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Semi-Annual Groundwater Monitoring Report
Petroleum Release
for Abbott Laboratories
Laurinburg, North Carolina

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December 2001

Prepared for
Abbott Laboratories
16900 N. US 15-401 Bypass
Laurinburg, NC 28352

Prepared by
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, NC 27560

Semi-Annual Groundwater Monitoring Report - Petroleum Release
Abbott Laboratories, Laurinburg, North Carolina
December 2001

URS

December 10, 2001

Ms. Kimberly Kashmer
Director of Safety, Environment, and Security
Abbott Laboratories
P.O. Box 1009
Laurinburg, North Carolina 28353

Subject: **Semi-Annual Groundwater Monitoring Report, Petroleum Release Abbott Laboratories, Laurinburg, North Carolina**

Dear Kim:

Enclosed are two copies of the Semi-Annual Groundwater Monitoring Report, Petroleum Release, for the Abbott Laboratories facility located in Laurinburg, North Carolina. Copies have also been sent to John Robbins and Frank Miller. We would be pleased to discuss your preliminary review comments by phone or address any written comments you may provide.

Please feel free to call me at (919) 461-1295 or Shannon Clunn at (919) 461-1385 with any comments or questions.

Sincerely,

URS CORPORATION – NORTH CAROLINA

B. Perry Gayle, Ph.D., P.E.
Project Manager

Enclosure

cc: John Robbins, Abbott Laboratories
Frank Miller, Abbott Laboratories

URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 100
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SEMI-ANNUAL GROUNDWATER MONITORING REPORT
PETROLEUM RELEASE

Abbott Laboratories
Laurinburg, North Carolina

Groundwater Incident No. 21511

Prepared for:

Abbott Laboratories
16900 North US 15-401 Bypass
P.O. Box 1009
Laurinburg, North Carolina 28352
Scotland County

Prepared by:

URS Corporation – North Carolina
1600 Perimeter Park Drive
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December 2001

TABLE OF CONTENTS

		Page
	List of Figures	iii
	List of Tables	iv
1.0	INTRODUCTION	1-1
2.0	FIELD METHODS	2-1
3.0	RESULTS	3-1
	3.1 Water Level Measurements	3-1
	3.2 Analytical Results	3-1
	3.3 Free Product Evaluation	3-2

APPENDIX A GROUNDWATER SAMPLING ANALYTICAL REPORTS
APPENDIX B CONTAMINANT CONCENTRATIONS VERSUS TIME

LIST OF FIGURES

1-1 Vicinity Map, Abbott Laboratories, Laurinburg, North Carolina

2-1 Monitoring Well Network, Abbott Labs, Laurinburg, NC

3-1 Groundwater Contour Map, Interbedded Unit, October 2001, Abbott Laboratories, Laurinburg, NC

3-2 Groundwater Contour Map, Sand Unit, October 2001, Abbott Laboratories, Laurinburg, NC

3-3 Approximate Distribution of Benzene, Interbedded Unit, September 2001, Abbott Labs, Laurinburg, NC

3-4 Approximate Distribution of Benzene, Sand Unit, September 2001, Abbott Labs, Laurinburg, NC

3-5 Cross-section Locations, September 2001, Abbott Labs, Laurinburg, NC

3-6 Approximate Distribution of Benzene, A-A', September 2001, Abbott Laboratories, Laurinburg, North Carolina

3-7 Location of Surrounding Water Supply Wells, Abbott Laboratories, Laurinburg, North Carolina

LIST OF TABLES

2-1 Monitoring Well Construction Data for Sampled Wells, September 2001, Abbott Laboratories, Laurinburg, North Carolina

3-1 Water Level Measurements and Elevations, September and October 2001, Abbott Laboratories, Laurinburg, North Carolina

3-2 Historical Water Level Elevations at FR-1, Abbott Laboratories, Laurinburg, North Carolina

3-3 Historical Water Level Elevations at FR-3, Abbott Laboratories, Laurinburg, North Carolina

3-4 Historical Water Level Elevations at FR-3d, Abbott Laboratories, Laurinburg, North Carolina

3-5 Historical Water Level Elevations at FR-5, Abbott Laboratories, Laurinburg, North Carolina

3-6 Historical Water Level Elevations at FR-6d, Abbott Laboratories, Laurinburg, North Carolina

3-7 Historical Water Level Elevations at FR-7d, Abbott Laboratories, Laurinburg, North Carolina

3-8 Historical Water Level Elevations at FR-8d, Abbott Laboratories, Laurinburg, North Carolina

3-9 Historical Water Level Elevations at FR-9d, Abbott Laboratories, Laurinburg, North Carolina

3-10 Historical Water Level Elevations at MW-10b, Abbott Laboratories, Laurinburg, North Carolina

3-11 Historical Water Level Elevations at MW-10d, Abbott Laboratories, Laurinburg, North Carolina

3-12 Historical Water Level Elevations at MW-20b, Abbott Laboratories, Laurinburg, North Carolina

3-13 Field Measurements, September 2001, Abbott Laboratories, Laurinburg, North Carolina

3-14 Summary of Qualified Groundwater Analytical Results, September 2001, BTEX by EPA Method 602 and SW8260B, Abbott Laboratories, Laurinburg, North Carolina

3-15 Historical Analytical Results for FR-3d, Abbott Laboratories, Laurinburg, North Carolina

LIST OF TABLES (Continued)

3-16 Historical Analytical Results for FR-6d, Abbott Laboratories, Laurinburg, North Carolina

3-17 Historical Analytical Results for FR-7d, Abbott Laboratories, Laurinburg, North Carolina

3-18 Historical Analytical Results for FR-10d, Abbott Laboratories, Laurinburg, North Carolina

3-19 Free Product Measurements for FR-6, Abbott Laboratories, Laurinburg, North Carolina

1.0 INTRODUCTION

The Abbott Laboratories facility is located at 16900 North US 15-401 Bypass in Laurinburg, Scotland County, North Carolina (Figure 1-1). The facility, which includes approximately 51 acres, was constructed on agricultural land in 1969. The facility has produced medical devices under SIC Code 3841 since 1970.

On January 30, 2000, No. 2 fuel oil was discovered leaking into a concrete-lined storm water ditch along the southeastern portion of the Abbott facility. An inventory of the fuel source suggests that approximately 1,500 gallons of fuel was released, through an abandoned distribution line from an aboveground storage tank, into a former underground storage tank (UST) pit at a depth of approximately eight to ten feet below ground surface (bgs).

Since the release was initially detected at the site, several phases of investigation have been performed, including a preliminary site characterization and a phase II investigation. Results of the investigations indicated that soil underlying some areas of the site exceeded the North Carolina Department of Environment and Natural Resources (NCDENR) soil action level for total petroleum hydrocarbons (TPH) diesel range organics (DRO) and groundwater within the sand unit exceeded the groundwater standard for benzene. The phase II site characterization was conducted to confirm the results of the preliminary investigation and to further define the extent of petroleum contamination in the soil and groundwater in the fuel release area. Results of the phase II investigation indicated that TPH DRO and various volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) were present in soil at a depth of seven to eight feet bgs at two locations. Benzene and ethylbenzene were the only constituents of concern detected in the groundwater within the sand unit during the phase II investigation; however, only benzene was detected at levels above the NCDENR groundwater standard.

In an effort to proactively monitor the existing benzene plume and contaminant level trends in individual wells, groundwater is sampled and analyzed in May and September. The fuel release monitoring well network is comprised of fourteen wells and includes FR-1, -2, -3, -3d, -4, -5, -6, -6d, -7d, -8d, -9d, MW-10b, MW-10d, and MW-20b. Wells FR-2 and -4 are

not sampled because they are clean wells located upgradient and cross-gradient of the plume, respectively. However, FR-2 and -4 are used for water level measurement. FR-6 is not scheduled for sampling nor is it used for water level measurement due to the historical presence of free product.

URS Corporation – North Carolina (URS-NC) conducted groundwater sampling at the Abbott facility in September 2001. The sampling event included the measurement of water levels, temperature, pH, and specific conductance; and the collection and analysis of samples from eleven monitoring wells. This report describes the sampling methods and presents the results for the semi-annual sampling event.

2.0 FIELD METHODS

Groundwater was sampled September 24-25, 2001 in general accordance with the methods outlined in the *Groundwater Sampling Plan* (Radian Engineering, May 2001) for this site.

Eleven monitoring wells were sampled including FR-1, -3, -3d, -5, -6d, -7d, -8d, and -9d. Monitoring wells MW-10b, -10d, and -20b were also sampled but under a separate project. FR-6 is monitored on a weekly basis for the presence of free product. The locations of the monitoring wells are shown in Figure 2-1. Details of well construction are provided in Table 2-1.

Prior to sampling, groundwater levels were measured using an electric water-level indicator. Water levels were measured in all wells in the monitoring well network with the exception of FR-6. The eleven wells scheduled for sampling were then purged using inertial foot-valve pumps. Temperature, pH, and specific conductance were measured and the data were recorded in a field notebook. Purging continued until temperature, pH, and specific conductance stabilized; a minimum of three well volumes was extracted; or the well was pumped dry. Each of the wells was then sampled immediately following well purging using the inertial foot-valve pump. For quality assurance/quality control (QA/QC) purposes, a duplicate sample was collected at well FR-6d; and a trip blank accompanied the sample shipment.

Groundwater samples from wells FR-1, -3, -3d, -5, -6d, -7d, -8d, and -9d were sent by overnight courier to Severn Trent Laboratories in Tallahassee, Florida for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 602. BTEX were the only constituents included in the analysis because they were the only analytes detected during previous groundwater investigations. Groundwater wells MW-10b, -10d, and -20b are sampled under a separate project; however, the data is also used for the fuel release project. The samples from these three wells were sent by overnight courier to Severn Trent Laboratories in Austin, Texas for analysis of VOCs by SW 846 Method 8260.

3.0 RESULTS

3.1 Water Level Measurements

Table 3-1 presents the depth to groundwater and static water-level elevations measured in the eleven wells sampled and two additional wells in the monitoring well network. Maps showing the generalized direction of groundwater flow and the average groundwater flow velocity in the interbedded and sand hydrogeologic units are included as Figures 3-1 and 3-2, respectively. Historical water-level elevations in sampled wells are included in Tables 3-2 to 3-12.

3.2 Analytical Results

Field measurements of groundwater temperature, pH, and specific conductance are summarized in Table 3-13. Qualified analytical results from the September 2001 event are summarized in Table 3-14. Benzene, toluene, and ethylbenzene were the only constituents of concern detected in the groundwater samples collected from the eleven monitoring wells. FR-3d and FR-6d were the only wells with samples that exhibited concentrations of analytes above the groundwater standard. Benzene was detected at levels of 1.6 and 17 μg/L in FR-3d and FR-6d, respectively. Qualified analytical data and laboratory reports are included in Appendix A.

The approximate extent of benzene, which has been detected at concentrations exceeding its groundwater standard, is illustrated in Figures 3-3 and 3-4. Cross-section locations are shown in Figures 3-5 and 3-6. Both current and historical data were used to approximate the extent of contaminants.

Historical analytical results for the wells with BTEX detected in groundwater samples are presented in Tables 3-15 through 3-18. Graphs depicting the analyte concentrations detected in FR-3d and FR-6d versus time are presented in Appendix B. A comparison of the analytical record for wells at the perimeter of the plume suggests that the plume remains on-site, at least 1,200 feet from potential receptors located south of 401 By-Pass (Figure 3-7).

3.3 Free Product Evaluation

Since December 2000, well FR-6, located in the vicinity of the former UST pit, has been checked for the presence of free product on a weekly basis. The weekly measurements are presented in Table 3-18. Methods of free product detection include stick measurements using oil/water gauging paste and an oil/water interface probe. FR-6 was not sampled during the September 2001 semi-annual sampling event due to the historical presence of free product.

As much as 5-inches of free product has been detected in the well since Aggressive Fluid Vapor Recovery was conducted in May 2001. Abbott Labs has since used a bailer to manually remove the free product from the well for proper disposal.

G:\ABBOTT\LAURINBURG\LAURINTOPO.DWG

SCALE IN FEET
0 2000

SOURCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE
LAURINBURG, NC – DATED 1957, PHOTOREVISED 1982

VICINITY MAP

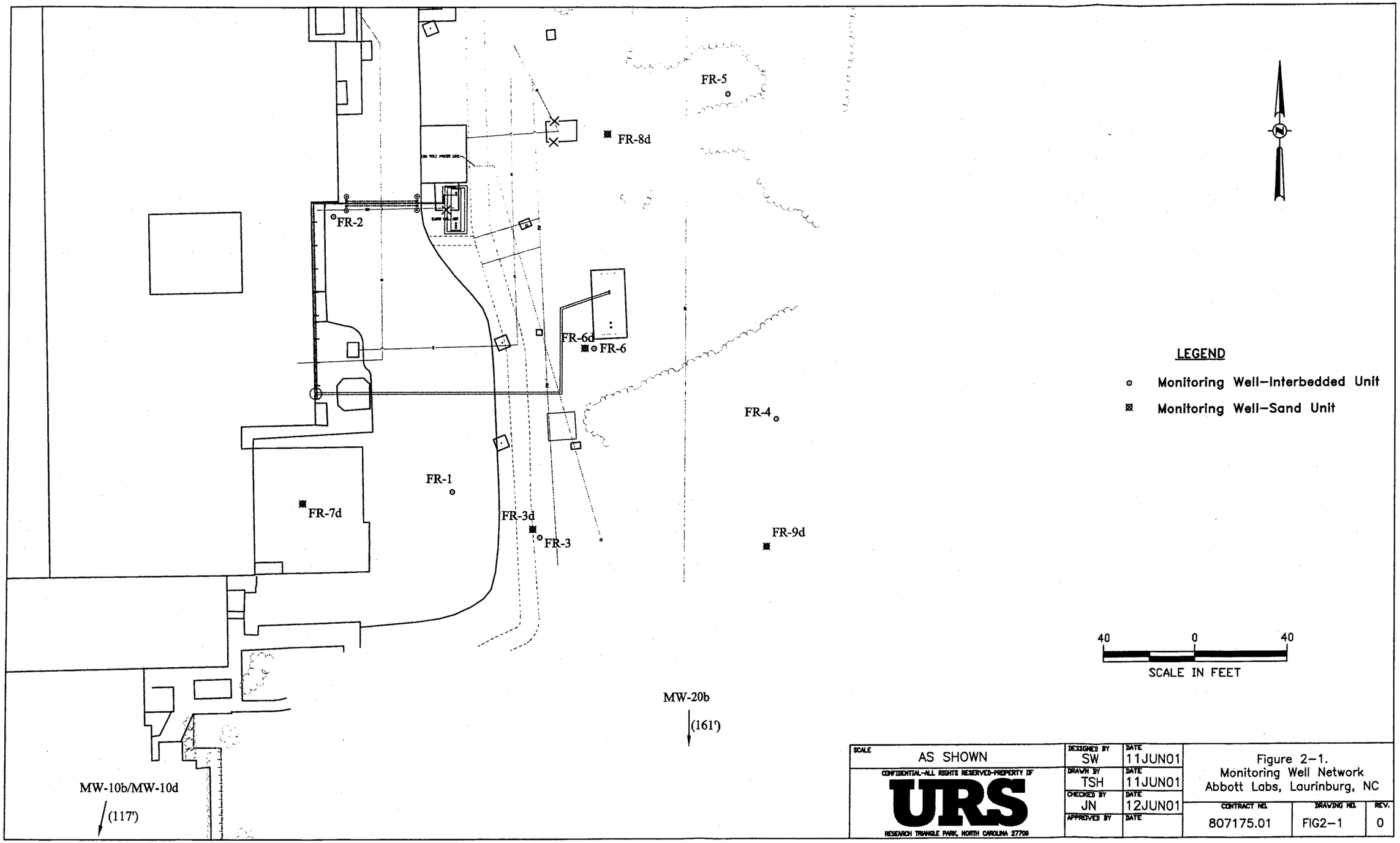
ABBOTT LABORATORIES
LAURINBURG, NORTH CAROLINA

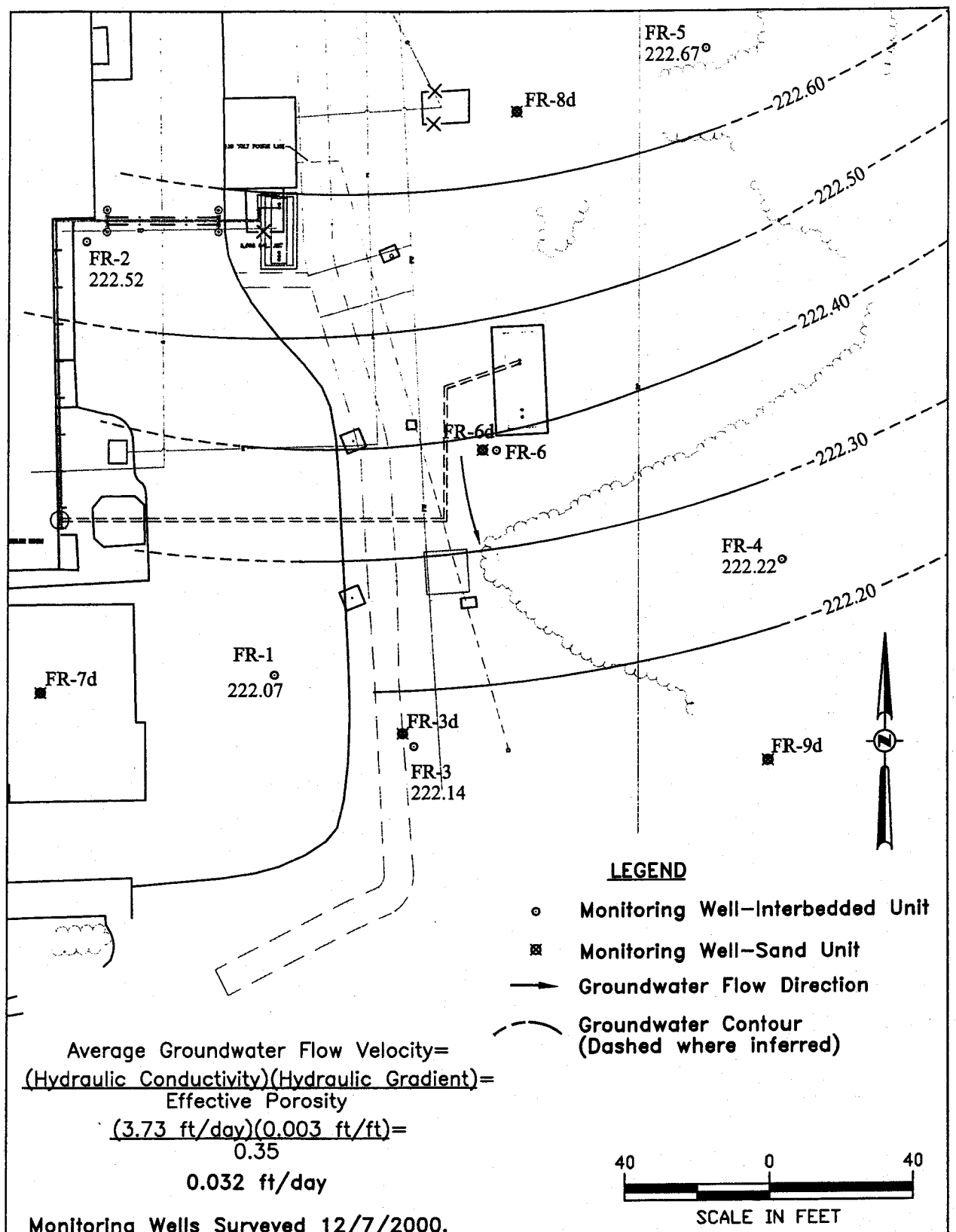
Prepared for:
Abbott Laboratories

DRAWN BY: TSH
DATE: 6/14/01
PROJECT NO.

URS
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709

Fig. 1–1


FR-5
FR-8d
FR-2
FR-6d
FR-6
FR-4
FR-1
FR-7d
FR-3d
FR-3
FR-9d
MW-20b
(161')
MW-10b/MW-10d
(117')
LEGEND
Monitoring Well–Interbedded Unit
Monitoring Well–Sand Unit
40
0
40
SCALE IN FEET
SCALE
AS SHOWN
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF
URS
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709
DESIGNED BY
SW
DATE
11JUN01
DRAWN BY
TSH
DATE
11JUN01
CHECKED BY
JN
DATE
12JUN01
APPROVED BY
DATE
Figure 2–1.
Monitoring Well Network
Abbott Labs, Laurinburg, NC
CONTRACT NO.
807175.01
DRAWING NO.
FIG2–1
REV.
0



Average Groundwater Flow Velocity=

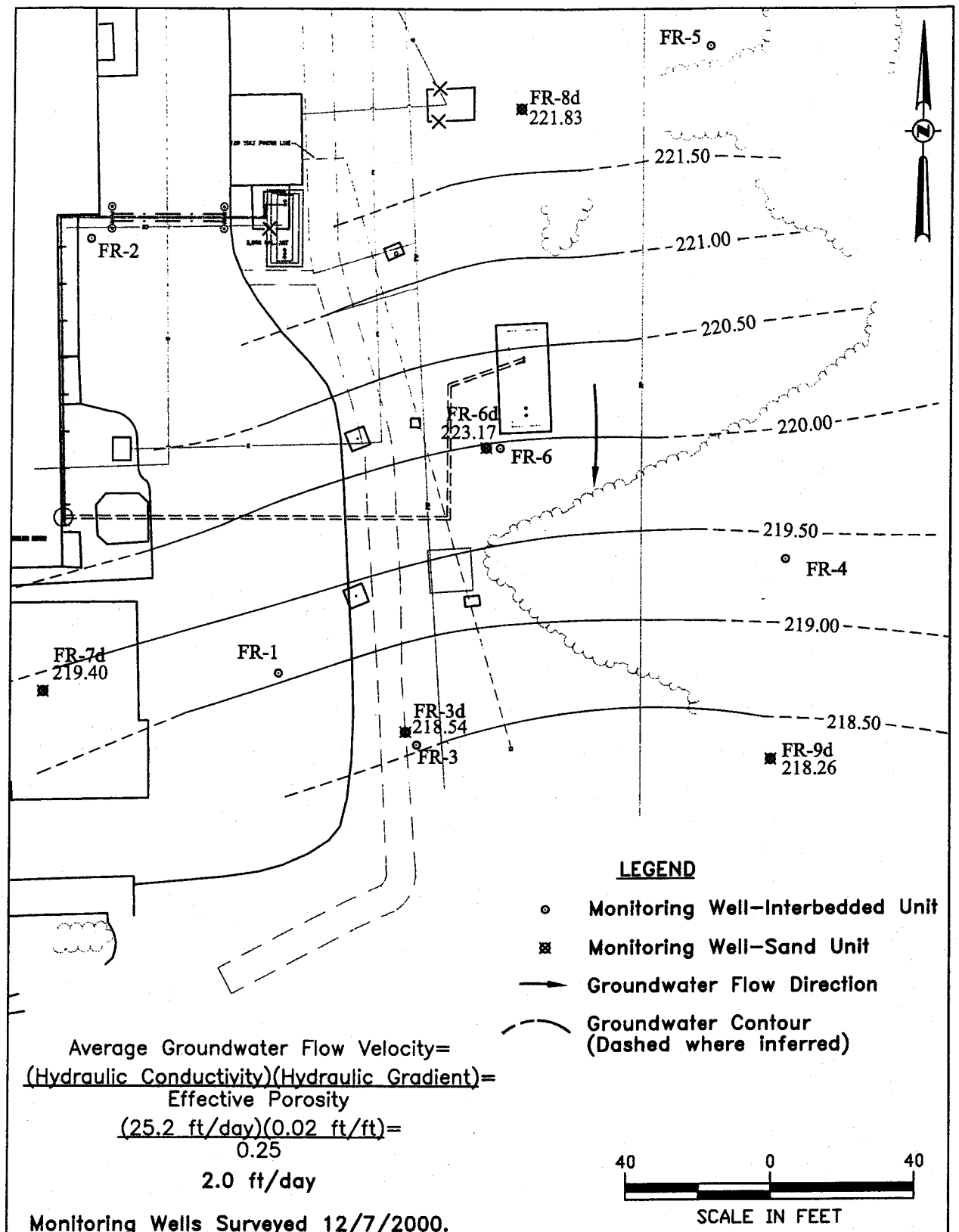
$$\frac{\text{(Hydraulic Conductivity)(Hydraulic Gradient)}}{\text{Effective Porosity}} = \frac{(3.73\ \text{ft/day})(0.003\ \text{ft/ft})}{0.35} =$$

0.032 ft/day

Monitoring Wells Surveyed 12/7/2000.

Figure 3–1. Groundwater Contour Map, Interbedded Unit October 2001, Abbott Laboratories, Laurinburg, NC

GW8–OCT01



Average Groundwater Flow Velocity=

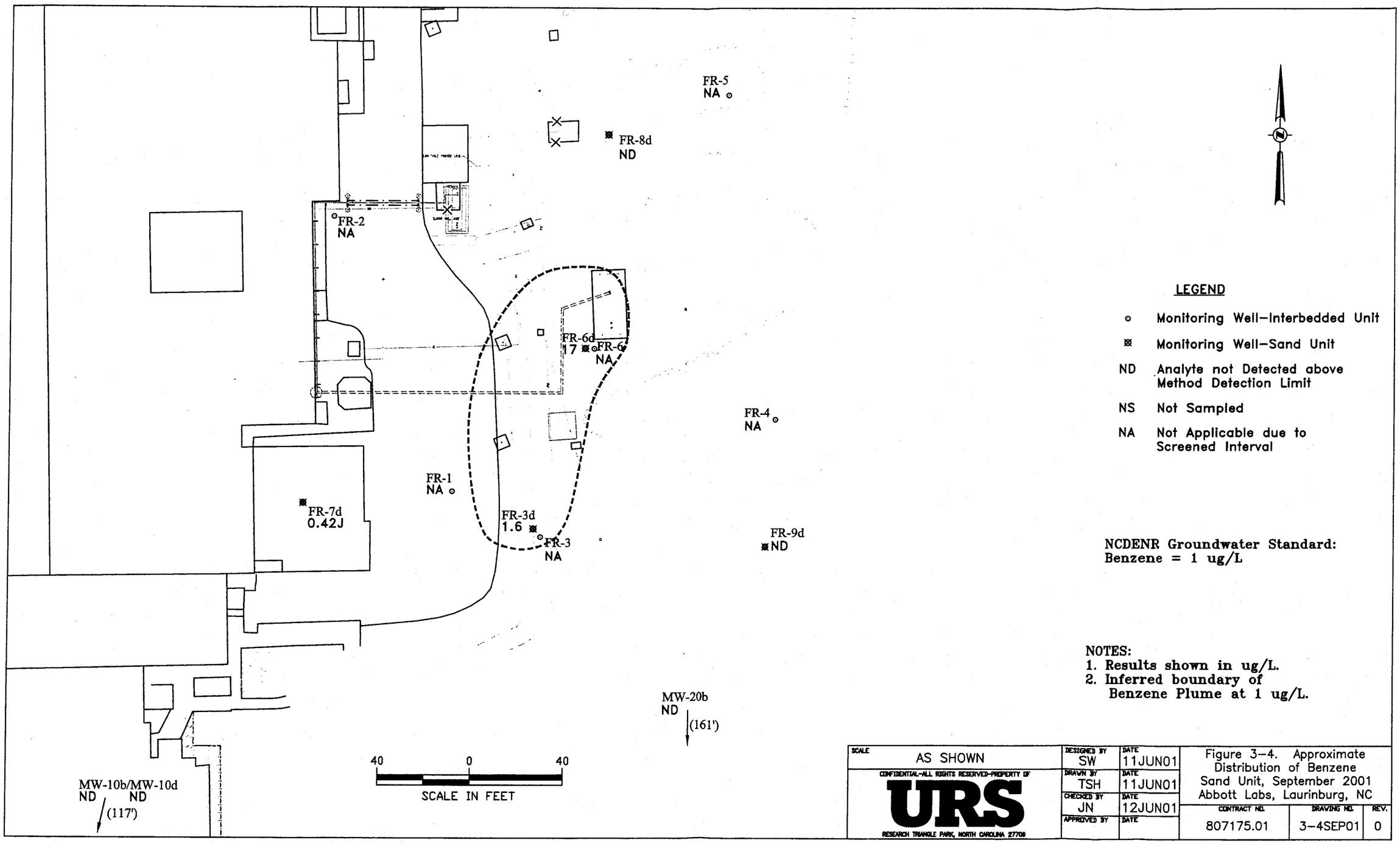
$$\frac{(\text{Hydraulic Conductivity})(\text{Hydraulic Gradient})}{\text{Effective Porosity}} = \frac{(25.2\ \text{ft/day})(0.02\ \text{ft/ft})}{0.25} =$$

2.0 ft/day

Monitoring Wells Surveyed 12/7/2000.

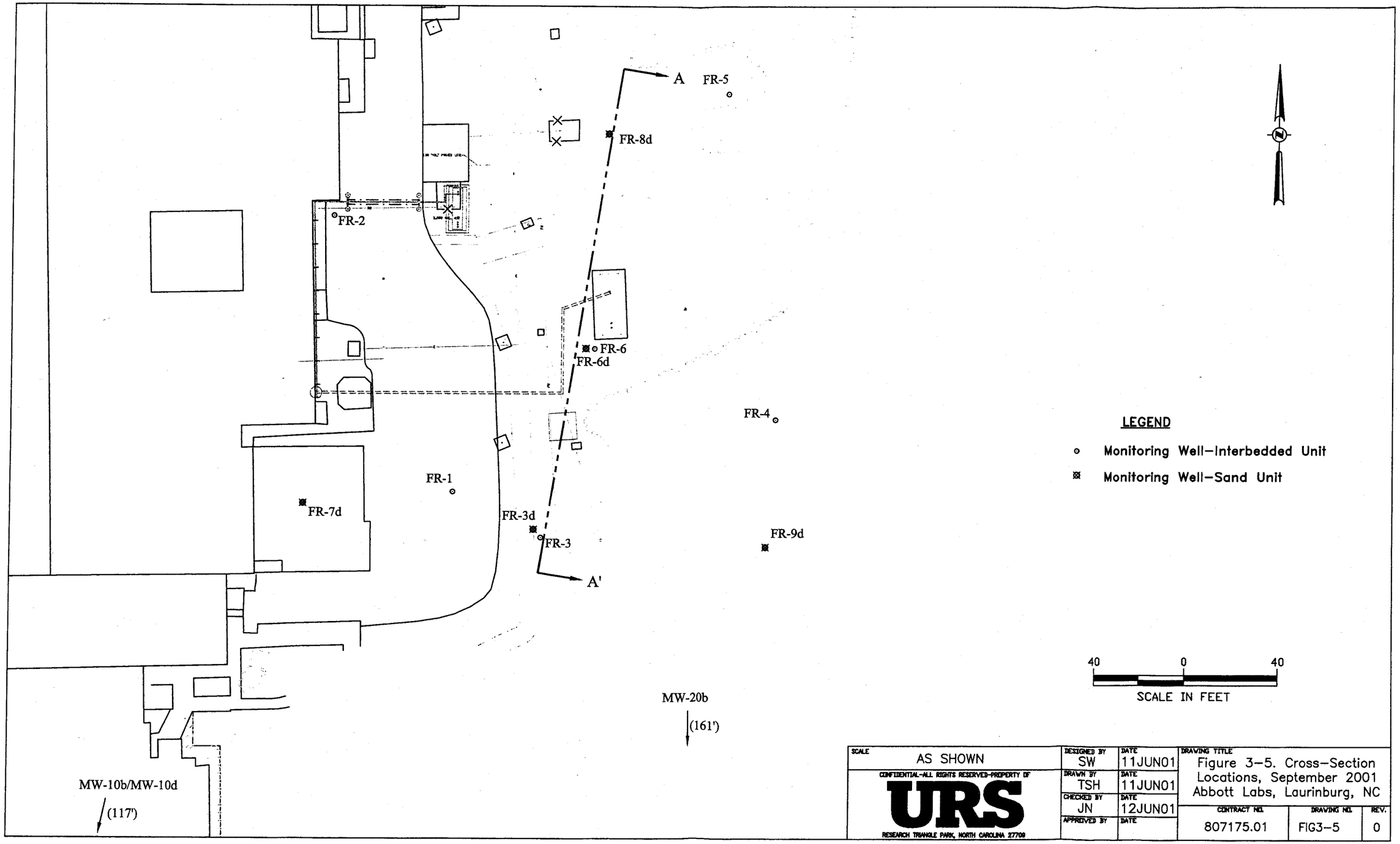
Figure 3–2. Groundwater Contour Map, Sand Unit
October 2001, Abbott Laboratories, Laurinburg, NC

GW35–OCT01



SCALE	DESIGNED BY	DATE	Figure 3–4. Approximate Distribution of Benzene Sand Unit, September 2001 Abbott Labs, Laurinburg, NC
AS SHOWN	SW	11JUN01	
CONFIDENTIAL–ALL RIGHTS RESERVED–PROPERTY OF URS RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709	DRAWN BY TSH	DATE 11JUN01	
	CHECKED BY JN	DATE 12JUN01	
	APPROVED BY	DATE	

CONTRACT NO.	DRAWING NO.	REV.
807175.01	3–4SEP01	0



SCALE	DESIGNED BY	DATE	DRAWING TITLE
AS SHOWN	SW	11JUN01	Figure 3–5. Cross–Section Locations, September 2001 Abbott Labs, Laurinburg, NC
	DRAWN BY TSH	DATE 11JUN01	
	CHECKED BY JN	DATE 12JUN01	
	APPROVED BY	DATE	

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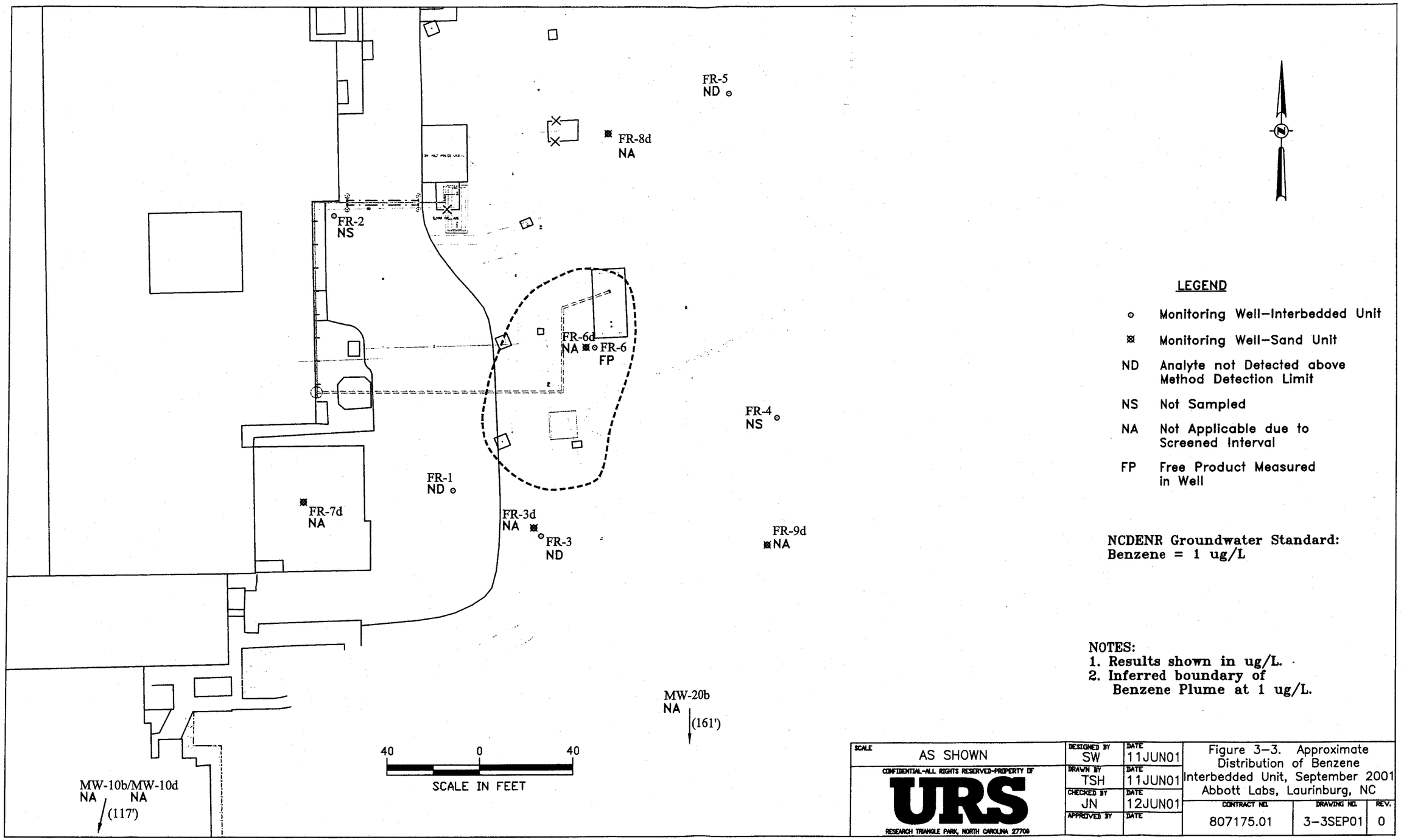
URS

RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709

CONTRACT NO.	DRAWING NO.	REV.
807175.01	FIG3–5	0



SCALE	DESIGNED BY	DATE	Figure 3–3. Approximate Distribution of Benzene Interbedded Unit, September 2001 Abbott Labs, Laurinburg, NC
AS SHOWN	SW	11JUN01	
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709	DRAWN BY TSH	DATE 11JUN01	
	CHECKED BY JN	DATE 12JUN01	CONTRACT NO. 807175.01 / DRAWING NO. 3–3SEP01 / REV. 0
	APPROVED BY	DATE	

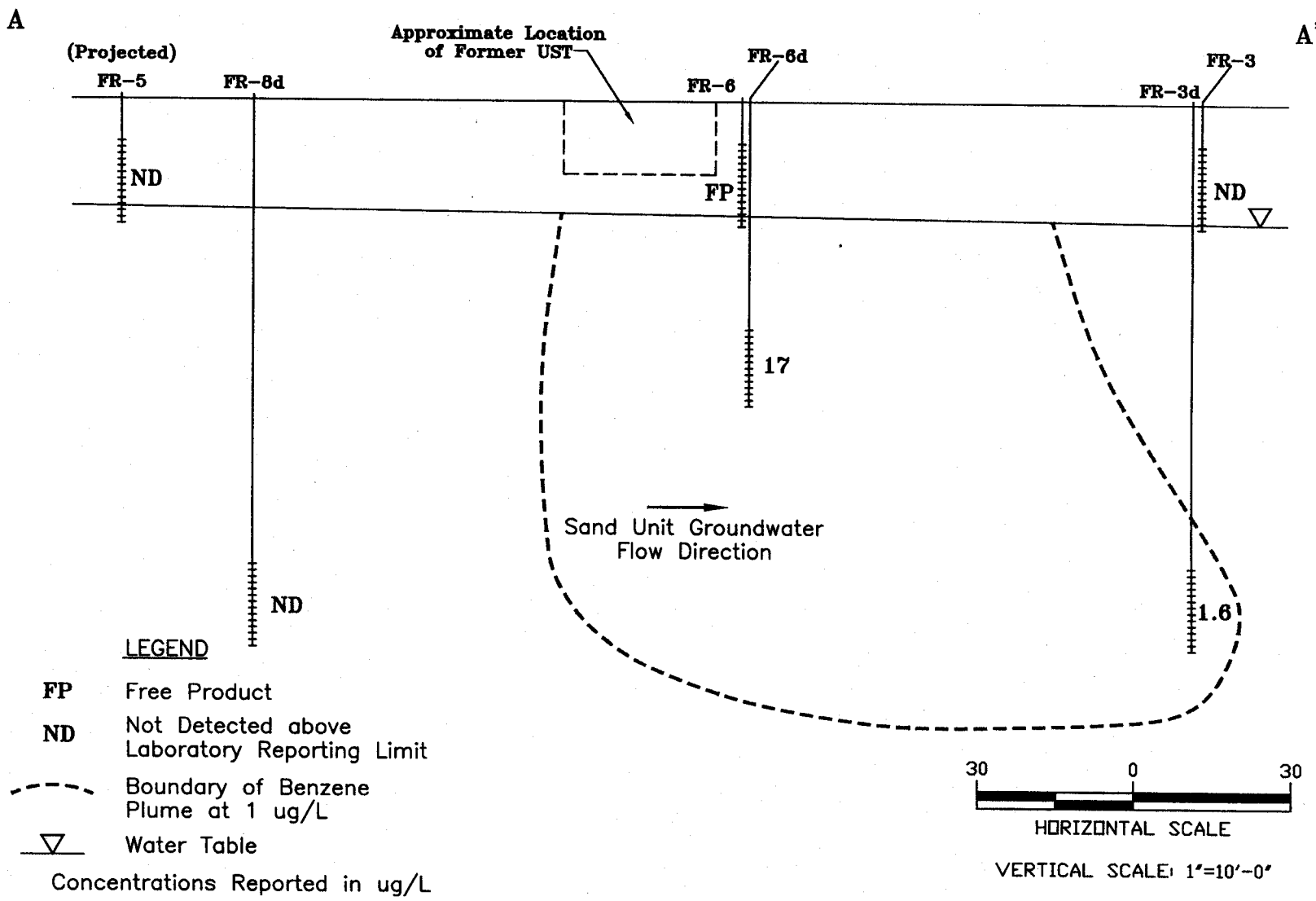
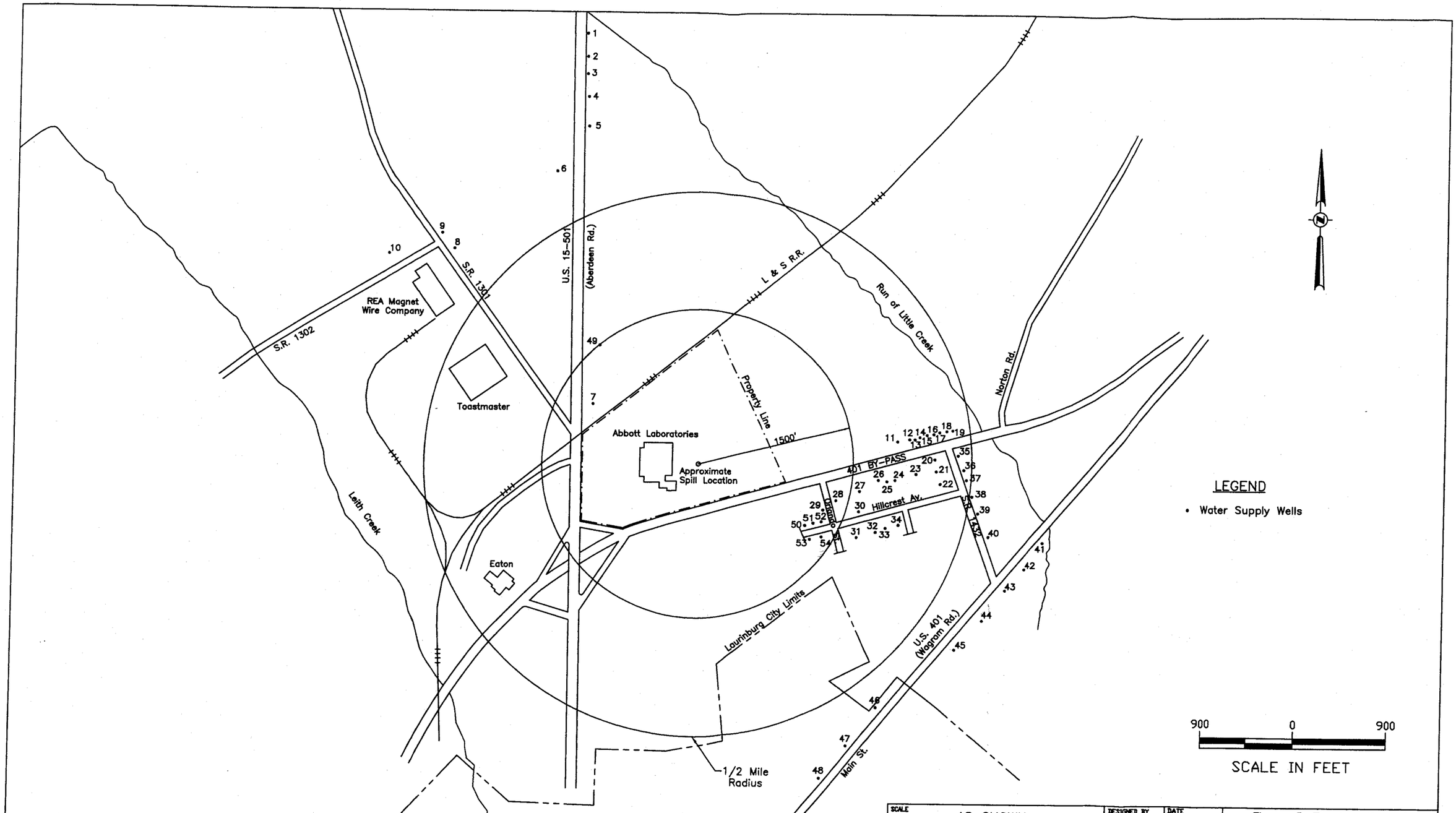


Figure 3-6. Approximate Distribution of Benzene, A-A', September 2001
Abbott Laboratories, Laurinburg, North Carolina

3-5-SEP01



SCALE	AS SHOWN	DESIGNED BY	DATE	Figure 3-7. Location of Surrounding Water Supply Wells Abbott Laboratories Laurinburg, North Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709		DRAWN BY TSH	DATE 15JUN01	
		CHECKED BY	DATE	CONTRACT NO. 807175.01 / DRAWING NO. WELLS-2 / REV. 0
		APPROVED BY	DATE	

Table 2-1

Monitoring Well Construction Data for Sampled Wells, September 2001
Abbott Laboratories
Laurinburg, North Carolina

Well ID	Installation Date	Top of Casing Elevation (ft above msl)	Total Depth (ft bgs)	Screen Interval (ft bgs)	Filter Pack (ft bgs)	Bentonite Seal (ft bgs)	Grout (ft bgs)
FR-1	5/1/00	227.02	8	3 - 8	2 - 8	1 - 2	0 - 1
FR-3	5/1/00	230.17	8	3 - 8	2 - 8	1 - 2	0 - 1
FR-3d	11/27/00	229.67	35	29 - 35	27 -35	25 - 27	0 - 25
FR-5	4/28/00	230.69	8	3 - 8	2 - 8	1 - 2	0.5 - 1
FR-6	11/27/00	230.66	8	3 - 8	2 - 8	1 - 2	0 - 1
FR-6d	4/28/00-5/1/00	230.62	19.5	14.5 - 19.5	13.5 - 19.5	11.5 - 13.5	0 - 11.5
FR-7d	11/27/00	226.45	35	29 - 35	27 -35	25 - 27	0 - 25
FR-8d	11/27/00	230.82	35	29 - 35	27 -35	25 - 27	0 - 25
FR-9d	11/27/00	230.81	35	29 - 35	27 -35	25 - 27	0 - 25
MW-10b	7/24/90	229.06	26.5	16.5 – 26.5	14 – 26.5	11 - 14	0 - 11
MW-10d	1/7/96	228.65	40	30 – 40	29 - 41	27 - 29	0 - 27
MW-20b	4/28/92	227.94	27.5	17 - 27	16 – 27.5	14 - 17	0.3 - 14

msl = mean sea level
bgs = below ground surface
Monitoring wells FR-1, -3, -5, -6 and -6d installed by Parratt Wolff, Inc.
Monitoring wells FR-3d, -7d, -8d, and -9d installed by Probe Technology, Inc.
Monitoring well MW-10b installed by Carolina Drilling.
Monitoring well MW-10d installed by Groundwater Protection, Inc.
Monitoring well MW-20b installed by Trigon.

Table 3-1

Water Level Measurements and Elevations, September and October 2001
Abbott Laboratories, Laurinburg, North Carolina

Well ID	Top of Casing Elevation (ft above msl)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft above msl)
FR-1	227.02	4.95	222.07
FR-2	227.01	4.49	222.52
FR-3	230.17	8.03	222.14
FR-3d	229.67	11.13	218.54
FR-4	230.51	8.29	222.22
FR-5	230.69	8.02	222.67
FR-6d	230.62	7.45	223.17
FR-7d	226.45	7.05	219.40
FR-8d	230.82	8.99	221.83
FR-9d	230.81	12.55	218.26
MW-10b	229.06	10.11	218.95
MW-10d	228.65	12.57	216.08
MW-20b	227.94	10.00	217.94

msl = mean sea level
TOC = top of casing
FR-2 and FR-4 were not included in the September 2001 sampling event
Water elevations from MW-10b, -10d, and -20b were not used to develop the contour map.
Water elevations for Fuel Release wells collected in October 2001 were used due to inaccurate readings collected in September 2001.

Table 3-2

Historical Water Level Elevations at FR-1
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
June 27, 2000	221.77
December 7, 2000	222.02
May 31, 2001	220.17
October 12, 2001	222.07

msl = mean sea level

Table 3-3

Historical Water Level Elevations at FR-3
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
June 27, 2000	221.14
December 7, 2000	221.61
May 31, 2001	219.89
October 12, 2001	222.14

msl = mean sea level

Table 3-4

Historical Water Level Elevations at FR-3d
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
December 7, 2000	219.09
May 31, 2001	217.89
October 12, 2001	218.54

msl = mean sea level

Table 3-5

Historical Water Level Elevations at FR-5
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
June 27, 2000	221.30
December 7, 2000	221.95
May 31, 2001	220.32
October 12, 2001	222.67

msl = mean sea level

Table 3-6

Historical Water Level Elevations at FR-6d
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
June 27, 2000	221.20
December 7, 2000	221.72
May 31, 2001	220.09
October 12, 2001	223.17

msl = mean sea level

Table 3-7

Historical Water Level Elevations at FR-7d
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
December 7, 2000	219.95
May 31, 2001	218.57
October 12, 2001	219.40

msl = mean sea level

Table 3-8

Historical Water Level Elevations at FR-8d
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
December 7, 2000	221.32
May 31, 2001	222.78
October 12, 2001	221.83

msl = mean sea level

Table 3-9

Historical Water Level Elevations at FR-9d
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
December 7, 2000	218.69
May 31, 2001	218.24
October 12, 2001	218.26

msl = mean sea level

Table 3-10

Historical Water Level Elevations at MW-10b
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
October 24, 2000	221.94
March 27, 2001	223.24
May 31, 2001	222.83
September 24, 2001	218.95

msl = mean sea level

Table 3-11

Historical Water Level Elevations at MW-10d
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
October 24, 2000	218.84
March 27, 2001	220.36
May 31, 2001	217.38
September 24, 2001	216.08

msl = mean sea level

Table 3-12

Historical Water Level Elevations at MW-20b
Abbott Laboratories, Laurinburg, North Carolina

Date	Groundwater Elevation (ft above msl)
October 24, 2000	221.40
March 27, 2001	223.19
May 31, 2001	222.82
September 24, 2001	217.94

msl = mean sea level

Table 3-13

Field Measurements, September 2001
Abbott Laboratories, Laurinburg, North Carolina

Well	Date	Time	Volume Purged (gal)	Purging Criteria	Temperature (°C)	Specific Conductance (µS/cm)	pH
FR-1	9/25/01	0930	0.1	Purged dry	21.0	38	4.9
FR-3	9/25/01	0900	2.5	3 well volumes	22.0	25	5.5
FR-3d	9/25/01	0915	1.5	3 well volumes	18.0	20	4.9
FR-5	9/25/01	0950	2.0	3 well volumes	19.0	30	5.4
FR-6d	9/25/01	1015	6.0	3 well volumes	19.0	70	5.8
FR-7d	9/25/01	0930	2.1	3 well volumes	20.0	25	4.8
FR-8d	9/25/01	0955	2.2	3 well volumes	18.0	95	5.6
FR-9d	9/25/01	1010	0.75	Purged dry	17.0	30	5.7
MW-10b	9/24/01	1232	7.0	Stabilized parameters	21.0	50	4.1
MW-10d	9/24/01	1238	7.0	Stabilized parameters	20.0	50	4.1
MW-20b	9/24/01	1344	5.5	Stabilized parameters	19.0	40	3.8

C = Celsius
gal = Gallon
µS/cm = Microsiemens per centimeter

Table 3-14

Summary of Qualified Groundwater Analytical Results, September 2001
BTEX by EPA Method 602 and SW8260B
Abbott Laboratories, Laurinburg, North Carolina

Analyte	Standard	FR-1 9/25/01	FR-3 9/25/01	FR-3d 9/25/01	FR-5 9/25/01	FR-6d 9/25/01	FR-6d (Dup) 9/25/01
Benzene	1	ND (0.1)	ND (0.1)	**1.6**	ND (0.1)	**17**	**18**
Ethylbenzene	29	ND (0.14)	ND (0.14)	ND (0.14)	ND (0.14)	2.6	2.7
Toluene	1000	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)	0.43 J	0.44 J
Total xylenes	530	ND (0.27)	ND (0.27)	ND (0.27)	ND (0.27)	ND (0.27)	ND (0.27)

All results and standards presented in µg/L
ND ( ) =Not detected at specified detection limit
J = Estimated value
Dup = Duplicate sample
Bold values exceed standards.

Analyte	Standard	FR-7d 9/25/01	FR-8d 9/25/01	FR-9d 9/25/01	MW-10b 9/24/01	MW-10d 9/24/01	MW-20b 9/24/01
Benzene	1	0.42 J	ND (0.1)	ND (0.1)	ND (0.0465)	0.0507 J	ND (0.0465)
Ethylbenzene	29	ND (0.14)	ND (0.14)	ND (0.14)	ND (0.0469)	ND (0.0469)	ND (0.0469)
Toluene	1000	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.0236)	ND (0.0236)	ND (0.0236)
Total xylenes	530	ND (0.27)	ND (0.27)	ND (0.27)	ND (0.0869)	ND (0.0869)	ND (0.0869) UJ

All results and standards presented in µg/L
ND ( ) =Not detected at specified method detection limit
J = Estimated value
UJ = Not detected and detection limit is estimated
Samples from MW-10b, -10d, and -20b were analyzed for VOCs by SW8260B.

Table 3-15

Historical Analytical Results for FR-3d
Abbott Laboratories, Laurinburg, North Carolina

Analyte	Groundwater Standard	December 2000	May 2001	September 2001
Benzene	1 µg/L	**2**	ND (0.1)	**1.6**

Target analytes not listed were not detected
Bold values exceed standards
ND ( ) =Not detected at specified method detection limit

Table 3-16

Historical Analytical Results for FR-6d
Abbott Laboratories, Laurinburg, North Carolina

Analyte	Groundwater Standard	May 2000	December 2000	May 2001	September 2001
Benzene	1 µg/L	**21**	**17**	**3.7**	**17**
Toluene	1000 µg/L	1.9	ND (0.13)	ND (0.13)	0.43 J
Ethylbenzene	29 µg/L	11	2.2	ND (0.14)	2.6
Total xylenes	530 µg/L	10	ND (0.27)	ND (0.27)	ND (0.27)

Target analytes not listed were not detected
Bold values exceed standards
ND ( ) =Not detected at specified method detection limit
J = Estimated value

Table 3-17

Historical Analytical Results for FR-7d
Abbott Laboratories, Laurinburg, North Carolina

Analyte	Groundwater Standard	May 2001	September 2001
Benzene	1 µg/L	0.36 J	0.42 J

Target analytes not listed were not detected
J = Estimated value

Table 3-18

Historical Analytical Results for MW-10d
Abbott Laboratories, Laurinburg, North Carolina

Analyte	Groundwater Standard	May 2001	September 2001
Benzene	1 µg/L	ND (0.1)	0.0507 J

Target analytes not listed were not detected
ND ( ) =Not detected at specified method detection limit
J = Estimated value.

Table 3-19

Free Product Measurements for FR-6
Abbott Laboratories, Laurinburg, North Carolina

Date	FreeProduct Thickness (in.)	Depth to Free Product (ft)
12/18/00	1/8	NA
12/31/00	3/4	NA
1/8/01	2 1/4	NA
1/9/01	1 1/4	NA
1/15/01	1 1/2	7.20
1/23/01	0	6.40
1/31/01	1/2	6.00
2/8/01	2	NA
2/23/01	0	4.75
2/28/01	0	4.40
3/8/01	0	4.55
3/13/01	0	4.75
3/22/01	0	3.60
3/28/01	0	4.10
4/21/01	1/2	4.60
4/30/01	0	5.10
5/7/01	0	5.60
5/15/01	1	6.30
5/22/01	4	7.10
5/25/01	1	8.50
6/7/01	3	7.4
6/14/01	2	8.5
6/21/01	1	8.6
6/30/01	1	8.6
7/9/01	5	8.3
7/16/01	4	7.4
7/25/01	4	8.4
7/31/01	5	8.3
8/7/01	1	8.6
8/10/01	1	8.6
8/20/01	1	7.3
8/31/01	3	6.1
9/13/01	2.5	7.80
9/24/01	0.03	7.32

NA = Information not available

APPENDIX A

GROUNDWATER SAMPLING ANALYTICAL REPORTS

QUALIFIED ANALYTICAL DATA
FOR SAMPLES COLLECTED FROM FUEL RELEASE WELLS

Abbott Laboratories, Laurinburg, NC
Data Evaluation Report
URS Corporation – North Carolina, P.C., November 2001

Introduction

On September 25, 2001, URS Corporation – North Carolina, P.C. (URS-NC) collected nine groundwater samples (FR-1, FR-3, FR-3d, FR-5, FR-6d, FR-7d, FR-8d, FR-9d, and D-99) at the Abbott Laboratories facility in Laurinburg, NC. The groundwater samples were shipped to Severn Trent Laboratories (STL) in Tallahassee, Florida for the analysis of benzene, toluene, ethyl benzene, and xylenes by EPA Method 602. A trip blank was included with the shipment of samples for a volatile organic analysis (VOA). The results were reported by STL under work order number T1-32876.

URS-NC reviewed the data to determine if data quality objectives were met. Qualitative and quantitative limitations associated with the analytical results were identified and defined based on the results of specific quality control (QC) criteria. Accuracy was determined from the review of holding times, spike recoveries, and blank contamination. Precision was based on the evaluation of laboratory duplicate results. The data review process used for this project was modeled after the *Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA, October 1999)*. Sample results have been appropriately qualified based on criteria of the data review process. Results of the data validation are summarized below.

Sample Condition upon Receipt and Holding Times

All samples were received intact and in good condition by the laboratory. Samples were analyzed within the EPA-established holding time of 14 days for preserved samples.

Calibration

Control limits for initial and continuing calibrations are established to ensure that the instrument is capable of producing accurate quantitative and qualitative data at the beginning and throughout each of the analyses.

The appropriate number of standards was used by the laboratory to establish the initial calibration. Laboratory specifications were met during the initial calibration of September 18 and continuing calibrations of September 28 and October 1 on instrument TVGPPID2.

Laboratory Control Samples

Laboratory control samples (LCS) are blank samples fortified (spiked) with known concentrations of analyte of interest. The percent recoveries of the LCS are used to assess digestion efficiencies and overall analytical accuracy. Precision is evaluated based on the relative percent difference (RPD) between duplicate results.

The results of the LCS and duplicate analyses met laboratory specification limits for all target analytes included in the standard cocktail.

Blanks

Laboratory blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. The blanks are used to ensure that the investigative samples are not contaminated during the sample preparation, sample analysis, or from a previous sample analysis (instrument carry-over). Trip blanks are analyte-free water samples that accompany volatile investigative samples during all stages of shipment, storage, and analysis. The trip blanks are used to assess the potential for artificial introduction of VOC into the investigative samples during the transportation and sample handling processes.

Target analytes were not detected in the method and trip blank.

Surrogate Spikes

System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the field samples, but which are chemically similar to the organic analytes of interest. Surrogate recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

Surrogate spike recoveries fell within laboratory specification limits during the VOA of all project samples.

Field Duplicate Results

Field duplicate samples are used to demonstrate acceptable precision during the sample collection process.

Acceptable precision was observed during the analysis of field duplicate samples FR-6d and D-99.

SEVERN TRENT SERVICES
2846 Industrial Plaza Dr. • Tallahassee, FL 32301 • Tel: 850 878 3994 • Fax: 850 878 9504 • www.stl-inc.com
STL Tallahassee

LOG NO: T1-32876
Received: 26 SEP 01
Reported: 09 OCT 01

Ms. Shannon Wallin
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Cl Project No: 807175.01

Project: Abbott-Laurinburg Fuel Release
Sampled By: Client
Code: 095511012

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
32876-1	FR-3	09-25-01/09:00	URSA01
32876-2	FR-3d	09-25-01/09:15	URSA01
32876-3	FR-7d	09-25-01/09:35	URSA01
32876-4	FR-1	09-25-01/09:40	URSA01
32876-5	FR-5	09-25-01/09:55	URSA01

PARAMETER	32876-1	32876-2	32876-3	32876-4	32876-5
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	1.6	0.42J	<1.0	<1.0
Toluene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes, ug/l	<2.0	<2.0	<2.0	<2.0	<2.0
Prep Date	09.28.01	09.28.01	09.28.01	09.28.01	09.28.01
Analysis Date	09.28.01	09.28.01	09.28.01	09.28.01	09.28.01
Dilution Factor	1	1	1	1	1

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after the National Functional Guidelines for Organic and Inorganic Data Review (US EPA, October 1999 and February 1994, respectively)

SEVERN TRENT SERVICES
2846 Industrial Plaza Dr. • Tallahassee, FL 32301 • Tel: 850 878 3994 • Fax: 850 878 9504 • www.stl-inc.com
STL Tallahassee

LOG NO: T1-32876
Received: 26 SEP 01
Reported: 09 OCT 01

Ms. Shannon Wallin
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Cl Project No: 807175.01

Project: Abbott-Laurinburg Fuel Release
Sampled By: Client
Code: 095511012

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
32876-6	FR-8d	09-25-01/10:00	URSA01
32876-7	FR-9d	09-25-01/10:20	URSA01
32876-8	FR-6d	09-25-01/10:25	URSA01
32876-9	D-99	09-25-01/10:30	URSA01
32876-10	Trip Blank	09-25-01	URSA01

PARAMETER	32876-6	32876-7	32876-8	32876-9	32876-10
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	<1.0	17	18	<1.0
Toluene, ug/l	<1.0	<1.0	0.43J	0.44J	<1.0
Ethylbenzene, ug/l	<1.0	<1.0	2.6	2.7	<1.0
Xylenes, ug/l	<2.0	<2.0	<2.0	<2.0	<2.0
Prep Date	09.28.01	09.28.01	09.28.01	09.28.01	09.28.01
Analysis Date	09.28.01	09.28.01	09.28.01	09.28.01	09.28.01
Dilution Factor	1	1	1	1	1

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after the National Functional Guidelines for Organic and Inorganic Data Review (US EPA, October 1999 and February 1994, respectively)

EXCERPT FROM QUALIFIED ANALYTICAL DATA FOR SAMPLES COLLECTED FROM SOLVENT RELEASE WELLS

Abbott Laboratories, Laurinburg, NC
Data Evaluation Report
URS Corporation – North Carolina, P.C., November 2001

Introduction

On September 24, 2001, URS Corporation – North Carolina, P.C. (URS-NC) collected eighteen (18) groundwater samples, including two field duplicate samples, at the Abbott Laboratories facility in Laurinburg, NC for the analysis of volatile organic compounds (VOC) by SW-846 Method 8260B. The samples were shipped September 25 to Severn Trent Laboratories (STL) of Austin, Texas. A trip blank was included in the cooler for a volatile organic analysis (VOA).

URS-NC reviewed the analytical results reported by the laboratory under work order number 20109113. The data evaluation was modeled after the Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA, October 1999). Qualitative and quantitative limitations associated with the analytical results were identified and defined based on the results of specific quality control (QC) criteria. Accuracy was determined from the review of calibration data and spike recoveries. Precision was based on the evaluation of laboratory duplicate results. Sensitivity was evaluated by comparing reported detection limits to project-specific maximum reporting limits. Representativeness was evaluated from the review of holding time and blank data. Sample results, presented in the Section IV of the analytical report, have been appropriately qualified based on criteria of the review process. The results of the data evaluation are summarized below.

Sample Condition upon Receipt and Holding Times

All samples were received intact and in good condition by the laboratory. The temperature (2.5°C) of the sample containers upon receipt met laboratory storage requirements of 1-4°C. STL verified that volatile organic analysis (VOA) samples were properly preserved in the field with acid. Air bubbles were not observed in any VOA vials. Samples, which were preserved with hydrochloric acid, were analyzed within EPA-established holding times of 14 days for VOC.

Calibration

Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity. The tuning compound mass-ion abundance criteria for the VOA were reported within control limits. All samples were analyzed for VOC by GC/MS within twelve hours of the performance check standard.

Since the results of the initial calibration were not included in the laboratory report, the evaluation was based on the review of the continuing calibration data. Laboratory specifications of 80-120% recovery for selected analytes were met during all continuing calibrations; however, the recovery of the standard was not within 80-120% of the true value for the following target analytes:

- Continuing calibration of October 4 @14:46 on instrument MSDA: bromoform (67%), carbon disulfide (75%), and dibromochloromethane (78%)
- Continuing calibration of 10/5/01 @03:31 on instrument MSDA: 1,1,2-trichlorotrifluoroethane (77%)
- Continuing calibration of 10/5/01 @17:06 on instrument MSDA: bromoform (58%), dibromochloromethane (77%)

When the recovery was less than 80%, associated sample results were qualified as estimated (J, UJ).

Laboratory Control Samples

Laboratory control samples (LCS) are blank samples fortified (spiked) with known concentrations of analyte of interest. The percent recoveries of the LCS are used to assess digestion efficiencies and overall analytical accuracy. Precision is evaluated based on the relative percent difference (RPD) between duplicate results.

The results of the LCS and duplicate analyses met laboratory specification limits for all target analytes included in the standard cocktail.

Blanks

Laboratory blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. The blanks are used to ensure that the investigative samples are not contaminated during the sample preparation, sample analysis, or from a previous sample analysis (instrument carry-over). Trip blanks are analyte-free water samples that accompany volatile investigative samples during all stages of shipment, storage, and analysis. The trip blanks are used to assess the potential for artificial introduction of VOC into the investigative samples during the transportation and sample handling processes.

Methylene chloride, a common laboratory blank contaminant, was detected during the VOA of method blank 1029683 at a concentration of 0.0445 micrograms per liter. It was also detected in the trip blank at a similar concentration (0.0645 micrograms per liter). Sample results that were not significantly greater (ten times) than that detected in the blanks have been qualified due to the presence of blank contamination. Affected sample results have been flagged "ND" and detection limits elevated to the amount present in the sample and flagged with a "U".

The laboratory suspected carry-over for 1,1,2-trichlorotrifluoroethane during the October 4 analysis of sample MW-21B. The sample was reanalyzed and similar results were obtained for 1,1,2-trichlorotrifluoroethane. Qualification of the data is not required.

Surrogate Spikes

Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy during organic analyses.

Surrogate spike recoveries fell within laboratory specification limits during the VOA of all samples.

Matrix Spikes

Matrix spikes (MS) are samples spiked with known concentrations of analytes of interest. MS percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

The criteria for accuracy and precision were not met during the MS and MS duplicate (MSD) analysis of sample MW-20B for the following analytes:

Parameter	Outlier	QC Limits	Action
Benzene	70%R (MSD)	71-133%R	None, MS recovery met QC limits
Bromodichloromethane	51, 50%R	57-135%R	UJ Non-detect
Bromoform	19, 19%R	23-151%R	UJ Non-detect
Carbon tetrachloride	45, 45%R	46-150%R	UJ Non-detect
Chlorobenzene	66%R, 15%RPD	77-129%R, <14%RPD	None, MS recovery within QC limits and analyte was not detected
Dibromochloromethane	31, 31%R	45-137%R	UJ Non-detect
Ethyl benzene	67%R, 16%RPD	75-131%R, <14%RPD	None, MS recovery within QC limits and analyte was not detected
Styrene	63, 56%R	68-136%R	UJ Non-detect
Tetrachloroethene	68%R, 19%RPD	69-137%R, <16%RPD	None, MS recovery within QC limits and analyte was not detected
Toluene	67%R (MSD)	70-132%R	None, MS recovery met QC limits
1,1,2-Trichloroethane	59%R (MSD)	67-135%R	None, MS recovery met QC limits
m&p-Xylenes	64%R, 18%RPD	76-134%R, <15%RPD	None, MS recovery within QC limits and analyte was not detected
o-Xylenes	76, 64%R, 17%RPD	77-131%R, <15%RPD	UJ Non-detect

Affected results were qualified as indicated above in sample MW-20B due to matrix interference.

Field Duplicates

Field duplicate samples are used to demonstrate acceptable precision during the sample collection process.

The criteria for precision were met during the VOA of the field duplicate samples MW-16D and D-99, and MW-23D and D-100.

Sample Results

Sample results were provided for all volatile organic analytes presented in the Analytical Plan. Sample detection limits were equal to or less than the reporting limits for sample analyses conducted at a 5-fold dilution or better.

When sample concentrations exceed the calibration range (flagged with an E by the laboratory), the results from the reanalysis that are within the calibration range are considered more accurate. The results from the original analysis have been qualified as unusable (R).

The laboratory flagged sample results less than the practical quantitation limit and sample detection limit with a J and U, respectively. All positive sample results that are less than the practical quantitation limit are considered estimated (J).

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	D-99	D-99	MW-10B
Lab Sample ID	2010911310	2010911310	2010911306
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 13:00	09/25/2001 13:00	09/25/2001 12:35
Date/Time Prepared	10/05/2001 11:09	10/05/2001 21:25	10/04/2001 22:39
Date/Time Analyzed	10/05/2001 11:09	10/05/2001 21:25	10/04/2001 22:39
Dilution Factor	5.0000	1.0000	50.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Acetone	67-64-1	~~ND~~	R	~~6.28~~	~~0.000~~	ND		1.26	0.000	~~ND~~	R	~~62.8~~	0.000
Benzene	71-43-2	0.384	J	0.232	0.000	0.355	J	0.0465	0.000	ND		2.32	0.000
Bromodichloromethane	75-27-4	ND		0.264	0.000	ND		0.0528	0.000	ND		2.64	0.000
Bromoform	75-25-2	ND		0.530	0.000	ND	UJ	0.106	0.000	ND		5.30	0.000
Bromomethane	74-83-9	ND		0.227	0.000	ND		0.0454	0.000	ND		2.27	0.000
2-Butanone (MEK)	78-93-3	ND		14.1	0.000	ND		2.83	0.000	ND		141	0.000
Carbon disulfide	75-15-0	ND		0.208	0.000	ND		0.0415	0.000	ND		2.08	0.000
Carbon tetrachloride	56-23-5	ND		0.276	0.000	ND		0.0553	0.000	ND		2.76	0.000
Chlorobenzene	108-90-7	ND		0.202	0.000	ND		0.0404	0.000	ND		2.02	0.000
Chloroethane	75-00-3	ND		0.378	0.000	ND		0.0755	0.000	ND		3.78	0.000
Chloroform	67-66-3	0.478	J	0.169	0.000	0.546		0.0338	0.000	ND		1.69	0.000
Chloromethane	74-87-3	ND		0.254	0.000	ND		0.0509	0.000	ND		2.54	0.000
Dibromochloromethane	124-48-1	ND		0.473	0.000	ND	UJ	0.0946	0.000	ND		4.73	0.000
1,1-Dichloroethane	75-34-3	ND		0.222	0.000	0.700		0.0445	0.000	ND		2.22	0.000
1,2-Dichloroethane	107-06-2	1.60	J	0.316	0.000	1.68		0.0632	0.000	ND		3.16	0.000
1,1-Dichloroethene	75-35-4	~~0.598~~	J	~~0.246~~	~~0.000~~	0.559		0.0492	0.000	ND		2.46	0.000
cis-1,2-Dichloroethene	156-59-2	116		0.176	0.000	~~120~~	ER	~~0.0353~~	~~0.000~~	17.5	J	1.76	0.000
trans-1,2-Dichloroethene	156-60-5	~~ND~~	R	~~0.215~~	~~0.000~~	0.119	J	0.0430	0.000	ND		2.15	0.000
1,2-Dichloropropane	78-87-5	ND		0.260	0.000	ND		0.0519	0.000	ND		2.60	0.000
cis-1,3-Dichloropropene	10061-01-5	ND		0.263	0.000	ND		0.0526	0.000	ND		2.63	0.000
trans-1,3-Dichloropropene	10061-02-6	~~ND~~	J	~~0.243~~	~~0.000~~	ND		0.0486	0.000	~~ND~~	J	~~2.43~~	~~0.000~~

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	D-99	D-99	MW-10B
Lab Sample ID	2010911310	2010911310	2010911306

Continued

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Ethylbenzene	100-41-4	~~ND~~	R	~~0.234~~	~~0.000~~	ND		0.0469	0.000	~~ND~~	R	~~2.34~~	~~0.000~~
2-Hexanone	591-78-6	ND		4.19	0.000	ND		0.838	0.000	ND		41.9	0.000
4-Methyl-2-pentanone (MIBK)	108-10-1	ND		2.36	0.000	ND		0.473	0.000	ND		23.6	0.000
Methylene chloride	75-09-2	ND	B	0.105	0.000	ND	B	0.0210	0.000	ND	B	1.05	0.000
Styrene	100-42-5	ND		0.148	0.000	ND		0.0295	0.000	ND		1.48	0.000
1,1,2,2-Tetrachloroethane	79-34-5	ND		0.543	0.000	ND		0.109	0.000	ND		5.43	0.000
Tetrachloroethene	127-18-4	ND		0.514	0.000	ND		0.103	0.000	ND		5.14	0.000
Toluene	108-88-3	ND		0.118	0.000	ND		0.0236	0.000	ND		1.18	0.000
1,1,1-Trichloroethane	71-55-6	ND		0.256	0.000	ND		0.0511	0.000	ND		2.56	0.000
1,1,2-Trichloroethane	79-00-5	ND		0.244	0.000	ND		0.0489	0.000	ND		2.44	0.000
Trichloroethene	79-01-6	~~1.51~~		~~0.253~~	~~0.000~~	2.78		0.0506	0.000	~~ND~~		~~2.53~~	~~0.000~~
1,1,2-Trichlorotrifluoroethane	76-13-1	157	J	0.264	0.000	~~160~~	ER	~~0.0529~~	~~0.000~~	171		2.64	0.000
Vinyl acetate	108-05-4	~~ND~~	R	~~0.862~~	~~0.000~~	ND		0.172	0.000	~~ND~~	R	~~8.62~~	~~0.000~~
Vinyl chloride	75-01-4	ND		0.250	0.000	0.341	J	0.0501	0.000	ND		2.50	0.000
p-Xylene/m-Xylene	106-42-3	ND		~~0.434~~	0.000	ND		0.0869	0.000	ND		4.34	0.000
o-Xylene	95-47-6	~~ND~~		~~0.204~~	~~0.000~~	ND		0.0409	0.000	~~ND~~		~~2.04~~	~~0.000~~

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after *the National Functional Guidelines for Organic and Inorganic Data Review*

SECTION IV
Analytical Results
Surrogates

MS-VOA
SW8260B

Client Sample ID	D-99	D-99	MW-10B
Lab Sample ID	2010911310	2010911310	2010911306
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 13:00	09/25/2001 13:00	09/25/2001 12:35
Date/Time Prepared	10/05/2001 11:09	10/05/2001 21:25	10/04/2001 22:39
Date/Time Analyzed	10/05/2001 11:09	10/05/2001 21:25	10/04/2001 22:39
Dilution Factor	5.0000	1.0000	50.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Surrogate Compound	% Recovery	Limits	F	% Recovery	Limits	F	% Recovery	Limits	F
1-Bromo-4-fluorobenzene	98	77-117		99	77-117		96	77-117	
1,2-Dichloroethane-d4	108	61-143		104	61-143		106	61-143	
Toluene-d8	102	87-113		103	87-113		104	87-113	

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after *the National Functional Guidelines for Organic and Inorganic Data Review*

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-10B	MW-10D	MW-10D
Lab Sample ID	2010911306	2010911307	2010911307
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 12:35	09/25/2001 12:40	09/25/2001 12:40
Date/Time Prepared	10/05/2001 18:31	10/04/2001 23:10	10/05/2001 19:00
Date/Time Analyzed	10/05/2001 18:31	10/04/2001 23:10	10/05/2001 19:00
Dilution Factor	1.0000	50.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Acetone	67-64-1	ND		1.26	0.000	~~ND~~	R	~~62.8~~	~~0.000~~	ND		1.26	0.000
Benzene	71-43-2	ND		0.0465	0.000	ND		2.32	0.000	0.0507	J	0.0465	0.000
Bromodichloromethane	75-27-4	ND		0.0528	0.000	ND		2.64	0.000	ND		0.0528	0.000
Bromoform	75-25-2	ND	UJ	0.106	0.000	ND		5.30	0.000	ND	UJ	0.106	0.000
Bromomethane	74-83-9	ND		0.0454	0.000	ND		2.27	0.000	ND		0.0454	0.000
2-Butanone (MEK)	78-93-3	ND		2.83	0.000	ND		141	0.000	ND		2.83	0.000
Carbon disulfide	75-15-0	ND		0.0415	0.000	ND		2.08	0.000	ND		0.0415	0.000
Carbon tetrachloride	56-23-5	ND		0.0553	0.000	ND		2.76	0.000	ND		0.0553	0.000
Chlorobenzene	108-90-7	ND		0.0404	0.000	ND		2.02	0.000	ND		0.0404	0.000
Chloroethane	75-00-3	ND		0.0755	0.000	ND		3.78	0.000	ND		0.0755	0.000
Chloroform	67-66-3	0.125	J	0.0338	0.000	ND		1.69	0.000	0.240	J	0.0338	0.000
Chloromethane	74-87-3	ND		0.0509	0.000	ND		2.54	0.000	ND		0.0509	0.000
Dibromochloromethane	124-48-1	ND	UJ	0.0946	0.000	ND		4.73	0.000	ND	UJ	0.0946	0.000
1,1-Dichloroethane	75-34-3	ND		0.0445	0.000	ND		2.22	0.000	ND		0.0445	0.000
1,2-Dichloroethane	107-06-2	ND		0.0632	0.000	ND		3.16	0.000	0.210	J	0.0632	0.000
1,1-Dichloroethene	75-35-4	1.70		0.0492	0.000	5.10	J	2.46	0.000	4.48		0.0492	0.000
cis-1,2-Dichloroethene	156-59-2	15.2		0.0353	0.000	35.6		1.76	0.000	34.1		0.0353	0.000
trans-1,2-Dichloroethene	156-60-5	0.134	J	0.0430	0.000	ND		2.15	0.000	0.157	J	0.0430	0.000
1,2-Dichloropropane	78-87-5	ND		0.0519	0.000	ND		2.60	0.000	ND		0.0519	0.000
cis-1,3-Dichloropropene	10061-01-5	ND		0.0526	0.000	ND		2.63	0.000	ND		0.0526	0.000
trans-1,3-Dichloropropene	10061-02-6	ND		0.0486	0.000	~~ND~~	✓	~~2.43~~	~~0.000~~	ND		0.0486	0.000

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after *the National Functional Guidelines for Organic and Inorganic Data Review*

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-10B	MW-10D	MW-10D
Lab Sample ID	2010911306	2010911307	2010911307

Continued

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Ethylbenzene	100-41-4	ND		0.0469	0.000	~~ND~~	R	~~2.34~~	~~0.000~~	ND		0.0469	0.000
2-Hexanone	591-78-6	ND		0.838	0.000	ND		41.9	0.000	ND		0.838	0.000
4-Methyl-2-pentanone (MIBK)	108-10-1	ND		0.473	0.000	ND		23.6	0.000	ND		0.473	0.000
Methylene chloride	75-09-2	0.0770 U	JB ND	0.0210	~~0.000~~	ND	B	1.05	0.000	0.280 U	JB ND	0.0210	0.000
Styrene	100-42-5	ND		0.0295	0.000	ND		1.48	0.000	ND		0.0295	0.000
1,1,2,2-Tetrachloroethane	79-34-5	ND		0.109	0.000	ND		5.43	0.000	ND		0.109	0.000
Tetrachloroethene	127-18-4	0.205	J	0.103	0.000	ND		5.14	0.000	0.185	J	0.103	0.000
Toluene	108-88-3	ND		0.0236	0.000	ND		1.18	0.000	ND		0.0236	0.000
1,1,1-Trichloroethane	71-55-6	ND		0.0511	0.000	ND		2.56	0.000	ND		0.0511	0.000
1,1,2-Trichloroethane	79-00-5	ND		0.0489	0.000	ND		2.44	0.000	ND		0.0489	0.000
Trichloroethene	79-01-6	1.92		0.0506	0.000	~~1.54~~	U ✓	~~2.53~~	~~0.000~~	2.68		0.0506	0.000
1,1,2-Trichlorotrifluoroethane	76-13-1	~~161~~	ER	~~0.0529~~	~~0.000~~	277		2.64	0.000	~~264~~	ER	~~0.0529~~	~~0.000~~
Vinyl acetate	108-05-4	ND		0.172	0.000	~~ND~~	R	~~8.62~~	~~0.000~~	ND		0.172	0.000
Vinyl chloride	75-01-4	ND		0.0501	0.000	ND		2.50	0.000	0.420	J	0.0501	0.000
p-Xylene/m-Xylene	106-42-3	ND		0.0869	0.000	ND		4.34	0.000	ND		0.0869	0.000
o-Xylene	95-47-6	ND		0.0409	0.000	~~ND~~	✓	~~2.04~~	~~0.000~~	ND		0.0409	0.000

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after *the National Functional Guidelines for Organic and Inorganic Data Review*

SECTION IV
Analytical Results
Surrogates

MS-VOA
SW8260B

Client Sample ID	MW-10B	MW-10D	MW-10D
Lab Sample ID	2010911306	2010911307	2010911307
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 12:35	09/25/2001 12:40	09/25/2001 12:40
Date/Time Prepared	10/05/2001 18:31	10/04/2001 23:10	10/05/2001 19:00
Date/Time Analyzed	10/05/2001 18:31	10/04/2001 23:10	10/05/2001 19:00
Dilution Factor	1.0000	50.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Surrogate Compound	% Recovery	Limits	F	% Recovery	Limits	F	% Recovery	Limits	F
1-Bromo-4-fluorobenzene	100	77-117		98	77-117		99	77-117	
1,2-Dichloroethane-d4	105	61-143		102	61-143		105	61-143	
Toluene-d8	103	87-113		101	87-113		104	87-113	

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after *the National Functional Guidelines for Organic and Inorganic Data Review*

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-19D	MW-19D	MW-20B
Lab Sample ID	2010911304	2010911304	2010911311
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 11:05	09/25/2001 11:05	09/25/2001 13:45
Date/Time Prepared	10/04/2001 18:48	10/05/2001 04:57	10/04/2001 19:46
Date/Time Analyzed	10/04/2001 18:48	10/05/2001 04:57	10/04/2001 19:46
Dilution Factor	1.0000	5.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Acetone	67-64-1	ND		1.26	0.000	ND	R	~~6.28~~	~~0.000~~	ND		1.26	0.000
Benzene	71-43-2	ND		0.0465	0.000	ND		0.232	0.000	ND		0.0465	0.000
Bromodichloromethane	75-27-4	ND		0.0528	0.000	ND		0.264	0.000	ND	UJ	0.0528	0.000
Bromoform	75-25-2	ND	UJ	0.106	0.000	ND		0.530	0.000	ND	UJ	0.106	0.000
Bromomethane	74-83-9	ND		0.0454	0.000	ND		0.227	0.000	ND		0.0454	0.000
2-Butanone (MEK)	78-93-3	ND		2.83	0.000	ND		14.1	0.000	ND		2.83	0.000
Carbon disulfide	75-15-0	ND	UJ	0.0415	0.000	ND		0.208	0.000	ND		0.0415	0.000
Carbon tetrachloride	56-23-5	ND		0.0553	0.000	ND		0.276	0.000	ND	UJ	0.0553	0.000
Chlorobenzene	108-90-7	ND		0.0404	0.000	ND		0.202	0.000	ND		0.0404	0.000
Chloroethane	75-00-3	ND		0.0755	0.000	ND		0.378	0.000	ND		0.0755	0.000
Chloroform	67-66-3	0.288	J	0.0338	0.000	ND		0.169	0.000	ND		0.0338	0.000
Chloromethane	74-87-3	ND		0.0509	0.000	ND		0.254	0.000	ND		0.0509	0.000
Dibromochloromethane	124-48-1	ND	UJ	0.0946	0.000	ND		0.473	0.000	ND	UJ	0.0946	0.000
1,1-Dichloroethane	75-34-3	ND		0.0445	0.000	ND		0.222	0.000	ND		0.0445	0.000
1,2-Dichloroethane	107-06-2	ND		0.0632	0.000	ND		0.316	0.000	ND		0.0632	0.000
1,1-Dichloroethene	75-35-4	ND		0.0492	0.000	ND		0.246	0.000	ND		0.0492	0.000
cis-1,2-Dichloroethene	156-59-2	10.1		0.0353	0.000	9.79		0.176	0.000	ND		0.0353	0.000
trans-1,2-Dichloroethene	156-60-5	0.127	J	0.0430	0.000	ND		0.215	0.000	ND		0.0430	0.000
1,2-Dichloropropane	78-87-5	ND		0.0519	0.000	ND		0.260	0.000	ND		0.0519	0.000
cis-1,3-Dichloropropene	10061-01-5	ND		0.0526	0.000	ND		0.263	0.000	ND		0.0526	0.000
trans-1,3-Dichloropropene	10061-02-6	ND		0.0486	0.000	~~ND~~	V	~~0.243~~	~~0.000~~	ND		0.0486	0.000

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after *the National Functional Guidelines for Organic and Inorganic Data Review*

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-19D	MW-19D	MW-20B
Lab Sample ID	2010911304	2010911304	2010911311

Continued

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Ethylbenzene	100-41-4	ND		0.0469	0.000	~~ND~~	R	~~0.234~~	~~0.000~~	ND		0.0469	0.000
2-Hexanone	591-78-6	ND		0.838	0.000	ND		4.19	0.000	ND		0.838	0.000
4-Methyl-2-pentanone (MIBK)	108-10-1	ND		0.473	0.000	ND		2.36	0.000	ND		0.473	0.000
Methylene chloride	75-09-2	0.0599 U	~~B~~ ND	~~0.0210~~	~~0.000~~	ND	B	0.105	0.000	ND	B	0.0210	0.000
Styrene	100-42-5	ND		0.0295	0.000	ND		0.148	0.000	ND	UJ	0.0295	0.000
1,1,2,2-Tetrachloroethane	79-34-5	ND		0.109	0.000	ND		0.543	0.000	ND		0.109	0.000
Tetrachloroethene	127-18-4	0.0827 J	B	0.103	0.000	ND		0.514	0.000	ND		0.103	0.000
Toluene	108-88-3	ND		0.0236	0.000	ND		0.118	0.000	ND		0.0236	0.000
1,1,1-Trichloroethane	71-55-6	ND		0.0511	0.000	ND		0.256	0.000	ND		0.0511	0.000
1,1,2-Trichloroethane	79-00-5	ND		0.0489	0.000	ND		0.244	0.000	ND		0.0489	0.000
Trichloroethene	79-01-6	3.08		0.0506	0.000	~~2.57~~		~~0.253~~	~~0.000~~	ND		0.0506	0.000
1,1,2-Trichlorotrifluoroethane	76-13-1	~~173~~	ER	~~0.0529~~	~~0.000~~	175	J	0.264	0.000	ND		0.0529	0.000
Vinyl acetate	108-05-4	ND		0.172	0.000	~~ND~~	R	~~0.862~~	~~0.000~~	ND		0.172	0.000
Vinyl chloride	75-01-4	ND		0.0501	0.000	ND		0.250	0.000	ND		0.0501	0.000
p-Xylene/m-Xylene	106-42-3	ND		0.0869	0.000	ND		0.434	0.000	ND		0.0869	0.000
o-Xylene	95-47-6	ND		0.0409	0.000	~~ND~~		~~0.204~~	~~0.000~~	ND	UJ	0.0409	0.000

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after *the National Functional Guidelines for Organic and Inorganic Data Review*

SECTION IV
Analytical Results
Surrogates

MS-VOA
SW8260B

Client Sample ID	MW-19D	MW-19D	MW-20B
Lab Sample ID	2010911304	2010911304	2010911311
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 11:05	09/25/2001 11:05	09/25/2001 13:45
Date/Time Prepared	10/04/2001 18:48	10/05/2001 04:57	10/04/2001 19:46
Date/Time Analyzed	10/04/2001 18:48	10/05/2001 04:57	10/04/2001 19:46
Dilution Factor	1.0000	5.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Surrogate Compound	% Recovery	Limits	F	% Recovery	Limits	F	% Recovery	Limits	F
1-Bromo-4-fluorobenzene	98	77-117		98	77-117		100	77-117	
1,2-Dichloroethane-d4	104	61-143		106	61-143		103	61-143	
Toluene-d8	101	87-113		100	87-113		101	87-113	

Data Evaluation Checklist

Organic Analyses

Project: Abbott Libby

Project No: 866 804.01

Work Order: 20109113

Method: SW-846 8260B (VOC)

Laboratory: SRC - Austin, TX

Analytical Batches: 13711

Reviewer: Martha Meyers-Lee, Senior Scientist

Date: ~~10/12/01~~ 10/25/01

Review Questions	Yes	No	N/A	Samples(Analytes) Affected/Comments	Flag
1. Were holding times met?	✓			<14 days	
2. Were sample storage and preservation requirements met?	✓			2.5°C (1-4°C), NO Air Bubbles	
3. Were project-specified Reporting Limits achieved?	✓			At a 5-fold dilution.	
4. Were measurement results for all project-specified target analytes reported?	✓				
5. Was a method blank analyzed with each batch?	✓			1029683	
6. Were target analytes reported in the method blank above the DL?	✓			Methylene chloride @ 0.0445 J µg/L (Detection limit is 0.0210 µg/L)	
7. Were target analytes reported in field blank analyses (e.g., (trip) ~~ambient, field, or equipment~~) above the DL?	✓			Methylene chloride 0.0645 µg/L	
8. Were contaminants detected in samples below the blank contamination action level?	✓			Action Limit: 0.645 (0.645×10)	u
9. Was a field duplicate analyzed?	✓			D-10D and MW-23D	
10. Was precision deemed acceptable as defined by the project QAPP and/or DV Guidelines?	✓			D-99 and MW-16D Refer to attachment a.	
11. Was a LCS/LCSD pair analyzed with each batch?	✓			1029681/1029682	
12. Were LCS/LCSD recoveries within lab/~~project~~ specifications?	✓				

WO #: 20109113

Data Evaluation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples(Analytes) Affected/Comments	Flag
13. Were LCS/LCSD RPD within lab/~~project~~ specifications?	✓				
14. Was a MS/MSD pair analyzed with each batch?	✓			1029844/1029845	
15. Is the MS/MSD parent sample a project-specific sample?	✓			MW-20B (20109113 11)	
16. Were MS/MSD recoveries within lab/~~project~~ specifications?		✓		See Comments Section below.	
17. Were MS/MSD RPD within lab/~~project~~ specifications?		✓			
18. Were initial and continuing calibration standards analyzed at the lab/project-specified frequency for each instrument?	✓				
19. Were these results within lab/project specifications?		✓		See page 3	
20. Were surrogate recoveries within lab/~~project~~ specifications?	✓				
21. Were internal standard results within lab/project specifications?				Data not provided by lab.	
22. Were TIC reported and were reported results qualified as estimated concentrations?			✓		
23. Were laboratory-generated Corrective Action Reports (i.e., QCERs) issued? If yes, summarize contents or attach copy of the report.	✓			Refer to QCER # 3860	
24. Were lab comments included in report? If yes, summarize contents or attach a copy of the narrative.		✓			

Comments:

#16-17. MS/MSD Evaluation MW-20B

	Result	Limits	Action
· Benzene	70%R (MSD)	71-133%R	None, MS recovery met QC limits
· Bromodichloromethane	51, 50%R	57-135%R	UJ ND
· Bromoform	19, 19%R	23-151%R	UJ ND
· Carbon Tetrachloride	45, 45%R	46-150%R	UJ ND
· chlorobenzene	66%R, 15%RPD	77-129%R, <14%RPD	None, MS recovery w/in limits + analyte ND
· Dibromochloromethane	31, 31%R	45-137%R	UJ ND
· Ethyl benzene	67%R, 16%RPD	75-131%, <14%RPD	None MS recovery w/in limits + analyte ND
· Styrene	63, 56%R	68-136%R	UJ ND

WO #: 20109113

Data Evaluation Checklist (Continued)

Comments (Continued):

#6.17 Cont'd.

· Tetrachloroethene	68%R, 15% RPD	69-137, <16% RPD	None MS %R w/in limits + analyte ND
Toluene	67%R (MSD)	70-132%R	None MS %R w/in limits
· 1,1,2-Trichloroethane	51%R (MSD)	67-135%R	None MS %R w/in limits
· m+p-xylenes	64%R, 18% RPD	76-134%R, <15% RPD	None MS %R w/in limits + analyte ND.
· o-xylene	76, 64%R, 17% RPD	77-131%R, <15% RPD	UJ ND

#9. Calibration:-

Samples analyzed w/in 12 hours of tune. All BFB tuning criteria met.

· Cont cal of 10/4/01 @ 14:46 on MSDA. – Bromoform (67%R), Carbon disulfide (75%R), Dibromochloromethane (78%R)

· Cont cal of 10/5/01 @ 03:31 on MSDA. – 1,1,2-Trichlorotrifluoroethane (77%R)

· Cont cal of 10/5/01 @ 11:06 on MSDA – Bromoform (58), Dibromochloromethane (77).

Quality Control Exception Report

Committed to Your Success

QCER #:	3860	Analysis Date:	10/4/01	File ID(s):	
Status:	Complete	Spec:	07		A1004135
Queue:	MSV	Instrument:	MSDA		
Analyst:	BJP	Matrix:	W		
		HBN:	13711		

Work Order	HSN	Client	CSC
20109113		ABBOTT	JAL

Analytical Problem Identification

MS/MSD Recovery

Analytical Probable Cause

Unknown

Analytical Corrective Action Taken

QCER written

Flagged data

Comments:

Several analytes in the MSD did not meet the recovery limits. The cause was unknown, but since the recoveries were acceptable in both the LCS and LCSD, the MSD data was flagged and this QCER was written as the required corrective actions.

Sample results have been qualified by URS-Radian based on the results of the data review process, which is modeled after *the National Functional Guidelines for Organic and Inorganic Data Review*

SEVERN TRENT SERVICES

WO#: 20109113

CHAIN-OF-CUSTODY ADDENDUM

1192

RECEIVED BY: Eric H

ADD NUMBER: 201-

DATE/TIME RECEIVED: 9/26/01 0830

PROFILE: 1811 ITEM: 1

UNPACKED DATE/TIME: 9/26/01 1040

CLIENT/PROJECT: ABBOTT

SAMPLES LOGGED IN: E

LOG-IN REVISED: E

Number of Shipping Containers Received with Chain of Custody 1

VOC SAMPLES SEE SECTION 1.0, 2.0 & 6.0 ☐ YES

1.0 CONTAINERS EXAMINED UPON RECEIPT: E

Container Sealed: ☑ YES ☐ NO

Custody Seal Present: ☑ YES ☐ NO

Custody Seal Signed/Dated: ☑ YES ☐ NO

If seal not intact, list air bill number of that container(s): _____

2.0 VOC CANISTERS EXAMINED UPON RECEIPT: _____

Canister Valves Closed: ☐ YES ☐ NO

Samples Received Match Chain: ☐ YES ☐ NO

Canister Valves Capped: ☐ YES ☐ NO

See Additional Comments: ☐ YES ☐ NO

Packing Material Used: _____

Can Size: ☐ 6L ☐ 15L

Other _____

3.0 SAMPLE TEMPERATURE UPON RECEIPT: E

PYROMETER#: 7.5

The temperature of the container(s) is: *(acceptable tolerance 1-4°C)*

2.5°C										

If temperature is outside acceptable tolerance, Project Manager was notified (_____PM). Date: _____ Time: _____

Samples received do not require cooling _____

OK to analyze samples: ☑ YES ☐ NO

PRESERVATION OF SAMPLES REQUIRED: ☑ NA ☐ YES **VERIFIED BY:** E

Base samples are>pH 12: ☐ YES ☐ NO

Acid preserved are<pH 2: ☐ YES ☐ NO

Cyanide samples checked for sulfides: ☐ YES

Sulfide samples appear to be preserved with zinc acetate: ☐ YES ☐ NO

Samples checked for chlorine per specification: ☐ YES

Free chlorine present: ☐ YES ☐ NO

If sample preservation/temperature (°C) is outside acceptable tolerance, Project Manager was notified (_____PM)
Date: _____ Time: _____ ☐ see pH adjustment form

VOLATILE SAMPLES FILLED COMPLETELY, IF NOT, LIST ID AND HEADSPACE OF VOA'S CONTAINING BUBBLES EXCEEDING 6MM IN DIAMETER:

Sample ID	mm Headspace	Sample ID	mm Headspace

Revised 12/8/2000

4.0 CONDITION OF BOTTLES/CONTAINERS **VERIFIED BY:** E

Samples received match COC: ☑ YES ☐ NO

Bottles received intact: ☑ YES ☐ NO

additional discrepancies/comments section: ☐ YES ☑ NO

Samples received from USDA restricted area: ☐ YES ☑ NO

VOA trip blanks included: ☑ YES ☐ NO ☐ N/A 2 XTB

5.0 ADDITIONAL DISCREPANCIES

Appears on COC		Appears on Label		
Sample ID	Date/Time	Sample ID	Date/Time	Comments

6.0 SHIPPING DOCUMENTATION

Air/freight bill is available and attached to COC: ☑ YES ☐ NO Air bill #: _____

Hand-delivered Carrier: _____ Date: _____ Time: _____

7.0 OTHER COMMENTS:

Client COC is signed, dated with time of receipt, and addendum number is noted in the comments section. ☑ YES

CORRECTIVE ACTION:

Client's Name: _____ Informed verbally on: _____ By: _____

Client's Name: _____ Informed verbally on: _____ By: _____

Sample(s) processed "as is" comments: _____

Samples(s) on hold until: _____ If released, notify: _____

REVIEW:

Project Management: _____ Date: 9-26-01

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

Revised 12/8//2000

Abbott 0901 Sampling Event
Evaluation of Field Duplicate Results

ATTACHMENT A

Analyte	MW-23D	D-100	DL	DLx5	RPD	Absolute difference	DLx2	Action
Acetone	75.7	80.1	6.28	*31.4*	6	4.4	12.56	None, RPD<50%
Benzene	2.73	2.79	0.232	*1.16*	2	0.06	0.464	None, RPD<50%
chloroform	32.1	32	0.169	*0.845*	0	0.1	0.338	None, RPD<50%
1,1-dichloroethane	9.83	9.57	0.222	*1.11*	3	0.26	0.444	None, RPD<50%
1,2 DCA	21.1	21.3	0.316	*1.58*	1	0.2	0.632	None, RPD<50%
1,1 dichloroethene	86	86.8	0.246	*1.23*	1	0.8	0.492	None, RPD<50%
cis-1,2 DCE	6110	6130	3.53	*17.65*	0	20	7.06	None, RPD<50%
trans-1,2 DCE	6.66	6.94	0.215	*1.075*	4	0.28	0.43	None, RPD<50%
ethyl benzene	0.386	0.531	0.234	*1.17*	32	0.145	0.468	None, absolute difference <2x's DL
4-Methyl-2-pentanone	21.2	22.7	2.36	*11.8*	7	1.5	4.72	None, RPD<50%
Toluene	104	102	0.118	*0.59*	2	2	0.236	None, RPD<50%
TCE	127	123	0.253	*1.265*	3	4	0.506	None, RPD<50%
1,1,2-TCTF	1140	1120	5.29	*26.45*	2	20	10.58	None, RPD<50%
m&p-Xylenes	1.38	1.45	0.434	*2.17*	5	0.07	0.868	None, absolute difference <2x's DL
o-Xylenes	0.476	0.51	0.204	*1.02*	7	0.034	0.408	None, absolute difference <2x's DL

DL - Detection limit
RPD - Relative percent difference

Lab precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the DL, then precision is based on the absolute difference between laboratory duplicate results. If sample results >5x's DL, then precision is evaluated using RPD. J sample results whenever the absolute difference is greater than twice the DL or the RPD >50%. If the analyte is detected in one sample but not the other, then J/UJ sample results. Table above presents the results for detected analytes only.

Abbott 0901 Sampling Event
Evaluation of Field Duplicate Results

ATTACHMENT A

Analyte	MW-16D	D-99	DL	DLx5	RPD	Absolute difference	DLx2	Action
benzene	0.336	0.355	0.0465	0.2325	5	-	0.093	None, RPD<50%
chloroform	0.529	0.546	0.0338	0.169	3	0.017	0.0676	None, RPD<50%
1,1-DCA	0.664	0.7	0.0445	0.2225	5	0.036	0.089	None, RPD<50%
1,2-DCA	1.67	1.68	0.0632	0.316	1	0.01	0.1264	None, RPD<50%
1,1-DCE	0.551	0.559	0.0492	0.246	1	0.008	0.0984	None, RPD<50%
cis-1,2-DCE	116	116	0.176	0.88	0	0	0.352	None, RPD<50%
trans-1,2-DCE	0.125	0.119	0.043	0.215	5	0.006	0.086	None, abs difference <2x DL
TCE	2.68	2.78	0.0506	0.253	4	0.1	0.1012	None, RPD<50%
1,1,2-TCTF	149	157	0.264	1.32	5	8	0.528	None, RPD<50%
Vinyl chloride	0.329	0.341	0.0501	0.2505	4	0.012	0.1002	None, RPD<50%

Note: If the analyte was not detected, then the cell was left blank.
DL - Detection limit
RPD - Relative percent difference

Lab precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the DL, then precision is based on the absolute difference between laboratory duplicate results. If sample results >5x's DL, then precision is evaluated using RPD. J sample results whenever the absolute difference is greater than twice the DL or the RPD >50%. If the analyte is detected in one sample but not the other, then J/UJ sample results. Table above presents the results for detected analytes only.

[redacted]

Chain of Custody Record

Fedex # 822685203500

SEVERN TRENT SERVICES

Severn Trent Laboratories, In

60521

STL4149 (0700)

Client: URS / Radian	Project Manager: P. Gayle	Date: 9/25/01	Page 2 of 2
Address: 1600 Perimeter Park Morrisville, NC	Telephone Number (Area Code)/Fax Number: 919-461-1519 / 919-461-1415	Lab Location: Austin, TX	Analysis
City:	State:	Zip Code: 27560	Site Contact: Martha Myers-Lee
Project Number/Name: Abbott Labs, Laurinburg, NC	Carrier/Waybill Number: Fedex # 822685203500 822219259274		
Contract/Purchase Order/Quote Number:			

Sample I.D. Number and Description	Date	Time	Sample Type	Containers Volume	Containers Type	Containers No.	Preservative	Condition on Receipt/Comments	SW 846 8260
MW-23d	9/24/01	1520	H_2O	40mL	Vial	3	HCL/4°C		X
D-100	↓	1520	↓	↓	↓	3	HCL/4°C		X
TB-1	↓	1600	↓	↓	↓	2	HCL/4°C		X

Special Instructions: Attn: Jane Lindsey

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]	9/25/01	1400	1. Received By: Fedex @ Abbott	9/25/01	1600
2. Relinquished By:			2. Received By: [signature]	9/26/01	0830
3. Relinquished By:			3. Received By:		

Comments: DD# 201-1192

[redacted]

Chain of Custody Record

SEVERN TRENT SERVICES

20109113

60527

Severn Trent Laboratories, Inc.

STL4149 (0700)

Client: URS / Radian	Project Manager: P. Gayle	Date: 9/25/01	Page 1 of 2
Address: 1600 Perimeter Park Dr	Telephone Number (Area Code)/Fax Number: (919) 461-1519 / -1415	Lab Location: Austin, TX	Analysis
City: Morrisville State: NC Zip Code: 27560	Site Contact: Martha Myers-Lee		
Project Number/Name: Abbott Labs, Laurinburg, NC	Carrier/Waybill Number: Fedex		
Contract/Purchase Order/Quote Number:			

Sample I.D. Number and Description	Date	Time	Sample Type	Containers Volume	Containers Type	Containers No.	Preservative	Condition on Receipt/Comments	SW 846 8260
MW-18b	9/25/01	1030	Water	40mL	vial	3	HCl/4°C		X
MW-18d	↓	1050	↓	↓	↓	3	↓		X
MW-19b	↓	1110	↓	↓	↓	3	↓		X
MW-19d	↓	1105	↓	↓	↓	3	↓		X
MW-21b	↓	1220	↓	↓	↓	3	↓		X
MW-10b	↓	1235	↓	↓	↓	3	↓		X
MW-10d	↓	1240	↓	↓	↓	3	↓		X
MW-16b	↓	1255	↓	↓	↓	3	↓		X
MW-16d	↓	1300	↓	↓	↓	3	↓		X
D-99	↓	1300	↓	↓	↓	3	↓		X
MW-20b	↓	1345	↓	↓	↓	3	↓		X
MW-20d	↓	1345	↓	↓	↓	3	↓		X
MW-13b	↓	1400	↓	↓	↓	3	↓		X
MW-8d	↓	1420	↓	↓	↓	3	↓		X
MW-8b	↓	1425	↓	↓	↓	3	↓		X
MW-23b	↓	1505	↓	↓	↓	3	↓		X

Special Instructions

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]	9/25/01	1400	1. Received By: Fedex	9/25/01	1600
2. Relinquished By:			2. Received By: [signature]	9/26/01	0830
3. Relinquished By:			3. Received By:		

Comments: DD# 201-1192

LABORATORY DATA REPORT FOR
SAMPLES COLLECTED FROM FUEL RELEASE WELLS

1000 **FedEx** Express · *USA Airbill* FedEx Tracking Number 8292 1925 9274

0215 Recipient's Copy

RECIPIENT: PEEL HERE

1 From This portion can be removed for Recipient's record

Date 9-25-01 FedEx Tracking Number 829219259274

Sender's Name Rhoda Willis Phone 919 461-1100

Company IIRS Corp.

Address 1600 Perimeter Park Drive Ste 100 Dept./Floor/Suite/Room

City Morrisville State NC ZIP 27560

2 Your Internal Billing Reference

3 To Recipient's Name Jane Lindsey Phone 512 310-5282

Company SEVERN TRENT LABS

Address 14046 SUMMIT DR BLDG B
To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

City AUSTIN State TX ZIP 78728

8292 1925 9274

0187099932

4a Express Package Service — Packages up to 150 lbs. Delivery commitment may be later in some areas.

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day
- [ ] NEW FedEx Extra Hours — Later drop-off with next business afternoon delivery to select locations

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service — Packages over 150 lbs. Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation: _____ * Declared value limit $500

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [X] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available only for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] SUNDAY Delivery — Available only for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available only for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods incl. Dry Ice: cannot be shipped in FedEx packaging or with FedEx Extra Hours service.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed
- [X] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain Recip. Acct. No.

0215

Total Packages	Total Weight	Total Charges
1	35	Credit Card Auth.

Our liability is limited to $100 unless you declare a higher value. See the *FedEx Service Guide* for details.

8 Release Signature Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Visit our Web site at fedex.com or call 1-800-Go-FedEx (800)463-3339.

406

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2846 Industrial Plaza Dr. • Tallahassee, FL 32301 • Tel: 850 878 3994 • Fax: 850 878 9504 • www.stl-inc.com
STL Tallahassee

LOG NO: T1-32876
Received: 26 SEP 01
Reported: 09 OCT 01

Ms. Shannon Wallin
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Cl Project No: 807175.01

Project: Abbott-Laurinburg Fuel Release
Sampled By: Client
Code: 095511012

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
32876-1	FR-3	09-25-01/09:00	URSA01
32876-2	FR-3d	09-25-01/09:15	URSA01
32876-3	FR-7d	09-25-01/09:35	URSA01
32876-4	FR-1	09-25-01/09:40	URSA01
32876-5	FR-5	09-25-01/09:55	URSA01

PARAMETER	32876-1	32876-2	32876-3	32876-4	32876-5
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	1.6	0.42J	<1.0	<1.0
Toluene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes, ug/l	<2.0	<2.0	<2.0	<2.0	<2.0
Prep Date	09.28.01	09.28.01	09.28.01	09.28.01	09.28.01
Analysis Date	09.28.01	09.28.01	09.28.01	09.28.01	09.28.01
Dilution Factor	1	1	1	1	1

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STL Tallahassee

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Cl Project No: 807175.01

Project: Abbott-Laurinburg Fuel Release
Sampled By: Client
Code: 095511012

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
32876-6	FR-8d	09-25-01/10:00	URSA01
32876-7	FR-9d	09-25-01/10:20	URSA01
32876-8	FR-6d	09-25-01/10:25	URSA01
32876-9	D-99	09-25-01/10:30	URSA01
32876-10	Trip Blank	09-25-01	URSA01

PARAMETER	32876-6	32876-7	32876-8	32876-9	32876-10
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	<1.0	17	18	<1.0
Toluene, ug/l	<1.0	<1.0	0.43J	0.44J	<1.0
Ethylbenzene, ug/l	<1.0	<1.0	2.6	2.7	<1.0
Xylenes, ug/l	<2.0	<2.0	<2.0	<2.0	<2.0
Prep Date	09.28.01	09.28.01	09.28.01	09.28.01	09.28.01
Analysis Date	09.28.01	09.28.01	09.28.01	09.28.01	09.28.01
Dilution Factor	1	1	1	1	1

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STL Tallahassee
2846 Industrial Plaza Dr. • Tallahassee, FL 32301 • Tel: 850 878 3994 • Fax: 850 878 9504 • www.stl-inc.com

LOG NO: T1-32876
Received: 26 SEP 01
Reported: 09 OCT 01

Ms. Shannon Wallin
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Cl Project No: 807175.01

Project: Abbott-Laurinburg Fuel Release
Sampled By: Client
Code: 095511012

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
32876-11	Method Blank		URSA01
32876-12	Reporting Limit (RL)		URSA01
32876-13	Method Detection Limit (MDL)		URSA01
32876-14	Accuracy (%Rec) LCS		URSA01
32876-15	Precision (%RPD) MS/MSD		URSA01

PARAMETER	32876-11	32876-12	32876-13	32876-14	32876-15
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	1.0	0.10	95 %	0 %
Toluene, ug/l	<1.0	1.0	0.13	100 %	0 %
Ethylbenzene, ug/l	<1.0	1.0	0.14	---	---
Xylenes, ug/l	<2.0	2.0	0.27	---	---
Prep Date	09.28.01	---	---	09.28.01	---
Analysis Date	09.28.01	---	---	09.28.01	---
Dilution Factor	1	---	---	1	---

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LOG NO: T1-32876
Received: 26 SEP 01
Reported: 09 OCT 01

Ms. Shannon Wallin
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Cl Project No: 807175.01

Project: Abbott-Laurinburg Fuel Release
Sampled By: Client
Code: 135311012

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
32876-16	LCS Accuracy Control Limit (%R)		URSA01
32876-17	MS Precision Advisory Limit %RPD		URSA01

PARAMETER	32876-16	32876-17
Purgeable Aromatics (602)		
Benzene	39-150 %	<31 %
Toluene	46-148 %	<25 %

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Methods: EPA 40 CFR Part 136
NC Certification No. 389

J Estimated value; reported between the method detection limit and the reporting limit.

Laura B. Snead, Project Manager

STL Tallahassee is a part of Severn Trent Laboratories, Inc.

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 1P0918-602CU

Instrument ID: TVGPPID2 Calibration Date(s): 09/18/01 09/18/01

Column: DBVRX ID: 0.45 (mm) Calibration Time(s): 1500 1754

LAB FILE ID: RF1: 2I18P4 RF2: 2I18P5 RF5: 2I18P6
RF10: 2I18P7 RF20: 2I18P8

COMPOUND	RF1	RF2	RF5	RF10	RF20
MTBE	0.280	0.299	0.312	0.302	0.303
Benzene	1.355	1.449	1.509	1.463	1.480
Toluene	1.230	1.314	1.382	1.338	1.364
Ethylbenzene	1.058	1.143	1.214	1.178	1.204
m&p-Xylene	1.328	1.402	1.439	1.373	1.370
o-Xylene	0.966	1.048	1.107	1.083	1.104
Xylenes (total)	1.207	1.284	1.329	1.276	1.282
a,a,a-Trifluorotoluene Surr*	0.448	0.425	0.463	0.463	0.480

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 1P0918-602CU

Instrument ID: TVGPPID2 Calibration Date(s): 09/18/01 09/18/01

Column: DBVRX ID: 0.45 (mm) Calibration Time(s): 1500 1754

LAB FILE ID: RF30: 2I18P9 RF40: RF60: 2I18P10
RF0: 2I18P3

COMPOUND	RF30	RF40	RF60	RF0
MTBE	0.285		0.279	0.351
Benzene	1.430		1.406	
Toluene	1.321		1.310	
Ethylbenzene	1.163		1.148	
m&p-Xylene	1.308		1.248	
o-Xylene	1.060		1.023	
Xylenes (total)	1.225		1.173	
a,a,a-Trifluorotoluene Surr*	0.486		0.483	

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 1P0918-602CU

Instrument ID: TVGPPID2 Calibration Date(s): 09/18/01 09/18/01

Column: DBVRX ID: 0.45 (mm) Calibration Time(s): 1500 1754

COMPOUND	CURVE	COEFFICIENTS A0	A1	%RSD or R^2
MTBE	LINR	0.00000000	3.53930	0.999
Benzene	LINR	0.00000000	0.70513	1.000
Toluene	LINR	0.00000000	0.75893	1.000
Ethylbenzene	LINR	0.00000000	0.86501	1.000
m&p-Xylene	LINR	0.00000000	0.78531	0.998
o-Xylene	LINR	0.00000000	0.96288	0.999
Xylenes (total)	LINR	0.00000000	0.83676	0.998
a,a,a-Trifluorotoluene Surr*	LINR	0.00000000	2.07115	1.000

FORM 7
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 1P0918-602CU

Instrument ID: TVGPPID2 Calibration Date: 09/28/01 Time: 1642

Lab File ID: 2I28P2 Init. Calib. Date(s): 09/18/01 09/18/01

Init. Calib. Times: 1500 1754

GC Column: DBVRX ID: 0.45 (mm)

COMPOUND	ICAL20 AMT/ AVG RF	CCAL AMT	CCAL RF	MIN RF	%DRIFT /%D*	MAX %DRIFT /%D*	CURVE
MTBE	200	180	0.257	0.10	10.0	15.0	LINR
Benzene	20	19	1.374	0.01	5.0	23.0	LINR
Toluene	20	20	1.292	0.01	0.0	22.5	LINR
Ethylbenzene	20	20	1.154	0.01	0.0	37.0	LINR
m&p-Xylene	40	42	1.321	0.01	5.0	27.5	LINR
o-Xylene	20	20	1.028	0.01	0.0	27.5	LINR
Xylenes (total)	60	61	1.224	0.01	1.7	27.5	LINR
a,a,a-Trifluorotoluene Surr*	20	21	0.504	0.01	5.0	15.0	LINR

*%Drift is reported for linear and 2nd order curves and %D (%Difference) is reported for average curves.

Serial Number 009353

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Severn Trent Laboratories, Inc.

- ☐ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- ☒ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- ☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- ☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE: L'burg Fuel Release	PROJECT NO.: 807175.01	PROJECT LOCATION (STATE): NC	PAGE 1 OF
STL (LAB) PROJECT MANAGER: Laura Snead	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ☒ DATE DUE
CLIENT (SITE): Abbott Lab, L'burg	CLIENT PHONE: 919-461-1385	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE) ☐ DATE DUE
CLIENT NAME: URS - Shannon Wallin	CLIENT E-MAIL		
CLIENT ADDRESS: P.O. Box 13000 Research Triangle Park, NC 27709			
COMPANY CONTRACTING THIS WORK (if applicable): URS			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSIS: EPA 602 w/xylenes

PRESERVATIVE: HCL

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	GW	DI WATER				NUMBER CONTAINERS SUBMITTED	REMARKS
9-25-01	0900	FR-3	X					3	
9-25-01	0915	FR-3d	X					3	
9-25-01	0935	FR-7d	X					3	
9-25-01	0940	FR-1	X					3	
9-25-01	0955	FR-5	X					3	
9-25-01	1000	FR-8d	X					3	
9-25-01	1020	FR-9d	X					3	
9-25-01	1025	FR-6d	X					3	
9-25-01	1030	D-95	X					3	
9-25-01		Trip Blank		X				3	
9-25-01		Temperature Blank		X				1	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	9/25	[illegible]	Shannon Wallin	9-25-01	1530			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

T132876 FORMS

NOV. 6.2001 1:48PM STL TALLAHASSEE NO.124 P.1/9

Fax message

SEVERN TRENT SERVICES

Date: 11/06/01
To: Ms. Martha Meyers-Lee
Company: URS
Fax: 919/461-1415
From: Laura B. Snead
Subject: Laurinburg Additional Forms
Pages: 9

Severn Trent Laboratories, Inc.
STL Tallahassee
2846 Industrial Plaza Drive
Tallahassee, FL 32301

Tel (850) 878-3994
Fax (850) 878-9504
www.stl-inc.com

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 32876

	CLIENT SAMPLE NO.	SMC1 #	SMC2 #	SMC3 #	OTHER	TOT OUT
01	1P0928MBLCS	100				0
02	1P0928MBLCSD	100				0
03	1P0928MB	98				0
04	32876-10	95				0
05	32876-1	97				0
06	32876-2	94				0
07	32876-3	100				0
08	32876-4	100				0
09	32876-5	100				0
10	32876-6	100				0
11	32876-7	100				0
12	32876-8	97				0
13	32876-9	98				0
14	2P1001MB	100				0
15	32876-1MS	100				0
16	32876-1MSD	100				0
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

QC LIMITS
SMC1 = a,a,a-Trifluorotoluene (70-130)

Column to be used to flag recovery values

* Values outside of laboratory QC limits

D System Monitoring Compound diluted out

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 32876

Matrix Spike - Sample No.: 32876-1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONC (ug/L)	MS CONC (ug/L)	MS % REC#	QC. LIMITS REC.
Benzene	20	0.00	20	100	39-150
Toluene	20	0.00	20	100	46-148

COMPOUND	SPIKE ADDED (ug/L)	MSD CONC (ug/L)	MSD % REC#	AVG % REC	% RPD$#	QC LIMITS RPD	QC LIMITS REC.
Benzene	20	20	100	100	0	31	39-150
Toluene	20	20	100	100	0	25	46-148

$ %RPD calculated using the spike and spike duplicate concentrations as per SW846 8000B

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS:

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 32876

Instrument ID: TVGPPID2 Calibration Date(s): 09/18/01 09/18/01

Column: DBVRX ID: 0.45 (mm) Calibration Time(s): 1500 1754

LAB FILE ID: RF1: 2I18P4 RF2: 2I18P5 RF5: 2I18P6
RF10: 2I18P7 RF20: 2I18P8

COMPOUND	RF1	RF2	RF5	RF10	RF20
MTBE	0.280	0.299	0.312	0.302	0.303
Benzene	1.355	1.449	1.509	1.463	1.480
Toluene	1.230	1.314	1.382	1.338	1.364
Ethylbenzene	1.058	1.143	1.214	1.178	1.204
m&p-Xylene	1.328	1.402	1.439	1.373	1.370
o-Xylene	0.966	1.048	1.107	1.083	1.104
Xylenes (total)	1.207	1.284	1.329	1.276	1.282
a,a,a-Trifluorotoluene Surr*	0.448	0.425	0.463	0.463	0.480

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 32876

Instrument ID: TVGPPID2 Calibration Date(s): 09/18/01 09/18/01

Column: DBVRX ID: 0.45 (mm) Calibration Time(s): 1500 1754

LAB FILE ID: RF30: 2I18P9 RF40: RF60: 2I18P10
RF0: 2I18P3

COMPOUND	RF30	RF40	RF60	RF0
MTBE	0.285		0.279	0.351
Benzene	1.430		1.406	
Toluene	1.321		1.310	
Ethylbenzene	1.163		1.148	
m&p-Xylene	1.308		1.248	
o-Xylene	1.060		1.023	
Xylenes (total)	1.225		1.173	
a,a,a-Trifluorotoluene Surr*	0.486		0.483	

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 32876

Instrument ID: TVGPPID2 Calibration Date(s): 09/18/01 09/18/01

Column: DBVRX ID: 0.45 (mm) Calibration Time(s): 1500 1754

COMPOUND	CURVE	COEFFICIENTS A0	A1	%RSD or R^2
MTBE	LINR	0.00000000	3.53930	0.999
Benzene	LINR	0.00000000	0.70513	1.000
Toluene	LINR	0.00000000	0.75893	1.000
Ethylbenzene	LINR	0.00000000	0.86501	1.000
m&p-Xylene	LINR	0.00000000	0.78531	0.998
o-Xylene	LINR	0.00000000	0.96288	0.999
Xylenes (total)	LINR	0.00000000	0.83676	0.998
a,a,a-Trifluorotoluene Surr*	LINR	0.00000000	2.07115	1.000

FORM 7
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 32876

Instrument ID: TVGPPID2 Calibration Date: 09/28/01 Time: 1642

Lab File ID: 2I28P2 Init. Calib. Date(s): 09/18/01 09/18/01

Init. Calib. Times: 1500 1754

GC Column: DBVRX ID: 0.45 (mm)

COMPOUND	ICAL20 AMT/ AVG RF	CCAL AMT	CCAL RF	MIN RF	%DRIFT /%D*	MAX %DRIFT /%D*	CURVE
MTBE	200	180	0.257	0.10	10.0	15.0	LINR
Benzene	20	19	1.374	0.01	5.0	23.0	LINR
Toluene	20	20	1.292	0.01	0.0	22.5	LINR
Ethylbenzene	20	20	1.154	0.01	0.0	37.0	LINR
m&p-Xylene	40	42	1.321	0.01	5.0	27.5	LINR
o-Xylene	20	20	1.028	0.01	0.0	27.5	LINR
Xylenes (total)	60	61	1.224	0.01	1.7	27.5	LINR
a,a,a-Trifluorotoluene Surr*	20	21	0.504	0.01	5.0	15.0	LINR

*%Drift is reported for linear and 2nd order curves and %D (%Difference) is reported for average curves.

FORM 7
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: STL TALLAHASSEE Lab Code: TL

Client: Project: SDG No.: 32876

Instrument ID: TVGPPID2 Calibration Date: 10/01/01 Time: 1206

Lab File ID: 2J01P2 Init. Calib. Date(s): 09/18/01 09/18/01

Init. Calib. Times: 1500 1754

GC Column: DBVRX ID: 0.45 (mm)

COMPOUND	ICAL20 AMT/ AVG RF	CCAL AMT	CCAL RF	MIN RF	%DRIFT /%D*	MAX %DRIFT /%D*	CURVE
MTBE	200	190	0.303	0.10	5.0	15.0	LINR
Benzene	20	20	1.481	0.01	0.0	23.0	LINR
Toluene	20	20	1.364	0.01	0.0	22.5	LINR
Ethylbenzene	20	20	1.204	0.01	0.0	37.0	LINR
m&p-Xylene	40	43	1.370	0.01	7.5	27.5	LINR
o-Xylene	20	20	1.104	0.01	0.0	27.5	LINR
Xylenes (total)	60	63	1.282	0.01	5.0	27.5	LINR
a,a,a-Trifluorotoluene Surr*	20	21	0.480	0.01	5.0	15.0	LINR

*%Drift is reported for linear and 2nd order curves and %D (%Difference) is reported for average curves.

FORM VII VOA

Appendix II QC Summary

QC CHECK	FREQUENCY	ACEPTANCE CRITERIA	CORRECTIVE ACTION
Initial Calibration- 5 point minimum with lowest point at RL	Prior to sample analysis or when CCV fails	1)RSD of each target <= 20%; OR 2)plot regression curve	-Evaluate chromatogram and integrations. Check calculations. -Reanalyze standard(s) -Remake and reanalyze standard(s) -Perform instrument or column maintenance and reanalyze standards
Continuing calibration verification(CCV) -midpoint calibration standard	Every 12 hours and at end of sequence	1) Within method "Q" table criteria; OR 2) Percent difference or drift <= 15%	-Evaluate chromatogram and integrations. Check calculations. -Reanalyze standard(s) -Remake and reanalyze standard(s) -Perform instrument or column maintenance and reanalyze standards
Method blank	Prior to analysis of samples	All targets reported less than RL in Table 5 of the SL CQAP	-Evaluate chromatogram and integrations. Check calculations. -Reanalyze - Follow guidance in SL SOP AN02 and Table 13.1 in CQAP -Perform instrument or column maintenance, recalibrate, and reanalyze
Laboratory fortified blank sample (LCS)- subset of targets in SL CQAP	Per batch (IF MS/MSD cannot be performed, the LCS must be performed in duplicate)	Recoveries within SL CQAP Table 5 limits	-Evaluate chromatogram and integrations. Check calculations. -Reanalyze - Follow guidance in SL SOP AN02 and Table 13.1 in CQAP -Perform instrument or column maintenance, recalibrate, and reanalyze

CASE NARRATIVE
PURGEABLE HALOCARBONS

STL SDG No: URSA01

STL Log No(s): T132876

Client Project ID: Abbott-Laurinburg Fuel Release

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHOD

Preparation: EPA 602

Analysis: EPA 602

IV. PREPARATION

Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Spikes: All QC criteria were met.

D. Surrogates: All QC criteria were met.

E. Samples: No analytical or quality problems were observed.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and STL Tallahassee, both technically and for completeness except for the conditions noted above.

SIGNED: Laura B. Snead DATE: 10/12/01

Laura B. Snead
Project Manager
STL Tallahassee

REPORT OF SAMPLES WITH SDG# OF URSA01 ANALYSIS: Purgeable Aromatics PAGE 1

SAMPLE#	SAMPLE DESCRIPTION	DATE SAMPLED	DATE RECEIVED	MATRIX
T132876*1	FR-3	09/25/01	09/26/01	LIQUID
T132876*2	FR-3d	09/25/01	09/26/01	LIQUID
T132876*3	FR-7d	09/25/01	09/26/01	LIQUID
T132876*4	FR-1	09/25/01	09/26/01	LIQUID
T132876*5	FR-5	09/25/01	09/26/01	LIQUID
T132876*6	FR-8d	09/25/01	09/26/01	LIQUID
T132876*7	FR-9d	09/25/01	09/26/01	LIQUID
T132876*8	FR-6d	09/25/01	09/26/01	LIQUID
T132876*9	D-99	09/25/01	09/26/01	LIQUID
T132876*10	Trip Blank	09/25/01	09/26/01	LIQUID

EXCERPT FROM LABORATORY DATA REPORT
FOR SAMPLES COLLECTED FROM SOLVENT RELEASE WELLS

STL Austin

Laboratory Analysis Report

October 10, 2001

Martha Meyers-Lee
URS Corporation
1600 Perimeter Park Dr.
Morrisville, NC 27560

(919)461-1519 (Business)

RE: Laboratory Reference: Semi, qtr, ann 806804.01 [20109113] Abbott Laboratories

Dear Martha Meyers-Lee:

STL Austin received samples with a request for the analytical fractions listed below.
Results for the indicated analytical fractions and associated quality control data are enclosed in this report.

Fraction	Status	Reported	Approval Signature - Title
MS-VOA	ENCLOSED	10/10/2001	Mgr. 10-12-01

The report is provided as indicated in the Table of Contents (Page i) and it is followed by Appendix A which includes any additional information associated with the report.

STL Austin appreciates your business and looks forward to serving you again. If you have any questions concerning your report or need any additional information, please call me at (512)310-5249 or fax inquiries to (512)244-0160.

Sincerely,

Jane Lindsey
Client Services/Project Manager

SECTION I
Table of Contents

Section	Form	Page
	Cover Page - Laboratory Analytical Report	
I.	Table of Contents	i
MS-VOA		1
II.	Report Summaries	1
	Workorder Summary	1
	Protocol Summary	2
III.	Comments and Flag Definitions	4
	Standard Flag Definitions	4
	Analyst Comments	4
	Sample Condition Comments	4
IV.	Analytical Results	5
	SW8260B	5
V.	Calibration and Quality Control Results	38
	SW8260B	38
	Calibration Verification Results	38
	Mass Spectrometer Tune	44
	Method Blank Results	47
	Spiked Sample Results	50
	Control Sample Results	53
VI.	Batch Summaries	56
	SW8260B	56
	Extraction/Digestion Batch Summary	56
	Analysis Batch Summary	58
VII.	Certifications	60

SECTION II
Report Summaries

MS-VOA

Client Name: Abbott Laboratories
Client Code: ABBOTT
Project Name: Semi, qtr, ann 806804.01 [20109113] Abbott Laboratories
Facility Name: NC

Workorder Summary

Client Sample ID	Lab Sample ID	Sample Matrix	Method Citation	Method Description
MW-18B	2010911301	Aqueous	SW8260B	Volatiles by GC/MS
MW-18D	2010911302	Aqueous	SW8260B	Volatiles by GC/MS
MW-19B	2010911303	Aqueous	SW8260B	Volatiles by GC/MS
MW-19D	2010911304	Aqueous	SW8260B	Volatiles by GC/MS
MW-21B	2010911305	Aqueous	SW8260B	Volatiles by GC/MS
MW-10B	2010911306	Aqueous	SW8260B	Volatiles by GC/MS
MW-10D	2010911307	Aqueous	SW8260B	Volatiles by GC/MS
MW-16B	2010911308	Aqueous	SW8260B	Volatiles by GC/MS
MW-16D	2010911309	Aqueous	SW8260B	Volatiles by GC/MS
D-99	2010911310	Aqueous	SW8260B	Volatiles by GC/MS
MW-20B	2010911311	Aqueous	SW8260B	Volatiles by GC/MS
MW-20D	2010911312	Aqueous	SW8260B	Volatiles by GC/MS
MW-13B	2010911313	Aqueous	SW8260B	Volatiles by GC/MS
MW-8D	2010911314	Aqueous	SW8260B	Volatiles by GC/MS
MW-8B	2010911315	Aqueous	SW8260B	Volatiles by GC/MS
MW-23B	2010911316	Aqueous	SW8260B	Volatiles by GC/MS
MW-23D	2010911317	Aqueous	SW8260B	Volatiles by GC/MS
D-100	2010911318	Aqueous	SW8260B	Volatiles by GC/MS
TB-1	2010911319	Aqueous	SW8260B	Volatiles by GC/MS

MS-VOA

Protocol Summary

Client Sample ID	Lab Sample ID	Date & Time Collected	Date & Time Received	Prep Batch ID	Date & Time Prepared	Analysis Batch ID	Date & Time Analyzed	Hold Time Spec Prep Spec	Hold Time Spec Prep Actual	Hold Time Spec Analysis Spec	Hold Time Spec Analysis Actual
Method: SW8260B											
MW-18B	2010911301	09/25/01 10:30	09/26/01 08:30	13711	10/04/01 17:51	13711	10/04/01 17:51	14D	9D	14D	9D
MW-18D	2010911302	09/25/01 10:50	09/26/01 08:30	13711	10/04/01 21:41	13711	10/04/01 21:41	14D	9D	14D	9D
MW-18D	2010911302	09/25/01 10:50	09/26/01 08:30	13711	10/05/01 20:28	13711	10/05/01 20:28	14D	10D	14D	10D
MW-19B	2010911303	09/25/01 11:10	09/26/01 08:30	13711	10/04/01 18:19	13711	10/04/01 18:19	14D	9D	14D	9D
MW-19D	2010911304	09/25/01 11:05	09/26/01 08:30	13711	10/04/01 18:48	13711	10/04/01 18:48	14D	9D	14D	9D
MW-19D	2010911304	09/25/01 11:05	09/26/01 08:30	13711	10/05/01 04:57	13711	10/05/01 04:57	14D	10D	14D	10D
MW-21B	2010911305	09/25/01 12:20	09/26/01 08:30	13711	10/04/01 19:18	13711	10/04/01 19:18	14D	9D	14D	9D
MW-21B	2010911305	09/25/01 12:20	09/26/01 08:30	13711	10/05/01 04:28	13711	10/05/01 04:28	14D	10D	14D	10D
MW-10B	2010911306	09/25/01 12:35	09/26/01 08:30	13711	10/04/01 22:39	13711	10/04/01 22:39	14D	9D	14D	9D
MW-10B	2010911306	09/25/01 12:35	09/26/01 08:30	13711	10/05/01 18:31	13711	10/05/01 18:31	14D	10D	14D	10D
MW-10D	2010911307	09/25/01 12:40	09/26/01 08:30	13711	10/04/01 23:10	13711	10/04/01 23:10	14D	9D	14D	9D
MW-10D	2010911307	09/25/01 12:40	09/26/01 08:30	13711	10/05/01 19:00	13711	10/05/01 19:00	14D	10D	14D	10D
MW-16B	2010911308	09/25/01 12:55	09/26/01 08:30	13711	10/04/01 21:12	13711	10/04/01 21:12	14D	9D	14D	9D
MW-16B	2010911308	09/25/01 12:55	09/26/01 08:30	13711	10/05/01 10:40	13711	10/05/01 10:40	14D	10D	14D	10D
MW-16D	2010911309	09/25/01 13:00	09/26/01 08:30	13711	10/04/01 22:09	13711	10/04/01 22:09	14D	9D	14D	9D
MW-16D	2010911309	09/25/01 13:00	09/26/01 08:30	13711	10/05/01 20:57	13711	10/05/01 20:57	14D	10D	14D	10D
D-99	2010911310	09/25/01 13:00	09/26/01 08:30	13711	10/04/01 23:40	13711	10/04/01 23:40	14D	9D	14D	9D
D-99	2010911310	09/25/01 13:00	09/26/01 08:30	13711	10/05/01 11:09	13711	10/05/01 11:09	14D	10D	14D	10D
D-99	2010911310	09/25/01 13:00	09/26/01 08:30	13711	10/05/01 21:25	13711	10/05/01 21:25	14D	10D	14D	10D
MW-20B	2010911311	09/25/01 13:45	09/26/01 08:30	13711	10/04/01 19:46	13711	10/04/01 19:46	14D	9D	14D	9D
MW-20D	2010911312	09/25/01 13:45	09/26/01 08:30	13711	10/04/01 20:15	13711	10/04/01 20:15	14D	9D	14D	9D
MW-13B	2010911313	09/25/01 14:00	09/26/01 08:30	13711	10/04/01 20:43	13711	10/04/01 20:43	14D	9D	14D	9D

MS-VOA

Protocol Summary continued -

Client Sample ID	Lab Sample ID	Date & Time Collected	Date & Time Received	Prep Batch ID	Date & Time Prepared	Analysis Batch ID	Date & Time Analyzed	Hold Time Spec Prep Spec	Hold Time Spec Prep Actual	Hold Time Spec Analysis Spec	Hold Time Spec Analysis Actual
Method: SW8260B continued -											
MW-8D	2010911314	09/25/01 14:20	09/26/01 08:30	13711	10/05/01 01:09	13711	10/05/01 01:09	14D	10D	14D	10D
MW-8D	2010911314	09/25/01 14:20	09/26/01 08:30	13711	10/05/01 19:30	13711	10/05/01 19:30	14D	10D	14D	10D
MW-8B	2010911315	09/25/01 14:25	09/26/01 08:30	13711	10/05/01 01:37	13711	10/05/01 01:37	14D	10D	14D	10D
MW-8B	2010911315	09/25/01 14:25	09/26/01 08:30	13711	10/05/01 20:00	13711	10/05/01 20:00	14D	10D	14D	10D
MW-23B	2010911316	09/25/01 15:05	09/26/01 08:30	13711	10/05/01 02:06	13711	10/05/01 02:06	14D	10D	14D	10D
MW-23B	2010911316	09/25/01 15:05	09/26/01 08:30	13711	10/05/01 21:56	13711	10/05/01 21:56	14D	10D	14D	10D
MW-23D	2010911317	09/24/01 15:20	09/26/01 08:30	13711	10/05/01 00:10	13711	10/05/01 00:10	14D	11D	14D	11D
MW-23D	2010911317	09/24/01 15:20	09/26/01 08:30	13711	10/05/01 22:24	13711	10/05/01 22:24	14D	11D	14D	11D
D-100	2010911318	09/24/01 15:20	09/26/01 08:30	13711	10/05/01 00:40	13711	10/05/01 00:40	14D	11D	14D	11D
D-100	2010911318	09/24/01 15:20	09/26/01 08:30	13711	10/05/01 22:53	13711	10/05/01 22:53	14D	11D	14D	11D
TB-1	2010911319	09/24/01 16:00	09/26/01 08:30	13711	10/04/01 17:22	13711	10/04/01 17:22	14D	10D	14D	10D

SECTION III
Comments and Flag Definitions

MS-VOA

Standard Data Qualifiers

Flag	Definition
B	Analyte detected in method blank and concentration > MDL
E	Analyte concentration exceeded calibration range
J	Result > or = MDL and <PQL
NA	Not analyzed/Not available
ND	Not detected at the specified reporting limit
Q	Result does not meet tolerance in Protocol Specification
R	Result reported elsewhere
U	Result less than sample specific method detection limit
V	Carryover suspected.

Analyst Comments

Flag	Affected Sample	Method	Comment
	MW-20B	SW8260B	See QCER 3860.

Sample Condition Comments

Affected Sample	Comment

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	D-99	D-99	MW-10B
Lab Sample ID	2010911310	2010911310	2010911306
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 13:00	09/25/2001 13:00	09/25/2001 12:35
Date/Time Prepared	10/05/2001 11:09	10/05/2001 21:25	10/04/2001 22:39
Date/Time Analyzed	10/05/2001 11:09	10/05/2001 21:25	10/04/2001 22:39
Dilution Factor	5.0000	1.0000	50.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Acetone	67-64-1	ND		6.28	0.000	ND		1.26	0.000	ND		62.8	0.000
Benzene	71-43-2	0.334	J	0.232	0.000	0.355	J	0.0465	0.000	ND		2.32	0.000
Bromodichloromethane	75-27-4	ND		0.264	0.000	ND		0.0528	0.000	ND		2.64	0.000
Bromoform	75-25-2	ND		0.530	0.000	ND		0.106	0.000	ND		5.30	0.000
Bromomethane	74-83-9	ND		0.227	0.000	ND		0.0454	0.000	ND		2.27	0.000
2-Butanone (MEK)	78-93-3	ND		14.1	0.000	ND		2.83	0.000	ND		141	0.000
Carbon disulfide	75-15-0	ND		0.208	0.000	ND		0.0415	0.000	ND		2.08	0.000
Carbon tetrachloride	56-23-5	ND		0.276	0.000	ND		0.0553	0.000	ND		2.76	0.000
Chlorobenzene	108-90-7	ND		0.202	0.000	ND		0.0404	0.000	ND		2.02	0.000
Chloroethane	75-00-3	ND		0.378	0.000	ND		0.0755	0.000	ND		3.78	0.000
Chloroform	67-66-3	0.478	J	0.169	0.000	0.546		0.0338	0.000	ND		1.69	0.000
Chloromethane	74-87-3	ND		0.254	0.000	ND		0.0509	0.000	ND		2.54	0.000
Dibromochloromethane	124-48-1	ND		0.473	0.000	ND		0.0946	0.000	ND		4.73	0.000
1,1-Dichloroethane	75-34-3	ND		0.222	0.000	0.700		0.0445	0.000	ND		2.22	0.000
1,2-Dichloroethane	107-06-2	1.60	J	0.316	0.000	1.68		0.0632	0.000	ND		3.16	0.000
1,1-Dichloroethene	75-35-4	0.598	J	0.246	0.000	0.559		0.0492	0.000	ND		2.46	0.000
cis-1,2-Dichloroethene	156-59-2	116		0.176	0.000	120	ER	0.0353	0.000	17.5	J	1.76	0.000
trans-1,2-Dichloroethene	156-60-5	ND		0.215	0.000	0.119	J	0.0430	0.000	ND		2.15	0.000
1,2-Dichloropropane	78-87-5	ND		0.260	0.000	ND		0.0519	0.000	ND		2.60	0.000
cis-1,3-Dichloropropene	10061-01-5	ND		0.263	0.000	ND		0.0526	0.000	ND		2.63	0.000
trans-1,3-Dichloropropene	10061-02-6	ND		0.243	0.000	ND		0.0486	0.000	ND		2.43	0.000

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	D-99	D-99	MW-10B
Lab Sample ID	2010911310	2010911310	2010911306

Continued

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Ethylbenzene	100-41-4	ND		0.234	0.000	ND		0.0469	0.000	ND		2.34	0.000
2-Hexanone	591-78-6	ND		4.19	0.000	ND		0.838	0.000	ND		41.9	0.000
4-Methyl-2-pentanone (MIBK)	108-10-1	ND		2.36	0.000	ND		0.473	0.000	ND		23.6	0.000
Methylene chloride	75-09-2	ND	B	0.105	0.000	ND	B	0.0210	0.000	ND	B	1.05	0.000
Styrene	100-42-5	ND		0.148	0.000	ND		0.0295	0.000	ND		1.48	0.000
1,1,2,2-Tetrachloroethane	79-34-5	ND		0.543	0.000	ND		0.109	0.000	ND		5.43	0.000
Tetrachloroethene	127-18-4	ND		0.514	0.000	ND		0.103	0.000	ND		5.14	0.000
Toluene	108-88-3	ND		0.118	0.000	ND		0.0236	0.000	ND		1.18	0.000
1,1,1-Trichloroethane	71-55-6	ND		0.256	0.000	ND		0.0511	0.000	ND		2.56	0.000
1,1,2-Trichloroethane	79-00-5	ND		0.244	0.000	ND		0.0489	0.000	ND		2.44	0.000
Trichloroethene	79-01-6	2.51		0.253	0.000	2.78		0.0506	0.000	ND		2.53	0.000
1,1,2-Trichlorotrifluoroethane	76-13-1	157		0.264	0.000	160	ER	0.0529	0.000	171		2.64	0.000
Vinyl acetate	108-05-4	ND		0.862	0.000	ND		0.172	0.000	ND		8.62	0.000
Vinyl chloride	75-01-4	ND		0.250	0.000	0.341	J	0.0501	0.000	ND		2.50	0.000
p-Xylene/m-Xylene	106-42-3	ND		0.434	0.000	ND		0.0869	0.000	ND		4.34	0.000
o-Xylene	95-47-6	ND		0.204	0.000	ND		0.0409	0.000	ND		2.04	0.000

SECTION IV
Analytical Results
Surrogates

MS-VOA
SW8260B

Client Sample ID	D-99	D-99	MW-10B
Lab Sample ID	2010911310	2010911310	2010911306
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 13:00	09/25/2001 13:00	09/25/2001 12:35
Date/Time Prepared	10/05/2001 11:09	10/05/2001 21:25	10/04/2001 22:39
Date/Time Analyzed	10/05/2001 11:09	10/05/2001 21:25	10/04/2001 22:39
Dilution Factor	5.0000	1.0000	50.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Surrogate Compound	% Recovery	Limits	F	% Recovery	Limits	F	% Recovery	Limits	F
1-Bromo-4-fluorobenzene	98	77-117		99	77-117		96	77-117	
1,2-Dichloroethane-d4	108	61-143		104	61-143		106	61-143	
Toluene-d8	102	87-113		103	87-113		104	87-113	

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-10B	MW-10D	MW-10D
Lab Sample ID	2010911306	2010911307	2010911307
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 12:35	09/25/2001 12:40	09/25/2001 12:40
Date/Time Prepared	10/05/2001 18:31	10/04/2001 23:10	10/05/2001 19:00
Date/Time Analyzed	10/05/2001 18:31	10/04/2001 23:10	10/05/2001 19:00
Dilution Factor	1.0000	50.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Acetone	67-64-1	ND		1.26	0.000	ND		62.8	0.000	ND		1.26	0.000
Benzene	71-43-2	ND		0.0465	0.000	ND		2.32	0.000	0.0507	J	0.0465	0.000
Bromodichloromethane	75-27-4	ND		0.0528	0.000	ND		2.64	0.000	ND		0.0528	0.000
Bromoform	75-25-2	ND		0.106	0.000	ND		5.30	0.000	ND		0.106	0.000
Bromomethane	74-83-9	ND		0.0454	0.000	ND		2.27	0.000	ND		0.0454	0.000
2-Butanone (MEK)	78-93-3	ND		2.83	0.000	ND		141	0.000	ND		2.83	0.000
Carbon disulfide	75-15-0	ND		0.0415	0.000	ND		2.08	0.000	ND		0.0415	0.000
Carbon tetrachloride	56-23-5	ND		0.0553	0.000	ND		2.76	0.000	ND		0.0553	0.000
Chlorobenzene	108-90-7	ND		0.0404	0.000	ND		2.02	0.000	ND		0.0404	0.000
Chloroethane	75-00-3	ND		0.0755	0.000	ND		3.78	0.000	ND		0.0755	0.000
Chloroform	67-66-3	0.125	J	0.0338	0.000	ND		1.69	0.000	0.240	J	0.0338	0.000
Chloromethane	74-87-3	ND		0.0509	0.000	ND		2.54	0.000	ND		0.0509	0.000
Dibromochloromethane	124-48-1	ND		0.0946	0.000	ND		4.73	0.000	ND		0.0946	0.000
1,1-Dichloroethane	75-34-3	ND		0.0445	0.000	ND		2.22	0.000	ND		0.0445	0.000
1,2-Dichloroethane	107-06-2	ND		0.0632	0.000	ND		3.16	0.000	0.210	J	0.0632	0.000
1,1-Dichloroethene	75-35-4	1.70		0.0492	0.000	5.10	J	2.46	0.000	4.48		0.0492	0.000
cis-1,2-Dichloroethene	156-59-2	15.2		0.0353	0.000	35.6		1.76	0.000	34.1		0.0353	0.000
trans-1,2-Dichloroethene	156-60-5	0.134	J	0.0430	0.000	ND		2.15	0.000	0.157	J	0.0430	0.000
1,2-Dichloropropane	78-87-5	ND		0.0519	0.000	ND		2.60	0.000	ND		0.0519	0.000
cis-1,3-Dichloropropene	10061-01-5	ND		0.0526	0.000	ND		2.63	0.000	ND		0.0526	0.000
trans-1,3-Dichloropropene	10061-02-6	ND		0.0486	0.000	ND		2.43	0.000	ND		0.0486	0.000

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-10B	MW-10D	MW-10D
Lab Sample ID	2010911306	2010911307	2010911307

Continued

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Ethylbenzene	100-41-4	ND		0.0469	0.000	ND		2.34	0.000	ND		0.0469	0.000
2-Hexanone	591-78-6	ND		0.838	0.000	ND		41.9	0.000	ND		0.838	0.000
4-Methyl-2-pentanone (MIBK)	108-10-1	ND		0.473	0.000	ND		23.6	0.000	ND		0.473	0.000
Methylene chloride	75-09-2	0.0770	JB	0.0210	0.000	ND	B	1.05	0.000	0.280	JB	0.0210	0.000
Styrene	100-42-5	ND		0.0295	0.000	ND		1.48	0.000	ND		0.0295	0.000
1,1,2,2-Tetrachloroethane	79-34-5	ND		0.109	0.000	ND		5.43	0.000	ND		0.109	0.000
Tetrachloroethene	127-18-4	0.205	J	0.103	0.000	ND		5.14	0.000	0.185	J	0.103	0.000
Toluene	108-88-3	ND		0.0236	0.000	ND		1.18	0.000	ND		0.0236	0.000
1,1,1-Trichloroethane	71-55-6	ND		0.0511	0.000	ND		2.56	0.000	ND		0.0511	0.000
1,1,2-Trichloroethane	79-00-5	ND		0.0489	0.000	ND		2.44	0.000	ND		0.0489	0.000
Trichloroethene	79-01-6	1.92		0.0506	0.000	1.54	U	2.53	0.000	2.68		0.0506	0.000
1,1,2-Trichlorotrifluoroethane	76-13-1	161	ER	0.0529	0.000	277		2.64	0.000	264	ER	0.0529	0.000
Vinyl acetate	108-05-4	ND		0.172	0.000	ND		8.62	0.000	ND		0.172	0.000
Vinyl chloride	75-01-4	ND		0.0501	0.000	ND		2.50	0.000	0.420	J	0.0501	0.000
p-Xylene/m-Xylene	106-42-3	ND		0.0869	0.000	ND		4.34	0.000	ND		0.0869	0.000
o-Xylene	95-47-6	ND		0.0409	0.000	ND		2.04	0.000	ND		0.0409	0.000

SECTION IV
Analytical Results
Surrogates

MS-VOA
SW8260B

Client Sample ID	MW-10B	MW-10D	MW-10D
Lab Sample ID	2010911306	2010911307	2010911307
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 12:35	09/25/2001 12:40	09/25/2001 12:40
Date/Time Prepared	10/05/2001 18:31	10/04/2001 23:10	10/05/2001 19:00
Date/Time Analyzed	10/05/2001 18:31	10/04/2001 23:10	10/05/2001 19:00
Dilution Factor	1.0000	50.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Surrogate Compound	% Recovery	Limits	F	% Recovery	Limits	F	% Recovery	Limits	F
1-Bromo-4-fluorobenzene	100	77-117		98	77-117		99	77-117	
1,2-Dichloroethane-d4	105	61-143		102	61-143		105	61-143	
Toluene-d8	103	87-113		101	87-113		104	87-113	

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-19D	MW-19D	MW-20B
Lab Sample ID	2010911304	2010911304	2010911311
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 11:05	09/25/2001 11:05	09/25/2001 13:45
Date/Time Prepared	10/04/2001 18:48	10/05/2001 04:57	10/04/2001 19:46
Date/Time Analyzed	10/04/2001 18:48	10/05/2001 04:57	10/04/2001 19:46
Dilution Factor	1.0000	5.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Acetone	67-64-1	ND		1.26	0.000	ND		6.28	0.000	ND		1.26	0.000
Benzene	71-43-2	ND		0.0465	0.000	ND		0.232	0.000	ND		0.0465	0.000
Bromodichloromethane	75-27-4	ND		0.0528	0.000	ND		0.264	0.000	ND		0.0528	0.000
Bromoform	75-25-2	ND		0.106	0.000	ND		0.530	0.000	ND		0.106	0.000
Bromomethane	74-83-9	ND		0.0454	0.000	ND		0.227	0.000	ND		0.0454	0.000
2-Butanone (MEK)	78-93-3	ND		2.83	0.000	ND		14.1	0.000	ND		2.83	0.000
Carbon disulfide	75-15-0	ND		0.0415	0.000	ND		0.208	0.000	ND		0.0415	0.000
Carbon tetrachloride	56-23-5	ND		0.0553	0.000	ND		0.276	0.000	ND		0.0553	0.000
Chlorobenzene	108-90-7	ND		0.0404	0.000	ND		0.202	0.000	ND		0.0404	0.000
Chloroethane	75-00-3	ND		0.0755	0.000	ND		0.378	0.000	ND		0.0755	0.000
Chloroform	67-66-3	0.288	J	0.0338	0.000	ND		0.169	0.000	ND		0.0338	0.000
Chloromethane	74-87-3	ND		0.0509	0.000	ND		0.254	0.000	ND		0.0509	0.000
Dibromochloromethane	124-48-1	ND		0.0946	0.000	ND		0.473	0.000	ND		0.0946	0.000
1,1-Dichloroethane	75-34-3	ND		0.0445	0.000	ND		0.222	0.000	ND		0.0445	0.000
1,2-Dichloroethane	107-06-2	ND		0.0632	0.000	ND		0.316	0.000	ND		0.0632	0.000
1,1-Dichloroethene	75-35-4	ND		0.0492	0.000	ND		0.246	0.000	ND		0.0492	0.000
cis-1,2-Dichloroethene	156-59-2	10.1		0.0353	0.000	9.79		0.176	0.000	ND		0.0353	0.000
trans-1,2-Dichloroethene	156-60-5	0.127	J	0.0430	0.000	ND		0.215	0.000	ND		0.0430	0.000
1,2-Dichloropropane	78-87-5	ND		0.0519	0.000	ND		0.260	0.000	ND		0.0519	0.000
cis-1,3-Dichloropropene	10061-01-5	ND		0.0526	0.000	ND		0.263	0.000	ND		0.0526	0.000
trans-1,3-Dichloropropene	10061-02-6	ND		0.0486	0.000	ND		0.243	0.000	ND		0.0486	0.000

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-19D	MW-19D	MW-20B
Lab Sample ID	2010911304	2010911304	2010911311

Continued

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Ethylbenzene	100-41-4	ND		0.0469	0.000	ND		0.234	0.000	ND		0.0469	0.000
2-Hexanone	591-78-6	ND		0.838	0.000	ND		4.19	0.000	ND		0.838	0.000
4-Methyl-2-pentanone (MIBK)	108-10-1	ND		0.473	0.000	ND		2.36	0.000	ND		0.473	0.000
Methylene chloride	75-09-2	0.0599	JB	0.0210	0.000	ND	B	0.105	0.000	ND	B	0.0210	0.000
Styrene	100-42-5	ND		0.0295	0.000	ND		0.148	0.000	ND		0.0295	0.000
1,1,2,2-Tetrachloroethane	79-34-5	ND		0.109	0.000	ND		0.543	0.000	ND		0.109	0.000
Tetrachloroethene	127-18-4	0.0827	U	0.103	0.000	ND		0.514	0.000	ND		0.103	0.000
Toluene	108-88-3	ND		0.0236	0.000	ND		0.118	0.000	ND		0.0236	0.000
1,1,1-Trichloroethane	71-55-6	ND		0.0511	0.000	ND		0.256	0.000	ND		0.0511	0.000
1,1,2-Trichloroethane	79-00-5	ND		0.0489	0.000	ND		0.244	0.000	ND		0.0489	0.000
Trichloroethene	79-01-6	3.08		0.0506	0.000	2.57		0.253	0.000	ND		0.0506	0.000
1,1,2-Trichlorotrifluoroethane	76-13-1	173	ER	0.0529	0.000	175		0.264	0.000	ND		0.0529	0.000
Vinyl acetate	108-05-4	ND		0.172	0.000	ND		0.862	0.000	ND		0.172	0.000
Vinyl chloride	75-01-4	ND		0.0501	0.000	ND		0.250	0.000	ND		0.0501	0.000
p-Xylene/m-Xylene	106-42-3	ND		0.0869	0.000	ND		0.434	0.000	ND		0.0869	0.000
o-Xylene	95-47-6	ND		0.0409	0.000	ND		0.204	0.000	ND		0.0409	0.000

SECTION IV
Analytical Results
Surrogates

MS-VOA
SW8260B

Client Sample ID	MW-19D	MW-19D	MW-20B
Lab Sample ID	2010911304	2010911304	2010911311
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 11:05	09/25/2001 11:05	09/25/2001 13:45
Date/Time Prepared	10/04/2001 18:48	10/05/2001 04:57	10/04/2001 19:46
Date/Time Analyzed	10/04/2001 18:48	10/05/2001 04:57	10/04/2001 19:46
Dilution Factor	1.0000	5.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Surrogate Compound	% Recovery	Limits	F	% Recovery	Limits	F	% Recovery	Limits	F
1-Bromo-4-fluorobenzene	98	77-117		98	77-117		100	77-117	
1,2-Dichloroethane-d4	104	61-143		106	61-143		103	61-143	
Toluene-d8	101	87-113		100	87-113		101	87-113	

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-8D	MW-8D	TB-1
Lab Sample ID	2010911314	2010911314	2010911319
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 14:20	09/25/2001 14:20	09/24/2001 16:00
Date/Time Prepared	10/05/2001 01:09	10/05/2001 19:30	10/04/2001 17:22
Date/Time Analyzed	10/05/2001 01:09	10/05/2001 19:30	10/04/2001 17:22
Dilution Factor	1000.0000	50.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Acetone	67-64-1	ND		1260	0.000	426		62.8	0.000	ND		1.26	0.000
Benzene	71-43-2	ND		46.5	0.000	ND		2.32	0.000	ND		0.0465	0.000
Bromodichloromethane	75-27-4	ND		52.8	0.000	ND		2.64	0.000	ND		0.0528	0.000
Bromoform	75-25-2	ND		106	0.000	ND		5.30	0.000	ND		0.106	0.000
Bromomethane	74-83-9	ND		45.4	0.000	ND		2.27	0.000	ND		0.0454	0.000
2-Butanone (MEK)	78-93-3	ND		2830	0.000	2510		141	0.000	ND		2.83	0.000
Carbon disulfide	75-15-0	ND		41.5	0.000	ND		2.08	0.000	ND		0.0415	0.000
Carbon tetrachloride	56-23-5	ND		55.3	0.000	ND		2.76	0.000	ND		0.0553	0.000
Chlorobenzene	108-90-7	ND		40.4	0.000	ND		2.02	0.000	ND		0.0404	0.000
Chloroethane	75-00-3	ND		75.5	0.000	ND		3.78	0.000	ND		0.0755	0.000
Chloroform	67-66-3	ND		33.8	0.000	11.3	J	1.69	0.000	ND		0.0338	0.000
Chloromethane	74-87-3	ND		50.9	0.000	ND		2.54	0.000	ND		0.0509	0.000
Dibromochloromethane	124-48-1	ND		94.6	0.000	ND		4.73	0.000	ND		0.0946	0.000
1,1-Dichloroethane	75-34-3	ND		44.5	0.000	ND		2.22	0.000	ND		0.0445	0.000
1,2-Dichloroethane	107-06-2	ND		63.2	0.000	9.00	J	3.16	0.000	ND		0.0632	0.000
1,1-Dichloroethene	75-35-4	ND		49.2	0.000	ND		2.46	0.000	ND		0.0492	0.000
cis-1,2-Dichloroethene	156-59-2	625		35.3	0.000	499		1.76	0.000	ND		0.0353	0.000
trans-1,2-Dichloroethene	156-60-5	ND		43.0	0.000	ND		2.15	0.000	ND		0.0430	0.000
1,2-Dichloropropane	78-87-5	ND		51.9	0.000	ND		2.60	0.000	ND		0.0519	0.000
cis-1,3-Dichloropropene	10061-01-5	ND		52.6	0.000	ND		2.63	0.000	ND		0.0526	0.000
trans-1,3-Dichloropropene	10061-02-6	ND		48.6	0.000	ND		2.43	0.000	ND		0.0486	0.000

SECTION IV
Analytical Results

MS-VOA
SW8260B

Client Sample ID	MW-8D	MW-8D	TB-1
Lab Sample ID	2010911314	2010911314	2010911319

Continued

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Ethylbenzene	100-41-4	ND		46.9	0.000	ND		2.34	0.000	ND		0.0469	0.000
2-Hexanone	591-78-6	ND		838	0.000	ND		41.9	0.000	ND		0.838	0.000
4-Methyl-2-pentanone (MIBK)	108-10-1	ND		473	0.000	ND		23.6	0.000	ND		0.473	0.000
Methylene chloride	75-09-2	74.9	JB	21.0	0.000	23.3	JB	1.05	0.000	0.0645	JB	0.0210	0.000
Styrene	100-42-5	ND		29.5	0.000	ND		1.48	0.000	ND		0.0295	0.000
1,1,2,2-Tetrachloroethane	79-34-5	ND		109	0.000	ND		5.43	0.000	ND		0.109	0.000
Tetrachloroethene	127-18-4	ND		103	0.000	ND		5.14	0.000	ND		0.103	0.000
Toluene	108-88-3	ND		23.6	0.000	12.8	J	1.18	0.000	ND		0.0236	0.000
1,1,1-Trichloroethane	71-55-6	ND		51.1	0.000	ND		2.56	0.000	ND		0.0511	0.000
1,1,2-Trichloroethane	79-00-5	ND		48.9	0.000	ND		2.44	0.000	ND		0.0489	0.000
Trichloroethene	79-01-6	421	J	50.6	0.000	479		2.53	0.000	ND		0.0506	0.000
1,1,2-Trichlorotrifluoroethane	76-13-1	48300		52.9	0.000	32000	ER	2.64	0.000	ND		0.0529	0.000
Vinyl acetate	108-05-4	ND		172	0.000	ND		8.62	0.000	ND		0.172	0.000
Vinyl chloride	75-01-4	ND		50.1	0.000	ND		2.50	0.000	ND		0.0501	0.000
p-Xylene/m-Xylene	106-42-3	ND		86.9	0.000	ND		4.34	0.000	ND		0.0869	0.000
o-Xylene	95-47-6	ND		40.9	0.000	ND		2.04	0.000	ND		0.0409	0.000

SECTION IV
Analytical Results
Surrogates

MS-VOA
SW8260B

Client Sample ID	MW-8D	MW-8D	TB-1
Lab Sample ID	2010911314	2010911314	2010911319
Matrix	Aqueous	Aqueous	Aqueous
Reported As	Received	Received	Received
% Moisture	NA	NA	NA
Date/Time Collected	09/25/2001 14:20	09/25/2001 14:20	09/24/2001 16:00
Date/Time Prepared	10/05/2001 01:09	10/05/2001 19:30	10/04/2001 17:22
Date/Time Analyzed	10/05/2001 01:09	10/05/2001 19:30	10/04/2001 17:22
Dilution Factor	1000.0000	50.0000	1.0000
Instrument	MSDA	MSDA	MSDA
Units	ug/L	ug/L	ug/L

Surrogate Compound	% Recovery	Limits	F	% Recovery	Limits	F	% Recovery	Limits	F
1-Bromo-4-fluorobenzene	98	77-117		97	77-117		93	77-117	
1,2-Dichloroethane-d4	104	61-143		104	61-143		99	61-143	
Toluene-d8	102	87-113		103	87-113		103	87-113	

SECTION V
Calibration and QC Information
Calibration Verification Results

MS-VOA
SW8260B

Sample Type: Continuing Calibration Check
Analysis Batch ID: 13711 Instrument Data File: A1004102.D Date/Time Analyzed: 10/04/2001 14:46
Instrument ID: MSDA Analyst: BJP Units: ug/L

Parameter	Reference Value	Measured Conc	Flag	%Recovery	Flag	QC Limits %Recovery
Acetone	20	17.8		89		
Benzene	20	19.6		98		
Bromodichloromethane	20	17.9		90		
Bromoform	20	13.4		67 ✓		
Bromomethane	20	19.6		98		
2-Butanone (MEK)	20	18.5		93		
Carbon disulfide	20	15.0		75 ✓		
Carbon tetrachloride	20	18.3		91		
Chlorobenzene	20	19.5		97		
Chloroethane	20	19.5		98		
Chloroform	20	19.7		98		80-120
Chloromethane	20	18.1		91		
Dibromochloromethane	20	15.7		78 ✓		
1,1-Dichloroethane	20	21.2		106		
1,2-Dichloroethane	20	20.8		104		
1,1-Dichloroethene	20	19.4		97		80-120
cis-1,2-Dichloroethene	20	19.7		99		
trans-1,2-Dichloroethene	20	20.1		100		
1,2-Dichloropropane	20	20.1		100		80-120
cis-1,3-Dichloropropene	20	18.9		94		
trans-1,3-Dichloropropene	20	18.5		93		
Ethylbenzene	20	19.0		95		80-120
2-Hexanone	20	18.6		93		
4-Methyl-2-pentanone (MIBK)	20	18.7		94		
Methylene chloride	20	19.9		99		
Styrene	20	18.8		94		

SECTION V
Calibration and QC Information
Calibration Verification Results

MS-VOA
SW8260B

Sample Type: Continuing Calibration Check
Analysis Batch ID: 13711 **Instrument Data File:** A1004102.D **Date/Time Analyzed:** 10/04/2001 14:46
Instrument ID: MSDA **Analyst:** BJP **Units:** ug/L

Continued

Parameter	Reference Value	Measured Conc	Flag	%Recovery	Flag	QC Limits %Recovery
1,1,2,2-Tetrachloroethane	20	17.7		88		
Tetrachloroethene	20	20.2		101		
Toluene	20	19.3		97		80-120
1,1,1-Trichloroethane	20	19.8		99		
1,1,2-Trichloroethane	20	18.4		92		
Trichloroethene	20	20.6		103		
1,1,2-Trichlorotrifluoroethane	20	19.4		97		
Vinyl acetate	20	20.0		100		
Vinyl chloride	20	19.3		96		80-120
p-Xylene/m-Xylene	40	38.8		97		
o-Xylene	20	18.9		95		

SECTION V
Calibration and QC Information
Calibration Verification Results

MS-VOA
SW8260B

Sample Type: Continuing Calibration Check
Analysis Batch ID: 13711 **Instrument Data File:** A1004128.D **Date/Time Analyzed:** 10/05/2001 03:31
Instrument ID: MSDA **Analyst:** BJP **Units:** ug/L

Parameter	Reference Value	Measured Conc	Flag	%Recovery	Flag	QC Limits %Recovery
Acetone	20	16.4		82		
Benzene	20	17.4		87		
Bromodichloromethane	20	18.3		92		
Bromoform	20	16.5		82		
Bromomethane	20	16.6		83		
2-Butanone (MEK)	20	21.5		107		
Carbon disulfide	20	16.3		82		
Carbon tetrachloride	20	16.5		83		
Chlorobenzene	20	17.4		87		
Chloroethane	20	16.8		84		
Chloroform	20	17.8		89		80-120
Chloromethane	20	16.2		81		
Dibromochloromethane	20	17.8		89		
1,1-Dichloroethane	20	19.2		96		
1,2-Dichloroethane	20	20.8		104		
1,1-Dichloroethene	20	16.3		81		80-120
cis-1,2-Dichloroethene	20	17.4		87		
trans-1,2-Dichloroethene	20	17.1		86		
1,2-Dichloropropane	20	18.6		93		80-120
cis-1,3-Dichloropropene	20	18.1		91		
trans-1,3-Dichloropropene	20	18.1		90		
Ethylbenzene	20	16.8		84		80-120
2-Hexanone	20	19.8		99		
4-Methyl-2-pentanone (MIBK)	20	20.4		102		
Methylene chloride	20	18.6		93		
Styrene	20	17.3		87		

SECTION V
Calibration and QC Information
Calibration Verification Results

MS-VOA
SW8260B

Sample Type: Continuing Calibration Check
Analysis Batch ID: 13711 **Instrument Data File:** A1004128.D **Date/Time Analyzed:** 10/05/2001 03:31
Instrument ID: MSDA **Analyst:** BJP **Units:** ug/L

Continued

Parameter	Reference Value	Measured Conc	Flag	%Recovery	Flag	QC Limits %Recovery
1,1,2,2-Tetrachloroethane	20	17.9		90		
Tetrachloroethene	20	18.3		91		
Toluene	20	16.8		84		80-120
1,1,1-Trichloroethane	20	16.8		84		
1,1,2-Trichloroethane	20	18.0		90		
Trichloroethene	20	17.0		85		
1,1,2-Trichlorotrifluoroethane	20	15.4		77		
Vinyl acetate	20	18.6		93		
Vinyl chloride	20	16.2		81		80-120
p-Xylene/m-Xylene	40	32.9		82		
o-Xylene	20	17.1		86		

SECTION V
Calibration and QC Information
Calibration Verification Results

MS-VOA
SW8260B

Sample Type: Continuing Calibration Check
Analysis Batch ID: 13711 **Instrument Data File:** A1004137.D **Date/Time Analyzed:** 10/05/2001 17:06
Instrument ID: MSDA **Analyst:** BJP **Units:** ug/L

Parameter	Reference Value	Measured Conc	Flag	%Recovery	Flag	QC Limits %Recovery
Acetone	20	18.1		90		
Benzene	20	20.4		102		
Bromodichloromethane	20	17.8		89		
Bromoform	20	11.7		58		
Bromomethane	20	19.2		96		
2-Butanone (MEK)	20	21.6		108		
Carbon disulfide	20	19.1		96		
Carbon tetrachloride	20	17.6		88		
Chlorobenzene	20	20.2		101		
Chloroethane	20	20.4		102		
Chloroform	20	20.1		101		80-120
Chloromethane	20	18.6		93		
Dibromochloromethane	20	15.4		77		
1,1-Dichloroethane	20	21.9		109		
1,2-Dichloroethane	20	21.3		107		
1,1-Dichloroethene	20	19.2		96		80-120
cis-1,2-Dichloroethene	20	19.8		99		
trans-1,2-Dichloroethene	20	20.3		101		
1,2-Dichloropropane	20	20.6		103		80-120
cis-1,3-Dichloropropene	20	19.9		100		
trans-1,3-Dichloropropene	20	19.1		95		
Ethylbenzene	20	20.7		103		80-120
2-Hexanone	20	20.5		102		
4-Methyl-2-pentanone (MIBK)	20	21.4		107		
Methylene chloride	20	20.1		100		
Styrene	20	19.7		99		

SECTION V
Calibration and QC Information
Calibration Verification Results

MS-VOA
SW8260B

Sample Type: Continuing Calibration Check
Analysis Batch ID: 13711 **Instrument Data File:** A1004137.D **Date/Time Analyzed:** 10/05/2001 17:06
Instrument ID: MSDA **Analyst:** BJP **Units:** ug/L

Continued

Parameter	Reference Value	Measured Conc	Flag	%Recovery	Flag	QC Limits %Recovery
1,1,2,2-Tetrachloroethane	20	16.8		84		
Tetrachloroethene	20	20.7		104		
Toluene	20	20.4		102		80-120
1,1,1-Trichloroethane	20	20.2		101		
1,1,2-Trichloroethane	20	18.3		91		
Trichloroethene	20	20.8		104		
1,1,2-Trichlorotrifluoroethane	20	18.4		92		
Vinyl acetate	20	19.6		98		
Vinyl chloride	20	19.8		99		80-120
p-Xylene/m-Xylene	40	41.2		103		
o-Xylene	20	20.3		101		

SECTION V
Calibration and QC Information
Mass Spectrometer Tune

MS-VOA
SW8260B
BFB

Analysis Batch ID: 13711 **Instrument Data File:** A1004102.D **Date Analyzed:** 10/04/2001 14:46
Instrument ID: MSDA **Injection Time:** 10/04/2001 14:46 **Analyst:** BJP

Mass/Energy	Ion Abundance Criteria		% Relative Abundance
	Lower Limit	Upper Limit	
50	15	40	22.8
75	30	60	47.9
95	100	100	100
96	5	9	7
173	0	2	0
174	50		71.7
175	5	9	7.5
176	95	101	95.8
177	5	9	7.2

SECTION V
Calibration and QC Information
Mass Spectrometer Tune

MS-VOA
SW8260B
BFB

Analysis Batch ID: 13711
Instrument ID: MSDA

Instrument Data File: A1004128.D
Injection Time: 10/05/2001 03:31

Date Analyzed: 10/05/2001 03:31
Analyst: BJP

Mass/Energy	Ion Abundance Criteria		% Relative Abundance
	Lower Limit	Upper Limit	
50	15	40	25.2
75	30	60	48.4
95	100	100	100
96	5	9	6.6
173	0	2	0
174	50		76.2
175	5	9	7.7
176	95	101	97.3
177	5	9	6.8

SECTION V
Calibration and QC Information
Mass Spectrometer Tune

MS-VOA
SW8260B
BFB

Analysis Batch ID: 13711
Instrument ID: MSDA

Instrument Data File: A1004137.D
Injection Time: 10/05/2001 17:06

Date Analyzed: 10/05/2001 17:06
Analyst: BJP

Mass/Energy	Ion Abundance Criteria		% Relative Abundance
	Lower Limit	Upper Limit	
50	15	40	25.8
75	30	60	48.2
95	100	100	100
96	5	9	6.7
173	0	2	0
174	50		76.5
175	5	9	7.6
176	95	101	98
177	5	9	6.7

SECTION V
Calibration and QC Information
Method Blank Results

MS-VOA
SW8260B

Method Blank ID	1029683		
Sample Type	Method Blank		
Matrix	Aqueous		
Date/Time Prepared	10/04/2001 16:43		
Date/Time Analyzed	10/04/2001 16:43		
Instrument	MSDA		
Units	ug/L		

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Acetone	67-64-1	ND		1.26	0.000								
Benzene	71-43-2	ND		0.0465	0.000								
Bromodichloromethane	75-27-4	ND		0.0528	0.000								
Bromoform	75-25-2	ND		0.106	0.000								
Bromomethane	74-83-9	ND		0.0454	0.000								
2-Butanone (MEK)	78-93-3	ND		2.83	0.000								
Carbon disulfide	75-15-0	ND		0.0415	0.000								
Carbon tetrachloride	56-23-5	ND		0.0553	0.000								
Chlorobenzene	108-90-7	ND		0.0404	0.000								
Chloroethane	75-00-3	ND		0.0755	0.000								
Chloroform	67-66-3	ND		0.0338	0.000								
Chloromethane	74-87-3	ND		0.0509	0.000								
Dibromochloromethane	124-48-1	ND		0.0946	0.000								
1,1-Dichloroethane	75-34-3	ND		0.0445	0.000								
1,2-Dichloroethane	107-06-2	ND		0.0632	0.000								
1,1-Dichloroethene	75-35-4	ND		0.0492	0.000								
cis-1,2-Dichloroethene	156-59-2	ND		0.0353	0.000								
trans-1,2-Dichloroethene	156-60-5	ND		0.0430	0.000								
1,2-Dichloropropane	78-87-5	ND		0.0519	0.000								
cis-1,3-Dichloropropene	10061-01-5	ND		0.0526	0.000								
trans-1,3-Dichloropropene	10061-02-6	ND		0.0486	0.000								
Ethylbenzene	100-41-4	ND		0.0469	0.000								
2-Hexanone	591-78-6	ND		0.838	0.000								
4-Methyl-2-pentanone (MIBK)	108-10-1	ND		0.473	0.000								
Methylene chloride	75-09-2	0.0445	J	0.0210	0.000								

SECTION V
Calibration and QC Information
Method Blank Results

MS-VOA
SW8260B

Method Blank ID	1029683		

Continued

Parameter	CAS	Conc	Flag	DL	RL	Conc	Flag	DL	RL	Conc	Flag	DL	RL
Styrene	100-42-5	ND		0.0295	0.000								
1,1,2,2-Tetrachloroethane	79-34-5	ND		0.109	0.000								
Tetrachloroethene	127-18-4	ND		0.103	0.000								
Toluene	108-88-3	ND		0.0236	0.000								
1,1,1-Trichloroethane	71-55-6	ND		0.0511	0.000								
1,1,2-Trichloroethane	79-00-5	ND		0.0489	0.000								
Trichloroethene	79-01-6	ND		0.0506	0.000								
1,1,2-Trichlorotrifluoroethane	76-13-1	ND		0.0529	0.000								
Vinyl acetate	108-05-4	ND		0.172	0.000								
Vinyl chloride	75-01-4	ND		0.0501	0.000								
p-Xylene/m-Xylene	106-42-3	ND		0.0869	0.000								
o-Xylene	95-47-6	ND		0.0409	0.000								

SECTION V
Calibration and QC Information
Method Blank Results

MS-VOA
SW8260B

Method Blank ID	1029683		
Sample Type	Method Blank		
Matrix	Aqueous		
Date/Time Prepared	10/04/2001 16:43		
Date/Time Analyzed	10/04/2001 16:43		
Instrument	MSDA		
Units	ug/L		

Surrogate Compound	% Recovery	Limits	F	% Recovery	Limits	F	% Recovery	Limits	F
1-Bromo-4-fluorobenzene	99	77-117							
1,2-Dichloroethane-d4	103	61-143							
Toluene-d8	100	87-113							

SECTION V
Calibration and QC Information
Spiked Sample Results

MS-VOA
SW8260B

Client Sample ID:	MW-20B	Instrument ID:	MSDA		
Sample Type:	Matrix Spike	Units:	ug/L	% Moisture:	NA
Prep Batch ID:	13711	Matrix:	Aqueous	Analyst:	BJP
Analysis Batch ID:	13711				

	Parent Sample		Spiked Sample			Spiked Sample Duplicate				QC Limits	
	2010911311 Dil Fac: 1.0000		Lab ID: 1029844 Dil Fac: 1.0000 File ID: A1004134.D			Lab ID: 1029845 Dil Fac: 1.0000 File ID: A1004135.D					
Parameter	Conc	Flg	Spk Conc	Conc	%Rec Flg	Spk Conc	Conc	%Rec Flg	RPD Flg	%Rec	RPD
Acetone	ND		20	14.9	74	20	12.3	62	18	0.1-240	71
Benzene	ND		20	15.8	79	20	14.0	70 Q	12	71-133	17
Bromodichloromethane	ND		20	10.3	51 Q	20	9.93	50 Q	2	57-135	19
Bromoform	ND		20	3.75	19 Q	20	3.75	19 Q	0	23-151	17
Bromomethane	ND		20	15.9	80	20	14.1	70	13	34-128	25
2-Butanone (MEK)	ND		20	16.5	82	20	13.5	67	20	0.1-214	39
Carbon disulfide	ND		20	12.3	61	20	10.5	52	16	29-223	23
Carbon tetrachloride	ND		20	8.91	45 Q	20	8.90	45 Q	0	46-150	23
Chlorobenzene	ND		20	15.4	77	20	13.2	66 Q	15 Q	77-129	14
Chloroethane	ND		20	16.3	81	20	14.4	72	12	39-133	27
Chloroform	ND		20	15.6	78	20	13.6	68	14	64-146	16
Chloromethane	ND		20	15.9	80	20	14.0	70	13	18-140	26
Dibromochloromethane	ND		20	6.20	31 Q	20	6.28	31 Q	0	45-137	15
1,1-Dichloroethane	ND		20	17.9	90	20	15.5	77	16	66-138	19
1,2-Dichloroethane	ND		20	16.5	82	20	14.4	72	13	48-152	23
1,1-Dichloroethene	ND		20	16.1	81	20	14.3	71	13	47-175	25
cis-1,2-Dichloroethene	ND		20	15.7	79	20	13.8	69	14	66-144	18
trans-1,2-Dichloroethene	ND		20	16.4	82	20	14.6	73	12	62-146	22
1,2-Dichloropropane	ND		20	15.9	79	20	14.0	70	12	61-133	17
cis-1,3-Dichloropropene	ND		20	13.6	68	20	12.4	62	9.2	36-142	16

Note: Spike Concentration for solid matrices not adjusted for percent moisture.

SECTION V
Calibration and QC Information
Spiked Sample Results

MS-VOA
SW8260B

	Parent continued		Spiked Sample continued				Spiked Sample Duplicate continued						
	2010911311 Dil Fac: 1.0000		Lab ID: 1029844 Dil Fac: 1.0000 File ID: A1004134.D				Lab ID: 1029845 Dil Fac: 1.0000 File ID: A1004135.D				QC Limits		
Parameter	Conc	Flg	Spk Conc	Conc	%Rec	Flg	Spk Conc	Conc	%Rec	Flg	RPD	Flg	%Rec	RPD
trans-1,3-Dichloropropene	ND		20	12.8	64		20	11.5	57		12		34-138	21
Ethylbenzene	ND		20	15.7	79		20	13.4	67	Q	16	Q	75-131	14
2-Hexanone	ND		20	14.0	70		20	12.6	63		11		22-164	34
4-Methyl-2-pentanone (MIBK)	ND		20	14.2	71		20	13.0	65		8.8		27-149	36
Methylene chloride	ND	B	20	16.0	80		20	14.2	71		12		36-166	23
Styrene	ND		20	12.5	63	Q	20	11.1	56	Q	12		68-136	14
1,1,2,2-Tetrachloroethane	ND		20	12.2	61		20	10.7	53		14		47-143	20
Tetrachloroethene	ND		20	16.3	82		20	13.6	68	Q	19	Q	69-137	16
Toluene	ND		20	15.7	79		20	13.4	67	Q	16		70-132	17
1,1,1-Trichloroethane	ND		20	14.4	72		20	13.0	65		10		49-155	24
1,1,2-Trichloroethane	ND		20	13.6	68		20	11.8	59	Q	14		67-135	17
Trichloroethene	ND		20	16.5	82		20	14.5	72		13		71-129	17
1,1,2-Trichlorotrifluoroethane	ND		20	16.6	83		20	14.3	72		14			
Vinyl acetate	ND		20	10.6	53		20	10.5	52		1.9		0.1-164	31
Vinyl chloride	ND		20	16.9	85		20	14.9	75		13		24-138	27
p-Xylene/m-Xylene	ND		40	30.9	77		40	25.6	64	Q	18	Q	76-134	15
o-Xylene	ND		20	15.1	76	Q	20	12.8	64	Q	17	Q	77-131	15

Note: Spike Concentration for solid matrices not adjusted for percent moisture.

SECTION V
Calibration and QC Information
Spiked Sample Results

MS-VOA
SW8260B

	Lab ID: 1029844		Lab ID: 1029845		
Surrogate Compounds	%Recovery	Flags	%Recovery	Flags	QC Recovery Limits
1-Bromo-4-fluorobenzene	98		97		77-117
1,2-Dichloroethane-d4	105		103		61-143
Toluene-d8	102		104		87-113

Note: Spike Concentration for solid matrices not adjusted for percent moisture.

SECTION V
Calibration and QC Information
Control Sample Results

MS-VOA
SW8260B

Client Sample ID:	LCS for HBN 13711 [MSV/1673]	Instrument ID:	MSDA	% Moisture:	NA
Prep Batch ID:	13711	Units:	ug/L	Analyst:	BJP
Analysis Batch ID:	13711	Matrix:	Aqueous		

	Control Sample			Control Sample Duplicate					
	Lab ID: 1029681 File ID: A1004103.D			Lab ID: 1029682 File ID: A1004104.D				QC Limits	
Parameter	Spk Amt	Conc	%Rec Flg	Spk Amt	Conc	%Rec Flg	RPD Flg	%Rec	RPD
Acetone	20	20.5	102	20	22.2	111	8.5	0.1-240	71
Benzene	20	21.0	105	20	20.6	103	1.9	71-133	17
Bromodichloromethane	20	16.7	83	20	17.2	86	3.6	57-135	19
Bromoform	20	14.2	71	20	15.5	78	9.4	23-151	17
Bromomethane	20	13.3	66	20	13.1	65	1.5	34-128	25
2-Butanone (MEK)	20	20.7	104	20	18.8	94	10	0.1-214	39
Carbon disulfide	20	14.6	73	20	16.5	83	13	29-223	23
Carbon tetrachloride	20	18.5	92	20	18.8	94	2.2	46-150	23
Chlorobenzene	20	18.7	93	20	18.5	92	1.1	77-129	14
Chloroethane	20	16.0	80	20	15.9	79	1.3	39-133	27
Chloroform	20	19.0	95	20	19.0	95	0	64-146	16
Chloromethane	20	11.1	56	20	11.0	55	1.8	18-140	26
Dibromochloromethane	20	16.0	80	20	17.2	86	7.2	45-137	15
1,1-Dichloroethane	20	18.7	93	20	18.8	94	1.1	66-138	19
1,2-Dichloroethane	20	18.9	95	20	19.0	95	0	48-152	23
1,1-Dichloroethene	20	18.2	91	20	18.1	90	1.1	47-175	25
cis-1,2-Dichloroethene	20	18.2	91	20	17.9	89	2.2	66-144	18
trans-1,2-Dichloroethene	20	18.8	94	20	18.9	95	1.1	62-146	22
1,2-Dichloropropane	20	18.9	94	20	18.4	92	2.2	61-133	17
cis-1,3-Dichloropropene	20	18.5	93	20	19.1	95	2.1	36-142	16
trans-1,3-Dichloropropene	20	17.8	89	20	18.1	90	1.1	34-138	21
Ethylbenzene	20	18.7	93	20	18.3	92	1.1	75-131	14
2-Hexanone	20	18.6	93	20	18.8	94	1.1	22-164	34
4-Methyl-2-pentanone (MIBK)	20	20.1	101	20	20.7	103	2	27-149	36

SECTION V
Calibration and QC Information
Control Sample Results

MS-VOA
SW8260B

	Control Sample continued			Control Sample Duplicate continued					
	Lab ID: 1029681 File ID: A1004103.D			Lab ID: 1029682 File ID: A1004104.D				QC Limits	
Parameter	Spk Amt	Conc	%Rec Flg	Spk Amt	Conc	%Rec Flg	RPD Flg	%Rec	RPD
Methylene chloride	20	17.5	87	20	17.9	90	3.4	36-166	23
Styrene	20	18.0	90	20	17.7	88	2.2	68-136	14
1,1,2,2-Tetrachloroethane	20	15.8	79	20	16.0	80	1.3	47-143	20
Tetrachloroethene	20	21.2	106	20	21.8	109	2.8	69-137	16
Toluene	20	18.6	93	20	18.1	91	2.2	70-132	17
1,1,1-Trichloroethane	20	18.6	93	20	18.8	94	1.1	49-155	24
1,1,2-Trichloroethane	20	16.5	83	20	16.6	83	0	67-135	17
Trichloroethene	20	19.7	98	20	19.2	96	2.1	71-129	17
Vinyl acetate	20	6.08	30	20	6.06	30	0	0.1-164	31
Vinyl chloride	20	13.7	68	20	13.3	66	3	24-138	27
p-Xylene/m-Xylene	40	37.4	94	40	36.6	91	3.2	76-134	15
o-Xylene	20	17.9	90	20	17.5	88	2.2	77-131	15

SECTION V
Calibration and QC Information
Control Sample Results

MS-VOA
SW8260B

	Lab ID: 1029681		Lab ID: 1029682		
Surrogate Compounds	%Recovery	Flags	%Recovery	Flags	QC Recovery Limits
1-Bromo-4-fluorobenzene	100		99		77-117
1,2-Dichloroethane-d4	99		104		61-143
Toluene-d8	102		104		87-113

SECTION VI
Batch Summaries

Extraction/Digestion Batch Summary
MS-VOA
SW8260B

Extraction Batch ID: 13711 Start Date/Time: 10/04/2001 14:46 Analyst: BJP
Stop Date/Time: 10/05/2001 22:53

Client Sample ID	Lab Sample ID	Sample Type	Matrix	Sample Size Initial	Sample Size Final	Preparation Method
INSTRUMENT QC	1000	GC/MS Tune	Aqueous	15 mL	15 mL	SW8260B
INSTRUMENT QC	1406	Continuing Calibration Check	Aqueous	15 mL	15 mL	SW8260B
LCS for HBN 13711 [MSV/1673]	1029681	Lab Control Sample	Aqueous	15 mL	15 mL	SW8260B
LCSD for HBN 13711 [MSV/1673]	1029682	Lab Control Sample Duplicate	Aqueous	15 mL	15 mL	SW8260B
MB for HBN 13711 [MSV/1673]	1029683	Method Blank	Aqueous	15 mL	15 mL	SW8260B
TB-1	2010911319	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-18B	2010911301	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-19B	2010911303	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-19D	2010911304	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-21B	2010911305	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-20B	2010911311	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-20D	2010911312	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-13B	2010911313	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-16B	2010911308	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-18D	2010911302	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-16D	2010911309	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-10B	2010911306	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-10D	2010911307	Field Sample	Aqueous	15 mL	15 mL	SW8260B
D-99	2010911310	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-23D	2010911317	Field Sample	Aqueous	15 mL	15 mL	SW8260B
D-100	2010911318	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-8D	2010911314	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-8B	2010911315	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-23B	2010911316	Field Sample	Aqueous	15 mL	15 mL	SW8260B
INSTRUMENT QC	1000	GC/MS Tune	Aqueous	15 mL	15 mL	SW8260B
INSTRUMENT QC	1406	Continuing Calibration Check	Aqueous	15 mL	15 mL	SW8260B
MW-21B	2010911305	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-19D	2010911304	Field Sample	Aqueous	15 mL	15 mL	SW8260B

SECTION VI
Batch Summaries

Extraction/Digestion Batch Summary
MS-VOA
SW8260B

Extraction Batch ID: 13711 continued

Client Sample ID	Lab Sample ID	Sample Type	Matrix	Sample Size Initial	Sample Size Final	Preparation Method
MW-16B	2010911308	Field Sample	Aqueous	15 mL	15 mL	SW8260B
D-99	2010911310	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-20B	1029844	Matrix Spike	Aqueous	15 mL	15 mL	SW8260B
MW-20B	1029845	Matrix Spike Duplicate	Aqueous	15 mL	15 mL	SW8260B
INSTRUMENT QC	1000	GC/MS Tune	Aqueous	15 mL	15 mL	SW8260B
INSTRUMENT QC	1406	Continuing Calibration Check	Aqueous	15 mL	15 mL	SW8260B
MW-10B	2010911306	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-10D	2010911307	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-8D	2010911314	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-8B	2010911315	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-18D	2010911302	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-16D	2010911309	Field Sample	Aqueous	15 mL	15 mL	SW8260B
D-99	2010911310	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-23B	2010911316	Field Sample	Aqueous	15 mL	15 mL	SW8260B
MW-23D	2010911317	Field Sample	Aqueous	15 mL	15 mL	SW8260B
D-100	2010911318	Field Sample	Aqueous	15 mL	15 mL	SW8260B

SECTION VI
Batch Summaries

Analysis Batch Summary
MS-VOA
SW8260B

Analysis Batch ID: 13711 Instrument ID: MSDA Analyst: BJP

Sequence	Client Sample ID	Lab Sample ID	Analysis Date	Analysis Time	Sample Type	Analysis File ID	Sub-Batch ID
1	INSTRUMENT QC	1000	10/04/2001	14:46:00	GC/MS Tune	A1004102.D	0
2	INSTRUMENT QC	1406	10/04/2001	14:46:00	Continuing Calibration Check	A1004102.D	0
3	LCS for HBN 13711 [MSV/1673]	1029681	10/04/2001	15:15:00	Lab Control Sample	A1004103.D	0
4	LCSD for HBN 13711 [MSV/1673]	1029682	10/04/2001	15:43:00	Lab Control Sample Duplicate	A1004104.D	0
5	MB for HBN 13711 [MSV/1673]	1029683	10/04/2001	16:43:00	Method Blank	A1004106.D	0
6	TB-1	2010911319	10/04/2001	17:22:00	Field Sample	A1004107.D	0
7	MW-18B	2010911301	10/04/2001	17:51:00	Field Sample	A1004108.D	0
8	MW-19B	2010911303	10/04/2001	18:19:00	Field Sample	A1004109.D	0
9	MW-19D	2010911304	10/04/2001	18:48:00	Field Sample	A1004110.D	0
10	MW-21B	2010911305	10/04/2001	19:18:00	Field Sample	A1004111.D	0
11	MW-20B	2010911311	10/04/2001	19:46:00	Field Sample	A1004112.D	0
12	MW-20D	2010911312	10/04/2001	20:15:00	Field Sample	A1004113.D	0
13	MW-13B	2010911313	10/04/2001	20:43:00	Field Sample	A1004114.D	0
14	MW-16B	2010911308	10/04/2001	21:12:00	Field Sample	A1004115.D	0
15	MW-18D	2010911302	10/04/2001	21:41:00	Field Sample	A1004116.D	0
16	MW-16D	2010911309	10/04/2001	22:09:00	Field Sample	A1004117.D	0
17	MW-10B	2010911306	10/04/2001	22:39:00	Field Sample	A1004118.D	0
18	MW-10D	2010911307	10/04/2001	23:10:00	Field Sample	A1004119.D	0
19	D-99	2010911310	10/04/2001	23:40:00	Field Sample	A1004120.D	0
20	MW-23D	2010911317	10/05/2001	00:10:00	Field Sample	A1004121.D	0
21	D-100	2010911318	10/05/2001	00:40:00	Field Sample	A1004122.D	0
22	MW-8D	2010911314	10/05/2001	01:09:00	Field Sample	A1004123.D	0
23	MW-8B	2010911315	10/05/2001	01:37:00	Field Sample	A1004124.D	0
24	MW-23B	2010911316	10/05/2001	02:06:00	Field Sample	A1004125.D	0
25	INSTRUMENT QC	1000	10/05/2001	03:31:00	GC/MS Tune	A1004128.D	0
26	INSTRUMENT QC	1406	10/05/2001	03:31:00	Continuing Calibration Check	A1004128.D	0
27	MW-21B	2010911305	10/05/2001	04:28:00	Field Sample	A1004130.D	0
28	MW-19D	2010911304	10/05/2001	04:57:00	Field Sample	A1004131.D	0
29	MW-16B	2010911308	10/05/2001	10:40:00	Field Sample	A1004132.D	0

SECTION VI
Batch Summaries

Analysis Batch Summary
MS-VOA
SW8260B

Analysis Batch ID: 13711 continued

Sequence	Client Sample ID	Lab Sample ID	Analysis Date	Analysis Time	Sample Type	Analysis File ID	Sub-Batch ID
30	D-99	2010911310	10/05/2001	11:09:00	Field Sample	A1004133.D	0
31	MW-20B	1029844	10/05/2001	11:37:00	Matrix Spike	A1004134.D	0
32	MW-20B	1029845	10/05/2001	12:06:00	Matrix Spike Duplicate	A1004135.D	0
33	INSTRUMENT QC	1000	10/05/2001	17:06:00	GC/MS Tune	A1004137.D	0
34	INSTRUMENT QC	1406	10/05/2001	17:06:00	Continuing Calibration Check	A1004137.D	0
35	MW-10B	2010911306	10/05/2001	18:31:00	Field Sample	A1004139.D	0
36	MW-10D	2010911307	10/05/2001	19:00:00	Field Sample	A1004140.D	0
37	MW-8D	2010911314	10/05/2001	19:30:00	Field Sample	A1004141.D	0
38	MW-8B	2010911315	10/05/2001	20:00:00	Field Sample	A1004142.D	0
39	MW-18D	2010911302	10/05/2001	20:28:00	Field Sample	A1004143.D	0
40	MW-16D	2010911309	10/05/2001	20:57:00	Field Sample	A1004144.D	0
41	D-99	2010911310	10/05/2001	21:25:00	Field Sample	A1004145.D	0
42	MW-23B	2010911316	10/05/2001	21:56:00	Field Sample	A1004146.D	0
43	MW-23D	2010911317	10/05/2001	22:24:00	Field Sample	A1004147.D	0
44	D-100	2010911318	10/05/2001	22:53:00	Field Sample	A1004148.D	0

SECTION VII
Certifications

State/Agency	ID #
Arkansas Department of Environmental Quality	
California Environmental Laboratory Accreditation Program / Waste Water/Hazardous Waste	2411
Connecticut Department of Health/Waste Water/Trade Waste, Sewage/Effluent, Soil	PH-0761
Florida Department of Environmental Protection, CompQAP	QA Plan #900481
Kansas Department of Health and Environment / Solid and Hazardous Waste	E-10165
Louisiana Department of Environmental Quality, ELAP / Waste Water/Hazardous Waste/Air Emissions	Interim Accreditation
Montana Department of Environmental Quality/Petroleum Release Section	
New Jersey Department of Environmental Protection	82005
New York State Department of Health /Waste Water/Hazardous Waste/Air	10915
North Carolina Dept. of Natural Resources & Community Development / Waste Water	302
Oklahoma Department of Environmental Quality/General Water Quality/Sludge	8720
Rhode Island Department of Health/Potable Water/Non-Potable and Waste Water	127
South Carolina Dept. of Health & Environmental Control	82003
Tennessee UST	
Texas(TNRCC)	Participating Laboratory
Texas Department of Public Safety/Precursor Chemical and Lab Apparatus	3039
Utah Department of Health / Solid and Hazardous Waste	RADC
Wisconsin Department of Natural Resources	999885260
US Air Force/AFCEE	Participating Laboratory
US Army Corps of Engineers (MRD,ACE)	Participating Laboratory
US Department of Agriculture / Restricted Soils Permit	S-42350
US Navy(NFESC)	Participating Laboratory

Quality Control Exception Report

STL Committed to Your Success

QCER #: 3860 | Analysis Date: 10/4/01 | File ID(s):
Status: Complete | Spec: 07
Queue: MSV | Instrument: MSDA | A1004135
Analyst: BJP | Matrix: W
HBN: 13711

Work Order	HSN	Client	CSC
20109113		ABBOTT	JAL

Analytical Problem Identification

MS/MSD Recovery

Analytical Probable Cause

Unknown

Analytical Corrective Action Taken

QCER written

Flagged data

Comments:
Several analytes in the MSD did not meet the recovery limits. The cause was unknown, but since the recoveries were acceptable in both the LCS and LCSD, the MSD data was flagged and this QCER was written as the required corrective actions.

[redacted]

Chain of Custody Record

SEVERN TRENT SERVICES

20109113 69527

Severn Trent Laboratories, Inc.

STL4149 (0700)

Client: URS / Radian
Project Manager: P. Gayle
Date: 9/25/01
Page 1 of 2
Address: 1600 Perimeter Park Dr
Telephone Number (Area Code)/Fax Number: (919) 461-1519 / -1415
Lab Location: Austin, TX
City: Morrisville | State: NC | Zip Code: 27560
Site Contact: Martha Myers-Lee
Project Number/Name: Abbott Labs Laurinburg, NC
Carrier/Waybill Number: Fedex
Contract/Purchase Order/Quote Number

Analysis: 8260B 8141 MS

Sample I.D. Number and Description	Date	Time	Sample Type	Containers Volume	Containers Type	Containers No.	Preservative	Condition on Receipt/Comments	8260B	8141 MS
MW-18b	9/25/01	1030	Water	40mL	vial	3	HCl/4°C		X	X
MW-18d		1050				3			X	X
MW-19b		1110				3			X	X
MW-19d		1105				3			X	X
MW-21b		1220				3			X	X
MW-10b		1235				3			X	X
MW-10d		1240				3			X	X
MW-16b		1255				3			X	X
MW-16d		1300				3			X	X
D-99		1300				3			X	X
MW-20b		1345				3			X	X
MW-20d		1345				3			X	X
MW-13b		1400				3			X	X
MW-8d		1420				3			X	X
MW-8b		1425				3			X	X
MW-23b		1505				3			X	X

Special Instructions

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: PW Ellis	9/25/01	1400	1. Received By: Fedex	9/25/01	1600
2. Relinquished By:			2. Received By: [signature]	9/26/01	0830
3. Relinquished By:			3. Received By:		

Comments
~~AES~~ 201-1192

Fedex # 822682 3800

Chain of Custody Record

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc

69526

STL4149 (0700)

Client: URS / Radian	Project Manager: P. Coyle	Date: 9/25/01	Page 2 of 2
Address: 1600 Perimeter Park Morrisville, NC	Telephone Number (Area Code)/Fax Number: 919-461-1519 / 919-461-1415	Lab Location: Austin, TX	Analysis
City / State / Zip Code: 27560	Site Contact: Martha Meyers-Lee		
Project Number/Name: Abbott Labs, Laurinburg, NC	Carrier/Waybill Number: Fedex # 822682 3800 822219259274		
Contract/Purchase Order/Quote Number			

Sample I.D. Number and Description	Date	Time	Sample Type	Containers Volume	Containers Type	Containers No.	Preservative	Condition on Receipt/Comments	SW 846 8260
MW-23d	9/24/01	1520	H_2O	40mL	Vial	3	HCL/4C		X
D-100	↓	1520	↓			3	HCL/4C		X
TB-1	↓	1600	↓	↓	↓	2	HCL/4C		X

Special Instructions: Attn: Jane Lindsey

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]	9/25/01	1400	1. Received By: Fedex @ Abbott	9/25/01	~1600
2. Relinquished By			2. Received By: [signature]	9/26/01	0830
3. Relinquished By			3. Received By		

Comments: ADD# 201-1192

1000 **FedEx. USA Airbill** Express — FedEx Tracking Number 8292 1925 9274

RECIPIENT: PEEL HERE

1 From This portion can be removed for Recipient's records

Date 9-25-01 FedEx Tracking Number 829219259274

Sender's Name Rhoda Willis Phone 919 461-1100

Company URS Corp.

Address 1600 Perimeter Park Drive Ste 100 Dept./Floor/Suite/Room

City Morrisville State NC ZIP 27560

2 Your Internal Billing Reference

3 To Recipient's Name Jane Lindsey Phone 512 310-5282

Company SEVERN TRENT LABS

Address 14046 SUMMIT DR BLDG B

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

City AUSTIN State TX ZIP 78728

8292 1925 9274

0187099932

EDAR 02155 Recipient's Copy

4a Express Package Service — Packages up to 150 lbs.

☒ FedEx Priority Overnight ☐ FedEx Standard Overnight ☐ FedEx First Overnight

☐ FedEx 2Day ☐ FedEx Express Saver ☐ NEW FedEx Extra Hours

4b Express Freight Service — Packages over 150 lbs.

☐ FedEx 1Day Freight* ☐ FedEx 2Day Freight ☐ FedEx 3Day Freight

5 Packaging

☐ FedEx Envelope* ☐ FedEx Pak* ☒ Other Pkg.

6 Special Handling

☐ SATURDAY Delivery ☐ SUNDAY Delivery ☐ HOLD Weekday at FedEx Location ☐ HOLD Saturday at FedEx Location

Does this shipment contain dangerous goods? ☒ No ☐ Yes ☐ Dry Ice ☐ Cargo Aircraft Only

7 Payment Bill to: ☐ Sender ☒ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

Total Packages 1 Total Weight 35 Total Charges

8 Release Signature

406

Questions? Visit our Web site at fedex.com or call 1-800-Go-FedEx

SEVERN TRENT SERVICES

WO#: 20109113

CHAIN–OF–CUSTODY ADDENDUM

1192

RECEIVED BY: Eric H

ADD NUMBER: 201-

DATE/TIME RECEIVED: 9/26/01 0830

PROFILE: 1811 ITEM: 1

UNPACKED DATE/TIME: 9/26/01 1040

CLIENT/PROJECT: ABBOTT

SAMPLES LOGGED IN: EH

LOG-IN REVISED: EH

Number of Shipping Containers Received with Chain of Custody 1

VOC SAMPLES SEE SECTION 1.0, 2.0 & 6.0 ☐ YES

1.0 CONTAINERS EXAMINED UPON RECEIPT: EH

Container Sealed: ☑ YES ☐ NO

Custody Seal Present: ☑ YES ☐ NO Custody Seal Signed/Dated: ☑ YES ☐ NO

If seal not intact, list air bill number of that container(s):

2.0 VOC CANISTERS EXAMINED UPON RECEIPT:

Canister Valves Closed: ☐ YES ☐ NO Samples Received Match Chain: ☐ YES ☐ NO

nister Valves Capped: ☐ YES ☐ NO See Additional Comments: ☐ YES ☐ NO

Packing Material Used: Can Size: ☐ 6L ☐ 15L Other

3.0 SAMPLE TEMPERATURE UPON RECEIPT: EH **PYROMETER#:** P-5

The temperature of the container(s) is: *(acceptable tolerance 1-4°C)*

2.5°C										

If temperature is outside acceptable tolerance, Project Manager was notified (_____PM). Date: Time:

Samples received do not require cooling OK to analyze samples: ☑ YES ☐ NO

PRESERVATION OF SAMPLES REQUIRED: ☑ NA ☐ YES **VERIFIED BY:** EH

Base samples are>pH 12: ☐ YES ☐ NO Acid preserved are<pH 2: ☐ YES ☐ NO

Cyanide samples checked for sulfides: ☐ YES Sulfide samples appear to be preserved with zinc acetate: ☐ YES ☐ NO

Samples checked for chlorine per specification: ☐ YES Free chlorine present: ☐ YES ☐ NO

If sample preservation/temperature (°C) is outside acceptable tolerance, Project Manager was notified (_____PM)
Date: Time: ☐ see pH adjustment form

VOLATILE SAMPLES FILLED COMPLETELY, IF NOT, LIST ID AND HEADSPACE OF VOA'S CONTAINING BUBBLES EXCEEDING 6MM IN DIAMETER:

Sample ID	mm Headspace	Sample ID	mm Headspace

evised 12/8/2000

4.0 CONDITION OF BOTTLES/CONTAINERS **VERIFIED BY:** EH

Samples received match COC: ☑ YES ☐ NO Bottles received intact: ☑ YES ☐ NO

dditional discrepancies/comments section: ☐ YES ☑ NO Samples received from USDA restricted area: ☐ YES ☑ NO

VOA trip blanks included: ☑ YES ☐ NO ☐ N/A 2 VOB

5.0 ADDITIONAL DISCREPANCIES

Appears on COC		Appears on Label		
Sample ID	Date/Time	Sample ID	Date/Time	Comments

HIPPING DOCUMENTATION

Air/freight bill is available and attached to COC: ☑ YES ☐ NO Air bill #:

Hand-delivered Carrier: Date: Time:

7.0 OTHER COMMENTS:

Client COC is signed, dated with time of receipt, and addendum number is noted in the comments section. ☑ YES

CORRECTIVE ACTION:

Client's Name: Informed verbally on: By:

Client's Name: Informed verbally on: By:

Sample(s) processed "as is" comments:

Samples(s) on hold until: If released, notify:

REVIEW:

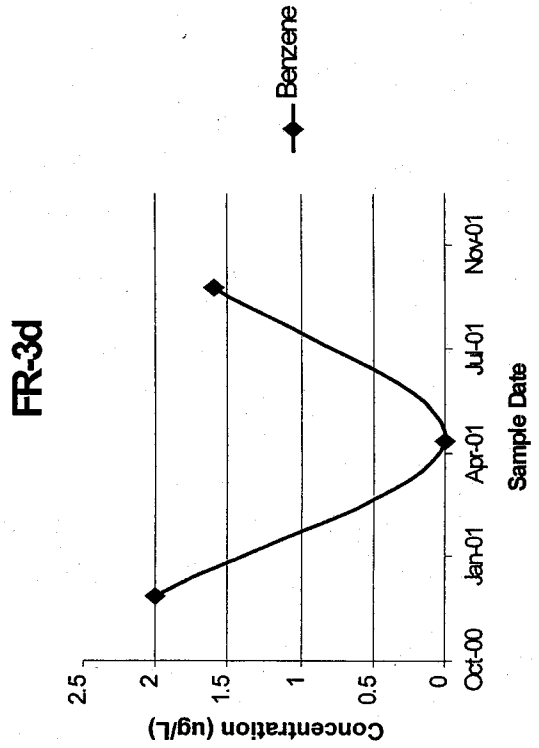
ect Management: Date: 9-26-01

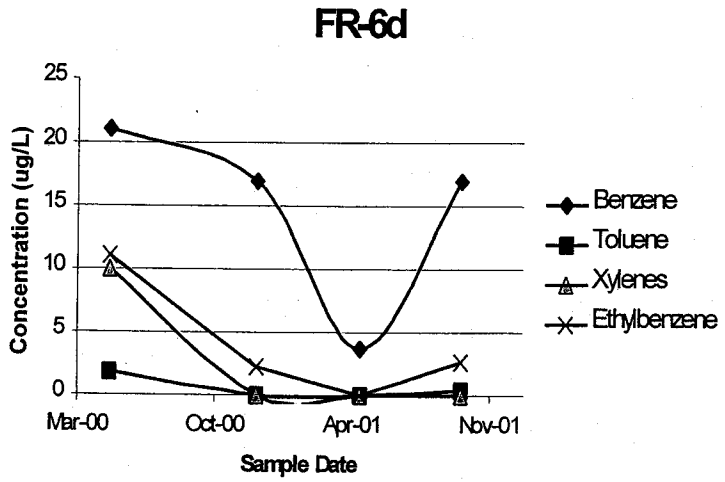
SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

evised 12/8//2000

APPENDIX B

CONTAMINANT CONCENTRATIONS VERSUS TIME




FR-6d
25
20
15
10
5
0
Concentration (ug/L)
Mar-00
Oct-00
Apr-01
Nov-01
Sample Date
Benzene
Toluene
Xylenes
Ethylbenzene