facility)

Dear Mr. Olsen,

Please find enclosed a copy of the annual groundwater monitoring analytical results from the above referenced facility. MW-1 was sampled on June 13, 1997 as a part of the groundwater monitoring program to achieve final closure for an unlined surface impoundment formerly operated at this facility. According to the closure plan, this well should be monitored annually through 1998. The analytical results enclosed show no significant difference from past results and no detections of concern. The next and final sampling event is scheduled for May of 1998. BJ Services will notify OCD prior to this sampling event. If you have any questions or concerns regarding the information presented, please contact me at (281) 363-7521.

Sincerely,

Rick N. Johnson
Environmental Specialist

enclosure (1)

c: Ms. JoAnn Cobb, BJ Services Company, U.S.A. (w/o enclosure)
Mr. Charles Smith, BJ Services Company, U.S.A. (w/o enclosure)
Mr. Wayne Price, Oil Conservation Division - Hobbs Office (w/ enclosure)

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR

Eco-Logical Environmental Services
Attention Shane Estep
2200 Market Street
Midland TX 79703

Lab Receiving # : 9706000236
Sampling Date: 6/13/97
Sample Condition: Intact and Cool
Sample Received By: DH

Date: Jul 14, 1997
Date Rec: 6/14/97
Project: 212-488
Proj Name: MW-1 Sampling
Proj Loc: Hobbs, NM

TA#	Field Code	MATRIX	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
T75450	MW-1	Water	<0.001	<0.001	<0.001	<0.001	<0.001
QC			0.095	0.096	0.096	0.299	
RPD			1	1	1	1	
% Extraction Accuracy			98	98	99	103	
% Instrument Accuracy			95	96	96	100	
Reporting Limit:			0.001	0.001	0.001	0.001	

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)
BTEX	EPA 5030	6/17/97	EPA 8020	6/17/97	AG	0.100 ea	0.1 ea

BB 7-14-97

Director, Dr. Blair Leftwich Date

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
ECO-LOGICAL ENVIRONMENTAL
Attention: Shane Estep
2200 Market Street
Midland, TX 79703

July 14, 1997
Receiving Date: 06/14/97
Sample Type: Water
Project No: 212-488
Project Location: Hobbs, NM

Prep Date: 06/16/97
Analysis Date: 06/16/97
Sampling Date: 06/13/97
Sample Condition: Intact & Cool
Sample Received by: DH
Project Name: MW-1 Sampling

TA#	FIELD CODE	pH (s.u.)
T75450	MW-1	7.6
QC	Quality Control	7.0
RPD		0
% Extraction Accuracy		—
% Instrument Accuracy		100

METHODS: EPA 150.1.
CHEMIST: JT

7-14-97

Director, Dr. Blair Leftwich — DATE

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue · Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
ECO-LOGICAL ENVIRONMENTAL
Attention: Shane Estep
2200 Market Street
Midland, TX 79703

July 11, 1997
Receiving Date: 06/14/97
Sample Type: Water
Project No: 212-488
Project Location: Hobbs, NM

Extraction Date: 06/17/97
Analysis Date: 06/17/97
Sampling Date: 06/13/97
Sample Condition: I & C
Sample Received by: DH
Project Name: MW-1 Sampling

TOTAL METALS (mg/L)

TA#	Field Code	As	Se	Cd	Cr	Pb	Ag	Ba	Hg
T75450	MW-1	<0.10	<0.10	<0.02	<0.05	<0.10	<0.05	0.32	<0.001
QC	Quality Control	0.102	5.2	5.3	0.0105	0.026	0.0096	5.1	0.0049
	Reporting Limit	0.10	0.10	0.02	0.05	0.10	0.05	20	0.001
	RPD	5	1	0	0	4	1	0	2
	% Extraction Accuracy	100	108	100	100	110	94	100	99
	% Instrument Accuracy	102	104	106	105	104	96	104	98

METHODS: EPA SW 846-3015, 6010, 7470, 7191, 7421, 7760, 7060.
CHEMIST: As, Se, Cd, Cr, Pb, Ag, Ba: RR Hg: DM
TOTAL METALS SPIKE: 0.0010 mg/L Ag; 0.010 mg/L Cr; 0.025 mg/L Pb; 0.005 mg/L Hg; 0.100 mg/L As; 2.0 mg/L Se, Cd, Ba.
TOTAL METALS QC: 0.010 mg/L Cr; 0.025 mg/L Pb; 0.0010 mg/L Ag; 0.005 mg/L Hg; 0.100 mg/L As; 5.0 mg/L Se, Cd, Ba.

Director, Dr. Blair Leftwich

7-11-97
Date

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
ECO-LOGICAL ENVIRONMENTAL
Attention: Shane Estep
2200 Market Street
Midland, TX 79703

July 11, 1997
Receiving Date: 06/14/97
Sample Type: Water
Project No: 212-488
Project Location: Hobbs, NM

Prep Date: 07/11/97
Analysis Date: 07/11/97
Sampling Date: 06/13/97
Sample Condition: Intact & Cool
Sample Received by: DH
Project Name: MW-1 Sampling

TA#	FIELD CODE	Ca (mg/L)	Mg (mg/L)	NA (mg/L)
T75450	MW-1	250	31	340
QC	Quality Control	26	24	25
RPD		0	2	2
% Extraction Accuracy		111	103	101
% Instrument Accuracy		105	98	99
REPORTING LIMIT		0.01	0.01	0.4

METHODS: EPA SW 846-3015, 6010.
CHEMIST: RR
SPIKE: 100 mg/L Ca, Mg, Na.
QC: 25 mg/L Ca, Mg, Na.

7-11-97

Director, Dr. Blair Leftwich — DATE

TRACE ANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
ECO-LOGICAL ENVIRONMENTAL
Attention: Shane Estep
2200 Market Street
Midland, TX 79703

July 03, 1997
Receiving Date: 06/14/97
Sample Type: Water
Project No: 212-488
Project Location: Hobbs, NM

Prep Date: 06/18/97
Analysis Date: 06/18/97
Sampling Date: 06/13/97
Sample Condition: Intact & Cool
Sample Received by: DH
Project Name: MW-1 Sampling

TA#	FIELD CODE	CHLORIDE (mg/L)	SULFATE (mg/L)	SPECIFIC CONDUCTANCE (uMHOS/cm)	ALKALINITY (mg/L as CaCo3) HC03	C03
T75450	MW-1	590	110	2,300	310	<1.0
QC	Quality Control	24	26	907	—	—
RPD		0	0	0	0	0
% Extraction Accuracy		94	101	—	—	—
% Instrument Accuracy		94	103	99	—	—
REPORTING LIMIT		1.0	1.0	—	1.00	1.00

METHODS: EPA 300.0, 310.1, 120.1.
CHEMIST: CHLORIDE/SULFATE: RC ALKALINITY/SPECIFIC CONDUCTANCE: JS
CHLORIDE SPIKE: 25 mg/L CHLORIDE. CHLORIDE QC: 23 mg/L CHLORIDE.
SULFATE SPIKE: 25 mg/L SULFATE. SULFATE QC: 25 mg/L SULFATE.

7-3-97

Director, Dr. Blair Leftwich DATE

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
Eco-Logical Environmental Services
Attention Shane Estep
2200 Market Street
Midland TX 79703

Date: Jun 23, 1997
Date Rec: 6/14/97
Project: 212-488
Proj Name: MW-1 Sampling
Proj Loc: Hobbs, NM

Lab Receiving # : 9706000236
Sampling Date: 6/13/97
Sample Condition: Intact and Cool
Sample Received By: DH

TA#	Field Code	MATRIX	TDS (mg/L)
T75450	MW-1	Water	1,500
RPD			11

Reporting Limit: 10

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST
TDS	N/A	6/18/97	EPA 160.1	6/17/97	JS

Director, Dr. Blair Leftwich — Date 6-23-97

75450

165 Ac
~~210~~ 236

TraceAnalysis, Inc.

6701 Aberdeen Avenue Lubbock, Texas 79424
Tel (806) 794 1296 Fax (806) 794 1298
1 (800) 378 1296

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Shane Estep
Phone #: (915) 520-7535
FAX #: (915) 520-7737

Company Name & Address: Ecological Environmental, 2200 Market St, Midland, TX 79703

Project #: 212-488
Project Name: MW-1 Sampling

Project Location: Hobbs, NM
Sampler Signature: Shane Estep

ANALYSIS REQUEST (7-14-97)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: NONE	SAMPLING: DATE	SAMPLING: TIME	BTEX, ~~MTBE~~ (per SE 7-14-97)	TPH	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	~~RCI~~ pH only per SE 7-14	8240 / 8260	8270	Carbonates, Bicarbonates, Na, Mg, Ca	Conductivity	TDS	Chloride, Sulfate	Turn around # of days	Fax ASAP	Hold
	MW-1	2	VOA	X						X		6/13/97	10:00	X		[illegible]												X	
~~75355~~	MW-1	1	L	X					X	X		↓	10:15			X							X	X				X	
75450	MW-1	1	L	X						X		↓	10:30							X					X	X		X	

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Erin Lea	6/13/97	4:30pm	Karen D Wheeler	6/13/97	4:30pm
Karen D Wheeler	6/13/97	6:30pm	Received at Laboratory by: [signature]	6/14/97	10:00

REMARKS

c/I 6°C

7-14

Shipped Greyhound (6/13/97 @ 4:30pm)

RITTER ENVIRONMENTAL & GEOTECHNICAL SERVICES
2900 N. Big Spring, Midland, Texas 79705
Bus: (915) 682-7404 • Metro: (915) 570-6007 • Fax: (915) 682-7440

June 26, 1996

CERTIFIED RETURN RECEIPT REQUESTED
Z 740 460 390

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

Re: Nowsco Well Services, Inc. - Hobbs Facility, 5514 Carlsbad Highway, Hobbs, New Mexico

Dear Mr. Olsen:

A subsurface investigation was conducted on the captioned facility in March 1995 and the impoundment was closed July 1995. Enclosed please find the completed analyses of the groundwater sample taken from the monitor well at the above referenced facility. This analysis is the last scheduled semi-annual sampling event Nowsco agreed to conduct at this facility as part of the closure plan for the unlined surface impoundment. Nowsco will conduct two future sampling events on an annual basis. The next sampling event will take place in May 1997.

Results from the analyses indicated major cations and anions decreased from the last sampling event. Chromium, lead and silver also declined from the last sampling event and were below detection limits this event. Barium remained unchanged at .40 mg/L. Arsenic was the only analyte that increased from 0.4 mg/L to 0.6 mg/L. A copy of the analyses and a concise tabulation of all three sampling events are included for your review.

Should you have any questions or comments, please do not hesitate to contact us.

Sincerely,

Mitchell Ritter
President
MRR/bk
cc: Harold Haro - Nowsco/Midland
John Brown - Nowsco/Hobbs
Wayne Price - NMOCD/Hobbs
Joanne Cobb - BJ Services
Enclosures

NOWSCO/HOBBS FACILITY
RESULTS FOR MW-1

Constituent	Results for 3/27/95	Results for 9/13/95	Results for 5/30/96
pH s.u.	8.0	Not Conducted	Not Conducted
Chloride mg/L	636	734	563
Sulfate mg/L	129	91.4	90.00
TDS mg/L	1,590	Not Conducted	Not Conducted
Calcium mg/L	330	385	323
Magnesium mg/L	61	69.9	46.5
Conductivity uMHOS/cm	2,410	Not Conducted	Not Conducted
Sodium mg/L	Not Conducted	220	175
Bicarbonate mg/L	Not Conducted	238	Not Conducted
Carbonate mg/L	Not Conducted	0	Not Conducted
Arsenic mg/L	<0.1	0.4	0.6
Selenium mg/L	<0.2	0.5	<0.1
Chromium mg/L	<0.01	<0.05	<0.05
Cadmium mg/L	<0.01	0.05	<0.02
Lead mg/L	<0.1	<0.1	<0.1
Silver (Ag) mg/L	<0.01	0.02	<0.01
Barium mg/L	.29	0.40	0.40
Mercury mg/L	<0.001	<0.001	<0.001
MTBE ug/L	Not conducted	<1	<1
Benzene ug/L	ND	<1	<1
Toluene ug/L	2	<1	<1
Ethyl-Benzene ug/L	ND	<1	<1
Xylene ug/L	ND	<1	<1

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
RITTER ENVIRONMENTAL
Attention: Mitch Ritter
2900 N. Big Spring
Midland, TX 79705

June 17, 1996
Receiving Date: 06/01/96
Sample Type: Water
Project No: NA
Project Location: Hobbs, NM

Prep Date: 06/02/96
Analysis Date: 06/06/96
Sampling Date: 05/30/96
Sample Condition: Intact & Cool
Sample Received by: DH
Project Name: Nowsco/Hobbs

TOTAL METALS (mg/L)

TA#	Field Code	As	Se	Cd	Cr	Pb	Ag	Ba	Hg
T53387	53096 - MW-1	0.6	<0.1	<0.02	<0.05	<0.1	<0.01	0.4	<0.001
QC	Quality Control	2.36	1.99	0.04	0.21	0.45	0.05	1.97	0.00495
Reporting Limit		0.1	0.1	0.02	0.05	0.1	0.01	0.2	0.001
RPD		0	3	4	7	5	5	7	4
% Extraction Accuracy		104	100	95	102	95	97	102	102
Instrument Accuracy		118	99	84	105	90	92	99	99

METHODS: EPA SW 846-3015, 6010, 7470.
CHEMIST: As,Se,Cr,Cd,Pb,Ba,Ag: RR Hg: RC
TOTAL METALS SPIKE: 0.0050 mg/L Hg; 8.0 mg/L As, Se, Ba; 0.8 mg/L Cr; 0.2 mg/L Cd, Ag; 2.0 mg/L Pb.
TOTAL METALS QC: 0.0050 mg/L Hg; 2.0 mg/L As, Se, Ba; 0.05 mg/L Cd; 0.2 mg/L Cr; 0.5 mg/L Pb; 0.05 mg/L Ag.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

6-17-96
Date

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
RITTER ENVIRONMENTAL
Attention: Mitch Ritter
2900 N. Big Spring
Midland, TX 79705

June 03, 1996
Receiving Date: 06/01/96
Sample Type: Water
Project No: NA
Project Location: Hobbs, NM

Prep Date: 06/01/96
Analysis Date: 06/01/96
Sampling Date: 05/30/96
Sample Condition: Intact & Cool
Sample Received by: DH
Project Name: Nowsco/Hobbs

TA#	Field Code	MTBE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
T53387	53096 - MW-1	<1	<1	<1	<1	<1	<1
QC	Quality Control	102	92	90	88	176	
Reporting Limit		0.001	0.001	0.001	0.001	0.001	
RPD		3	2	2	2	2	
% Extraction Accuracy		104	94	93	91	90	
Instrument Accuracy		102	92	90	88	88	

METHODS: EPA SW 846-8020, 5030.
CHEMIST: DH
MTBE/BTEX SPIKE AND QC: 0.100 mg/L MTBE/BTEX.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

6-3-96
Date

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
RITTER ENVIRONMENTAL
Attention: Mitch Ritter
2900 N. Big Spring
Midland, TX 79705

June 17, 1996
Receiving Date: 06/01/96
Sample Type: Water
Project No: NA
Project Location: Hobbs, NM

Prep Date: 06/02/96
Analysis Date: 06/12/96
Sampling Date: 05/30/96
Sample Condition: Intact & Cool
Sample Received by: DH
Project Name: Nowsco/Hobbs

TA#	Field Code	SULFATE (mg/L)	ALKALINITY (mg/L) as CaCO3	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)	CHLORIDE (mg/L)
T53387	53096 - MW-1	90.0	308	46.5	323	175	563
QC	Quality Control	9.2	---	5.1	5.22	5.59	500
Reporting Limit		1.0	---	0.01	0.01	0.4	0.5
RPD		9	0	0	3	0	2
% Extraction Accuracy		103	---	96	125	94	101
% Instrument Accuracy		98	---	102	104	112	100

METHODS: EPA 200.7, SM 4500 Cl-B, 375.4, 31
CHEMIST: Sulfate: MS Alkalinity: RCD Calcium, Magnesium, Sodium: RR Chloride: JT
SPIKE: 100.0 mg/L MAGNESIUM, CALCIUM, SODIUM.
QC: 5.0 mg/L MAGNESIUM, CALCIUM, SODIUM.
CHLORIDE SPIKE AND QC: 500 mg/L CHLORIDE.
SULFATE SPIKE: 50,000 mg/L SULFATE.
SULFATE QC: 10.0 mg/L SULFATE.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

6-17-96
Date

53387 504

TraceAnalysis, Inc.

6701 Aberdeen Avenue Lubbock, Texas 79424
Tel (806) 794 1296 Fax (806) 794 1298
1 (800) 378 1296

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Mitch Ritter
Phone #: (915) 570-6007
FAX #: (915) 682-7440

Company Name & Address: Ritter Environmental 2900 N. Big Spring Midland Tx 79705

Project #:
Project Name: Nowsco / Hobbs

Project Location:
Sampler Signature: Richard Dean[?]

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	MATRIX:	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE		SAMPLING: DATE	SAMPLING: TIME	BTEX, MTBE	TPH	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	8240 / 8260	8270	Major Cations / Anions (Na Ca Mg) (Cl SO4 HCO3 CO3)			Turn around # of days	Fax ASAP	Hold		
53387	53096-MW-1	5		✓										5/30/96	13:30	✓		✓							✓							

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Richard Dean[?]	5/31/96	10:00 AM	Helen Shelton	5/31/96	4:35 PM
Helen Shelton	5/31/96	7:30 PM	Received by:		
Relinquished by:			Received at Laboratory by: [signature]	6/1/96	10:00

REMARKS Please Fax Results (915) 682-7440
4°I DM
faxed 6-1[?]

Shipped Greyhound Ritter XCS (357) 5 samples 11→

RITTER ENVIRONMENTAL & GEOTECHNICAL SERVICES
2900 N. Big Spring, Midland, Texas 79705
Bus: (915) 682-7404 • Metro: (915) 570-6007 • Fax: (915) 682-7440

October 16, 1995

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

Re: Nowsco Well Service, Inc.- Hobbs Facility, 5514 Carlsbad Highway, Hobbs, New Mexico

Dear Mr. Olsen:

Enclosed please find the completed analyses of the groundwater sample taken from the monitor well at the above referenced facility. This analysis was a part of the regularly scheduled semi-annual sampling event Nowsco has agreed to conduct at this facility as part of the closure plan for the unlined surface impoundment. The previous and current analytical results are tabulated for your review and included as a part of this report. The monitor well was properly purged and sampled on September 13, 1995.

You will note there are differences in the detection of some of the analyses between these two events. In particular, Arsenic, Selenium, Cadmium and Silver were detected for the first time in this monitor well. With the exception of Arsenic, these constituents were not present in the first sampling analyses. Arsenic was detected in the first sampling of the on-site water well but not the monitor well. The on-site water well was not sampled for this event. The first sampling event was conducted in March of 1995.

Chloride levels have increased from 636 mg/l to 734 mg/l since the last sampling event. No BTEX components were detected.

If you should have any questions or comment please call or write at your convenience.

Sincerely,

Mitchell Ritter
MRR/sh

cc: Harold Haro - Nowsco/Midland
Ward Hawkins - Nowsco/Hobbs
Wayne Price - NMOCD/Hobbs

NOWSCO/HOBBS FACILITY
RESULTS FOR MW-1

CONSTITUENT	RESULTS OR 3/27/95	RESULTS FOR 9/13/95
pH s.u.	8.0	Not Conducted
Chloride mg/L	636	734
Sulfate mg/L	129	91.4
TDS mg/L	1,590	Not Conducted
Calcium mg/L	330	385
Magnesium mg/L	61	69.9
Conductivity uMHOS/cm	2,410	Not Conducted
Sodium mg/L	Not Conducted	220
Bicarbonate mg/L	Not Conducted	238
Carbonate mg/L	Not Conducted	0
Arsenic mg/L	<0.1	0.4
Selenium mg/L	<0.2	0.5
Chromium mg/L	<0.01	<0.05
Cadmium mg/L	<0.01	0.05
Lead mg/L	<0.1	<0.1
Silver (Ag) mg/L	<0.01	0.02
Barium mg/L	.29	0.40
Mercury mg/L	<0.001	<0.001
MTBE ug/L	Not conducted	<1
Benzene ug/L	ND	<1
Toluene ug/L	2	<1
Ethyl-Benzene ug/L	ND	<1
Xylene ug/L	ND	<1

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
RITTER ENVIRONMENTAL
Attention: Mitch Ritter
2900 N. Big Spring
Midland, TX 79705

September 18, 1995
Receiving Date: 09/15/95
Sample Type: Water
Project No: NA
Project Location: NA

Prep Date: 09/15/95
Analysis Date: 09/15/95
Sampling Date: 09/13/95
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: Nowsco/Hobbs

TA#	Field Code	MTBE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	M,P,O XYLENE (ug/L)	TOTAL BTEX (ug/L)
T41352	91395 - MW 1	<1	<1	<1	<1	<1	<1
QC	Quality Control	92	89	103	101	300	
Reporting Limit		1	1	1	1	1	
RPD		6	0	0	0	0	
% Extraction Accuracy		108	100	108	109	107	
% Instrument Accuracy		92	89	103	101	100	

METHODS: EPA SW 846-8020, 5030.
BTEX SPIKE: 100 ug/L BTEX. BTEX QC: 100 ug/L BTEX.

BL

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

9-18-95
Date

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
RITTER ENVIRONMENTAL
Attention: Mitch Ritter
2900 N. Big Spring
Midland, TX 79705

October 6, 1995
Receiving Date: 09/15/95
Sample Type: Water
Proejct No: NA
Project Location: NA

Prep Date: 09/19/95
Analysis Date: 09/19/95
Sampling Date: 09/13/95
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: Nowsco/Hobbs

TOTAL METALS (mg/L)

TA#	Field Code	As	Se	Cr	Cd	Pb	Ba	Ag	Hg
T41352	91395 - MW-1	0.4	0.5	<0.05	0.05	<0.1	0.40	0.02	<0.001
QC	Quality Control	5.25	4.43	5.14	5.11	5.14	5.14	1.04	0.051
Reporting Limit		0.2	0.2	0.05	0.02	0.10	0.03	0.01	0.001
RPD		2	4	2	2	16	14	12	2
% Extraction Accuracy		90	85	95	89	81	94	76	97
% Instrument Accuracy		105	89	103	102	103	103	104	102

METHODS: EPA SW 846-3015, 6010, 7470.
TOTAL METALS SPIKE: 8.0 mg/L As, Se, Ba; 0.8 mg/L Cr; 0.2 mg/L Cd, Ag; 2.0 mg/L Pb; 0.005 mg/L Hg.
TOTAL METALS QC: 5.0 mg/L As, Se, Cr, Cd, Pb, Ba; 1.0 mg/L Ag; 0.005 mg/L Hg.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

10-6-95
Date

TRACEANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
RITTER ENVIRONMENTAL
Attention: Mitch Ritter
2900 N. Big Spring
Midland, TX 79705

October 7, 1995
Receiving Date: 09/15/95
Sample Type: Water
Project No: NA
Project Location: NA

Prep Date: 09/18/95
Analysis Date: 09/18/95
Sampling Date: 09/13/95
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: Nowsco/Hobbs

TA#	FIELD CODE	CHLORIDE (mg/L)	SULFATE (mg/L)	ALKALINITY (mg/L as CaCo3) HCO3	CO3	Na (mg/L)	Mg (mg/L)	Ca (mg/L)
T41352	91395 - MW 1	734	91.4	238	0	220	69.90	385
QC	Quality Control	499	9.8	---	---	20.08	3.85	19.75
RPD		2	2	2	2	6	14	16
% Extraction Accuracy		100	105	---	---	117	104	102
% Instrument Accuracy		99	99	---	---	100	96	99
REPORTING LIMIT		1	1	10	10	0.4	0.01	0.01

METHODS: EPA 375.4, 310.1; 200.7; 4500 Cl-B.
QC: 500 mg/L CHLORIDE; 10.0 mg/L SULFATE; 4.0 mg/L Mg; 20.0 mg/L Ca, Na.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

10-7-95
Date

41352

TraceAnalysis, Inc.

6701 Aberdeen Avenue Lubbock, Texas 79424
Tel (806) 794 1296 Fax (806) 794 1298
1 (800) 378 1296

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: M Ritter

Phone #: 915/570-6007

FAX #: 915/682-7440

Company Name & Address: Ritter Environmental 2900 N Big Spring Midland TX 79705

Project #:

Project Name: Nowsco/Hobbs

Project Location:

Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX, MTBE	TPH	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	8240 / 8260	8270	Major Cations / Anions Na Ca Mg Cl SO4 HCO3 CO3	SPECIAL HANDLING: Turn around # of days	Fax ASAP	Hold
41352	9/395-MW-1	4		✓								9/13/95	10:30	✓		✓						✓	✓			

Relinquished by: Betsy Kruh **Date:** 9/14/95 **Time:** 1:30 PM
Received by: Helen Shelton **Date:** 9/14/95 **Time:** 1:30 P.M.

Relinquished by: Helen Shelton **Date:** 9/14/95 **Time:** 6:30 P.M.
Received by: **Date:** **Time:**

Relinquished by: **Date:** **Time:**
Received at Laboratory by: MS CI **Date:** 9-15-95 **Time:**

REMARKS

258AC

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Ritter, KLS 1235