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COPY

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



June 2002



**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**



June 26, 2002

Mr. Curt Michols
Corporate Environmental Services
Abbott Laboratories
Dept 539, Bldg. AP52
200 Abbott Park Road
Abbott Park, IL 60064

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

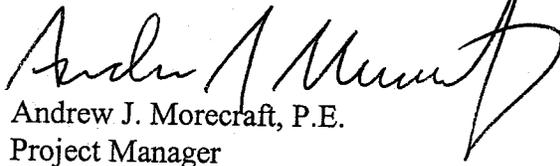
Dear Curt:

Enclosed is one copy of the final Semi-Annual Groundwater Monitoring Report, Petroleum Release, for the Abbott Laboratories facility located in Laurinburg, North Carolina. The final report incorporates your comments that we received on June 24, 2002.

Please feel free to call me at (919) 461-1420 or Shannon Clunn at (919) 461-1385 with any comments or questions.

Sincerely,

URS CORPORATION - NORTH CAROLINA


Andrew J. Morecraft, P.E.
Project Manager

Enclosure

**SEMI-ANNUAL GROUNDWATER MONITORING REPORT
PETROLEUM RELEASE**

**Abbott Laboratories
Laurinburg, North Carolina**

Groundwater Incident No. 21511

Prepared for:

**Abbott Laboratories
Corporate Environmental Services
Dept. 539, Bldg. AP52-S
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June 2002

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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 the Standard Industrial Classification (SIC) Code 3841 since 1970.

On January 30, 2000, No. 2 fuel oil was discovered leaking into a concrete-lined storm water drainage channel along the southeastern portion of the Abbott facility. An inventory of the fuel source suggests that approximately 1,500 gallons of fuel was released to the subsurface, through an abandoned distribution line from an aboveground storage tank, into a former underground storage tank (UST) pit. The release occurred 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 containment and clean up and subsequent subsurface investigation have been performed, including a preliminary site characterization and a Phase II Site Characterization. Results of the investigations indicated that soil underlying limited areas of the site exceeded the North Carolina Department of Environment and Natural Resources (DENR) soil action level for total petroleum hydrocarbons (TPH) diesel range organics (DRO) and that groundwater within the underlying sand unit exceeded the applicable 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 Site Characterization 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; however, only benzene was detected at concentrations above the DENR groundwater standard.

Abbott has continued to monitor groundwater at the facility, with semi-annual groundwater monitoring beginning in 2001. This report documents the semi-annual monitoring

that was conducted in March 2002. The fuel release monitoring well network is comprised of fourteen wells consisting of 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 during the semi-annual sampling, because they are unimpacted wells located upgradient and cross-gradient of the plume, respectively. However, FR-2 and -4 are used for water level measurement during each sampling event. 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) conducted semi-annual monitoring at the Abbott facility in March 2002. The monitoring 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 this event.

FIELD METHODS

Groundwater was sampled March 14, 2002 in general accordance with the methods outlined in the *Groundwater Sampling Plan* (Radian Engineering, May 2001) for this site.

Eleven monitoring wells were sampled. These wells consisted of FR-1, -3, -3d, -5, -6d, -7d, -8d, -9d, MW-10b, -10d, and -20b. FR-6 is also 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, duplicate samples were collected at wells FR-3d and FR-6d; and a trip blank accompanied the sample shipment to the analytical laboratory.

Groundwater samples from wells FR-1, -3, -3d, -5, -6d, -7d, -8d, -9d, MW-10b, MW-10d, and MW-20b 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.

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 through 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 March 2002 event are summarized in Table 3-14. Benzene and total xylenes were the only analytes 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 respective groundwater standards. Benzene was detected at concentrations of 2.4 and 4.2 $\mu\text{g/L}$ 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.

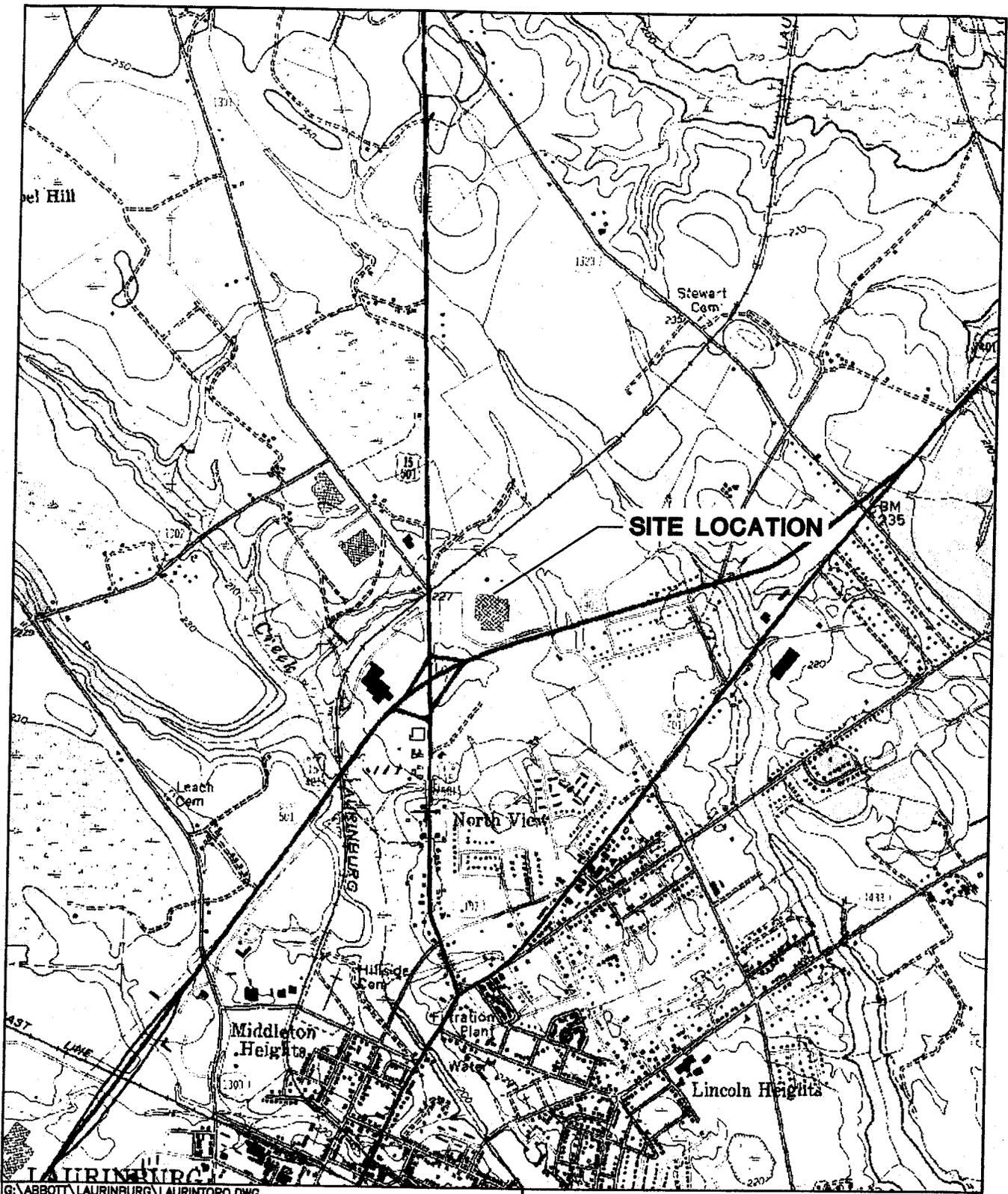
Historical analytical results for the wells with BTEX detected in groundwater samples are presented in Tables 3-15 through 3-18. Graphs depicting the analyte concentrations detected in FR-3d and FR-6d versus time are presented in Appendix B. A comparison of the

analytical record for wells at the perimeter of the plume suggests that the plume remains on-site, at least 1,200 feet from off-site 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 March 2002 semi-annual sampling event due to the historical presence of free product.

FR-6 has been dry and no free product has been detected in the well since the last September 2002 sampling event. Since no product has been detected in the well on a regular basis, monitoring for free product will be reduced to a monthly cycle. In the event that free product is detected, URS will manually remove the free product using a bailer or will contact a company to conduct an Aggressive Fluid Vapor Recovery (AFVR) event. All free product removed from the well will be properly disposed of.



G:\ABBOTT\LAURINBURG\LAURINTOPO.DWG



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

VICINITY MAP

**ABBOTT LABORATORIES
LAURINBURG, NORTH CAROLINA**

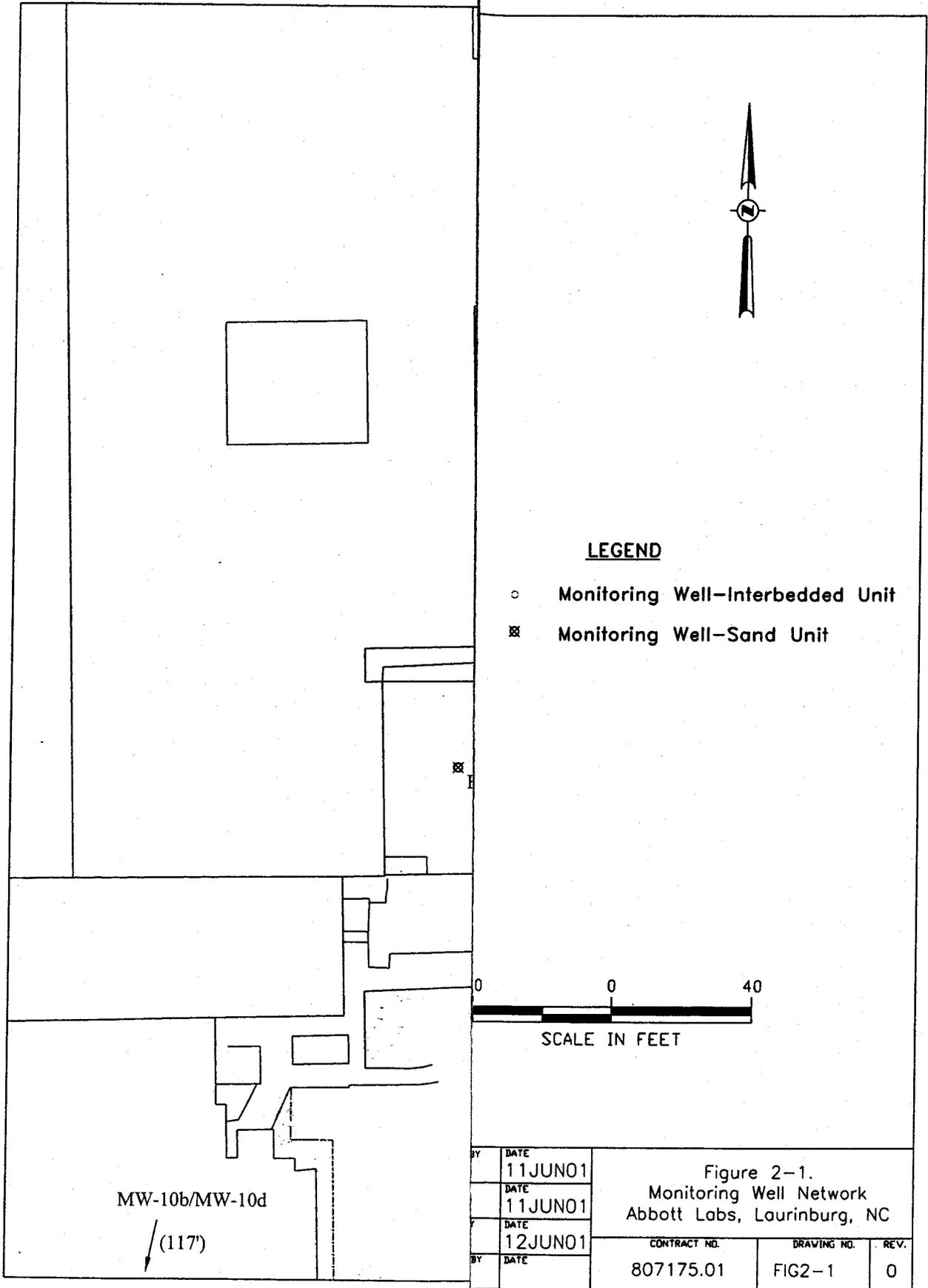
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Abbott Laboratories

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DATE: 6/14/01
PROJECT NO.



RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709

Fig.
1-1



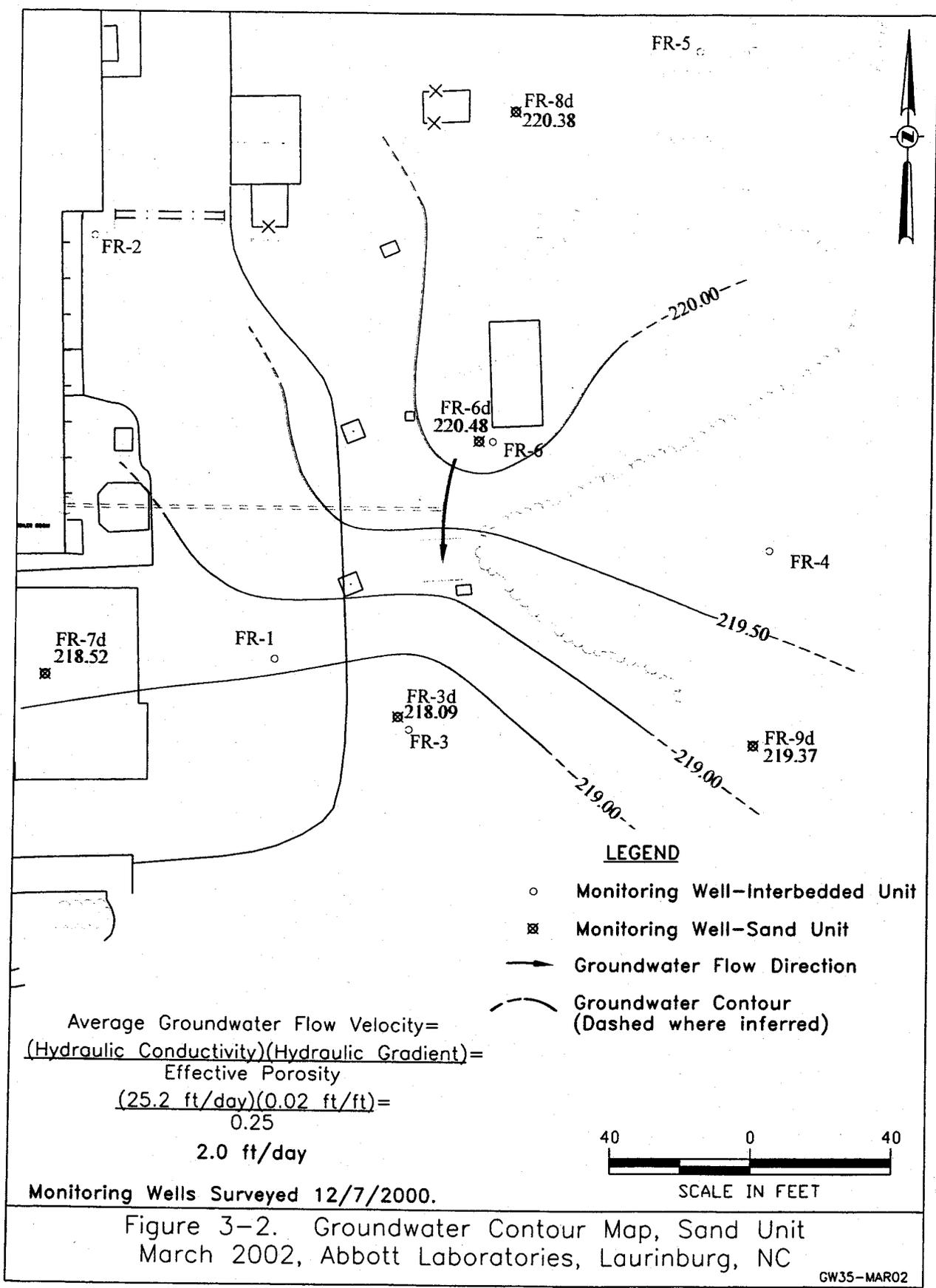
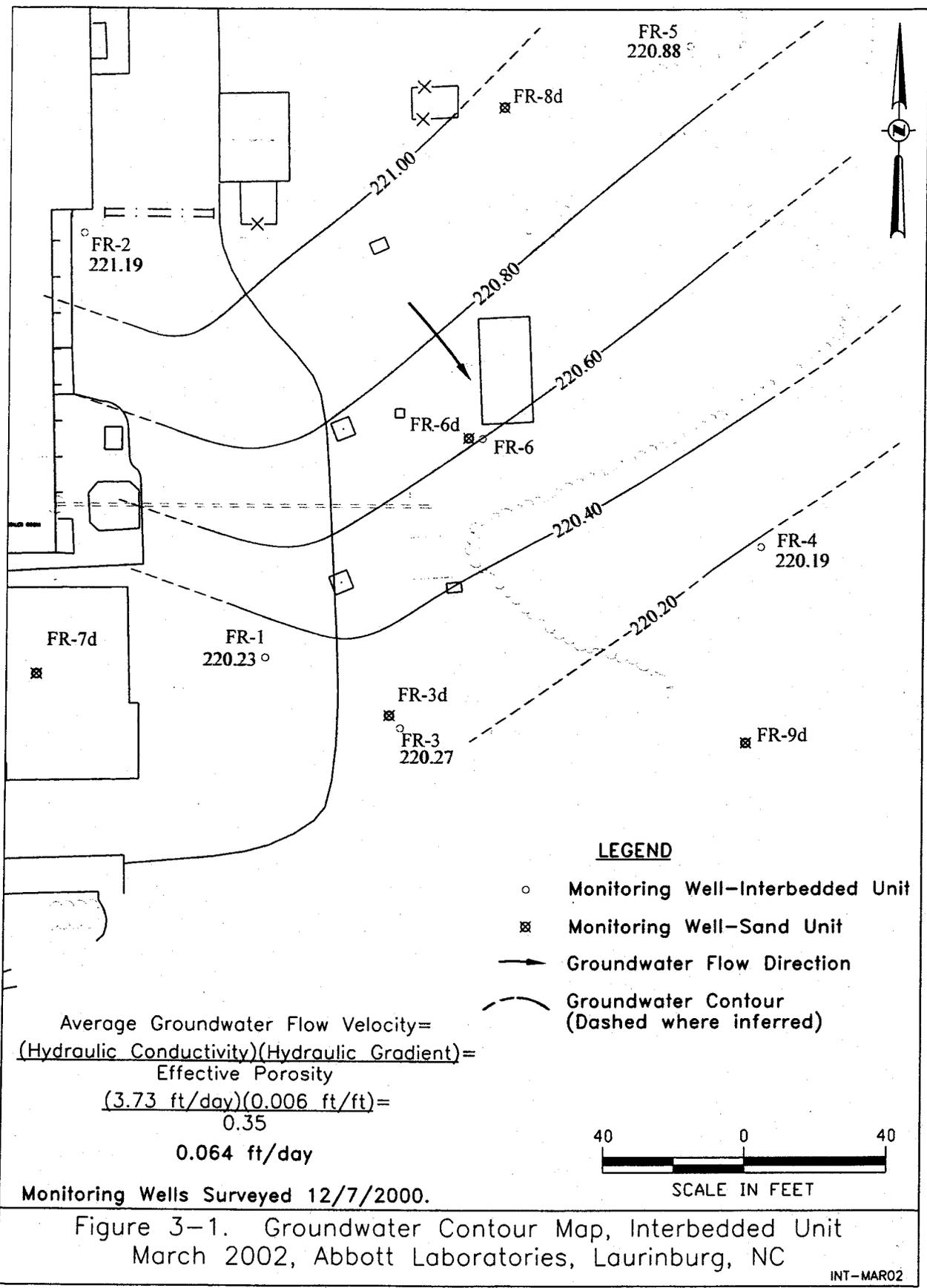
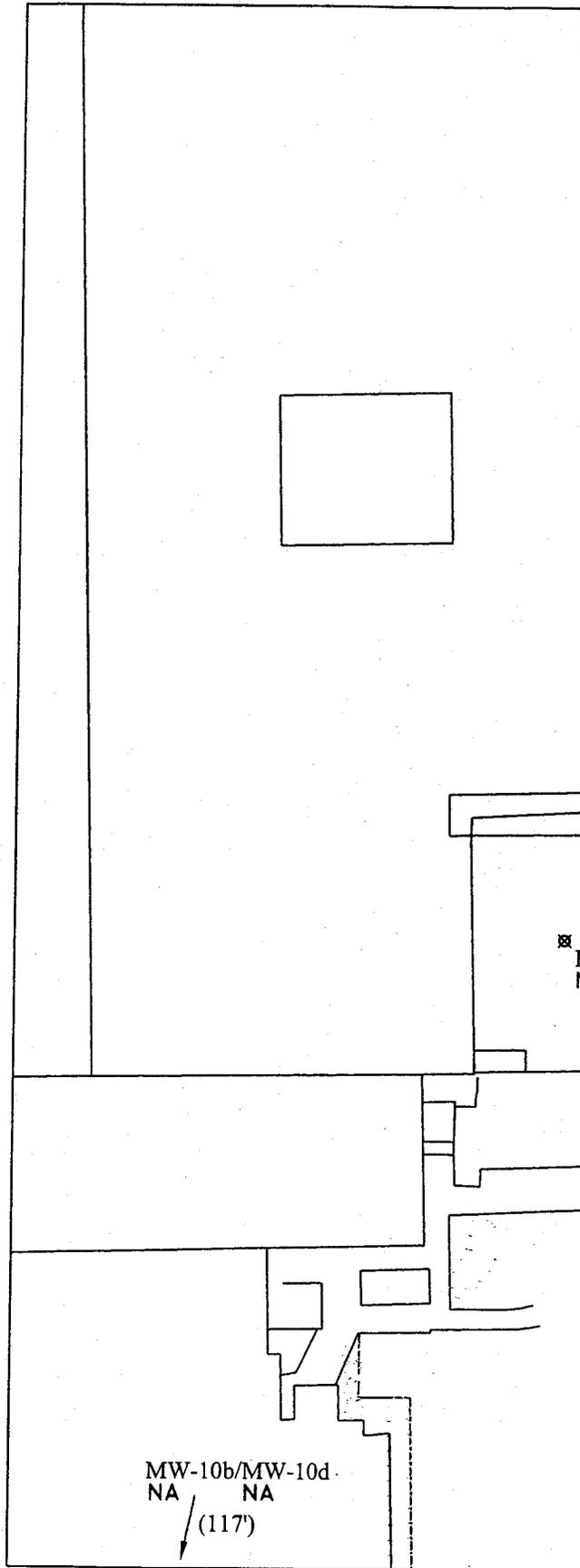


Figure 3-2. Groundwater Contour Map, Sand Unit
 March 2002, Abbott Laboratories, Laurinburg, NC





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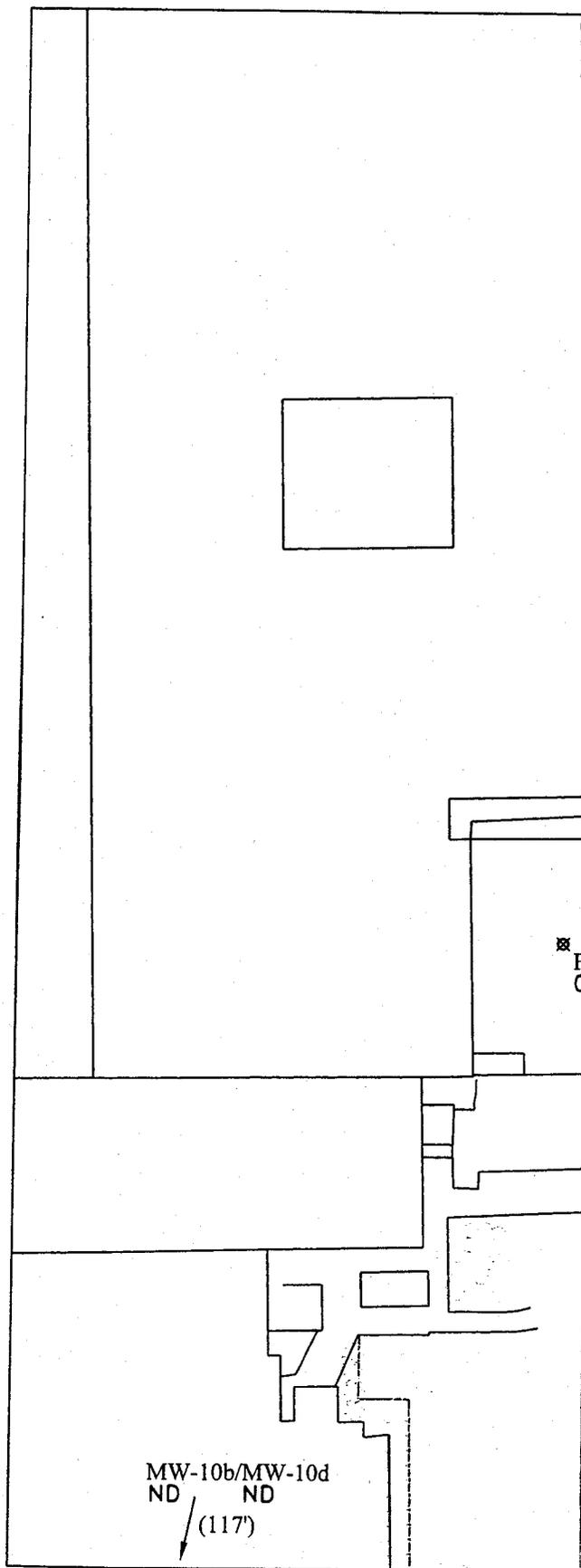
- Monitoring Well—Interbedded Unit
- ⊗ Monitoring Well—Sand Unit
- ND Analyte not Detected above Method Detection Limit
- NS Not Sampled
- NA Not Applicable due to Screened Interval
- FP Free Product Measured in Well

**NCDENR Groundwater Standard:
Benzene = 1 ug/L**

**NOTES:
Results shown in ug/L.
Inferred boundary of
Benzene Plume at 1 ug/L.**

MW-10b/MW-10d
NA NA
/ (117)

BY	DATE	Figure 3-3. Approximate Distribution of Benzene Interbedded Unit, March 2002 Abbott Labs, Laurinburg, NC		
	15APR02			
	DATE			
	16APR02			
	DATE			
	16APR02			
	DATE	CONTRACT NO.	DRAWING NO.	REV.
		808808.01	3-3MAR02	0



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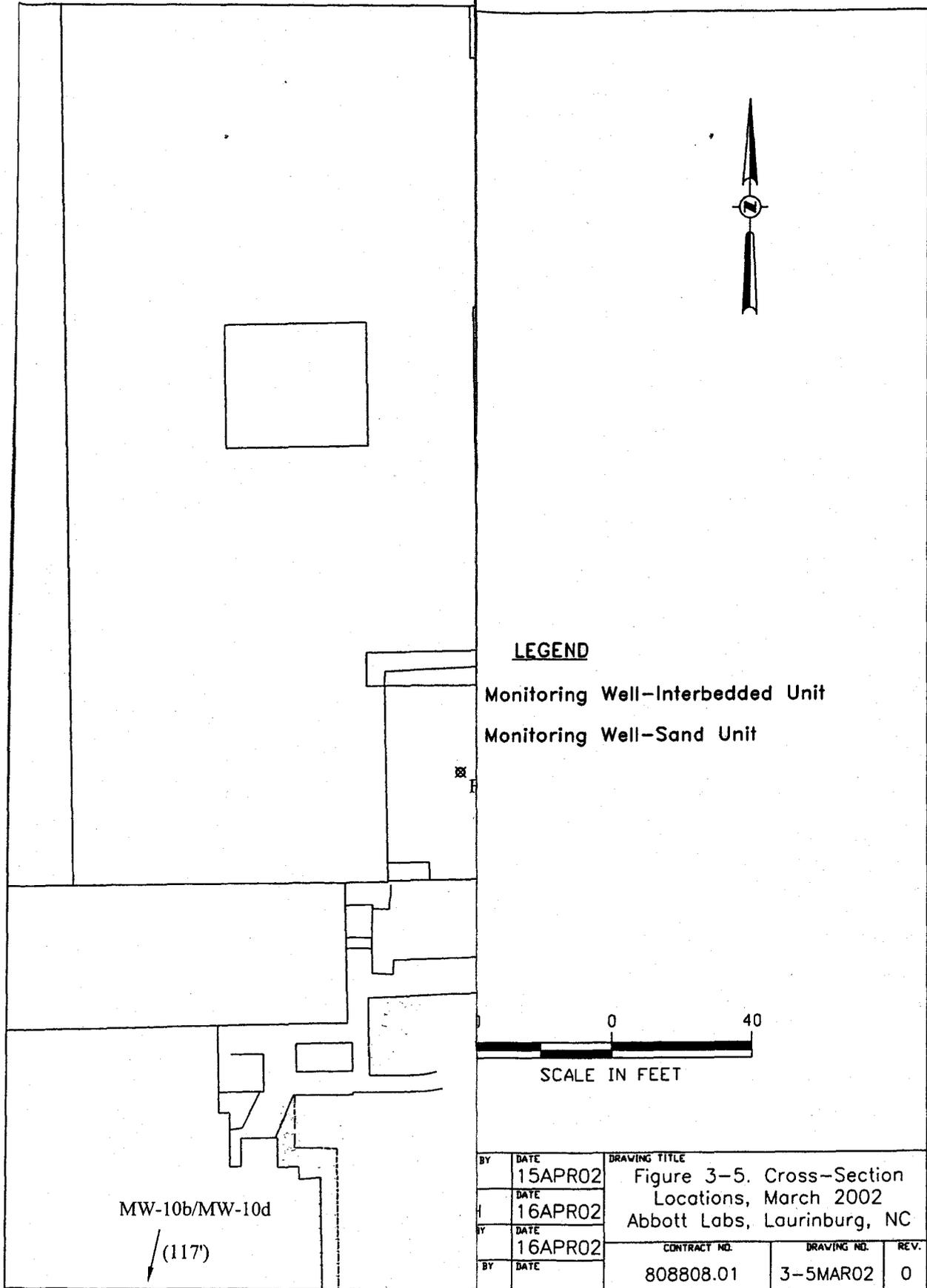
- Monitoring Well—Interbedded Unit
- ⊗ Monitoring Well—Sand Unit
- ND Analyte not Detected above Method Detection Limit
- NS Not Sampled
- NA Not Applicable due to Screened Interval

NCDENR Groundwater Standard:
Benzene = 1 ug/L

NOTES:
Results shown in ug/L.
Inferred boundary of
Benzene Plume at 1 ug/L.

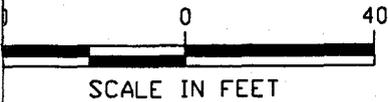
MW-10b/MW-10d
ND ND
/ (117)

BY	DATE	Figure 3-4. Approximate Distribution of Benzene Sand Unit, March 2002 Abbott Labs, Laurinburg, NC	CONTRACT NO.	DRAWING NO.	REV.
	15APR02				
	16APR02				
BY	DATE	808808.01	3-4MAR02	0	



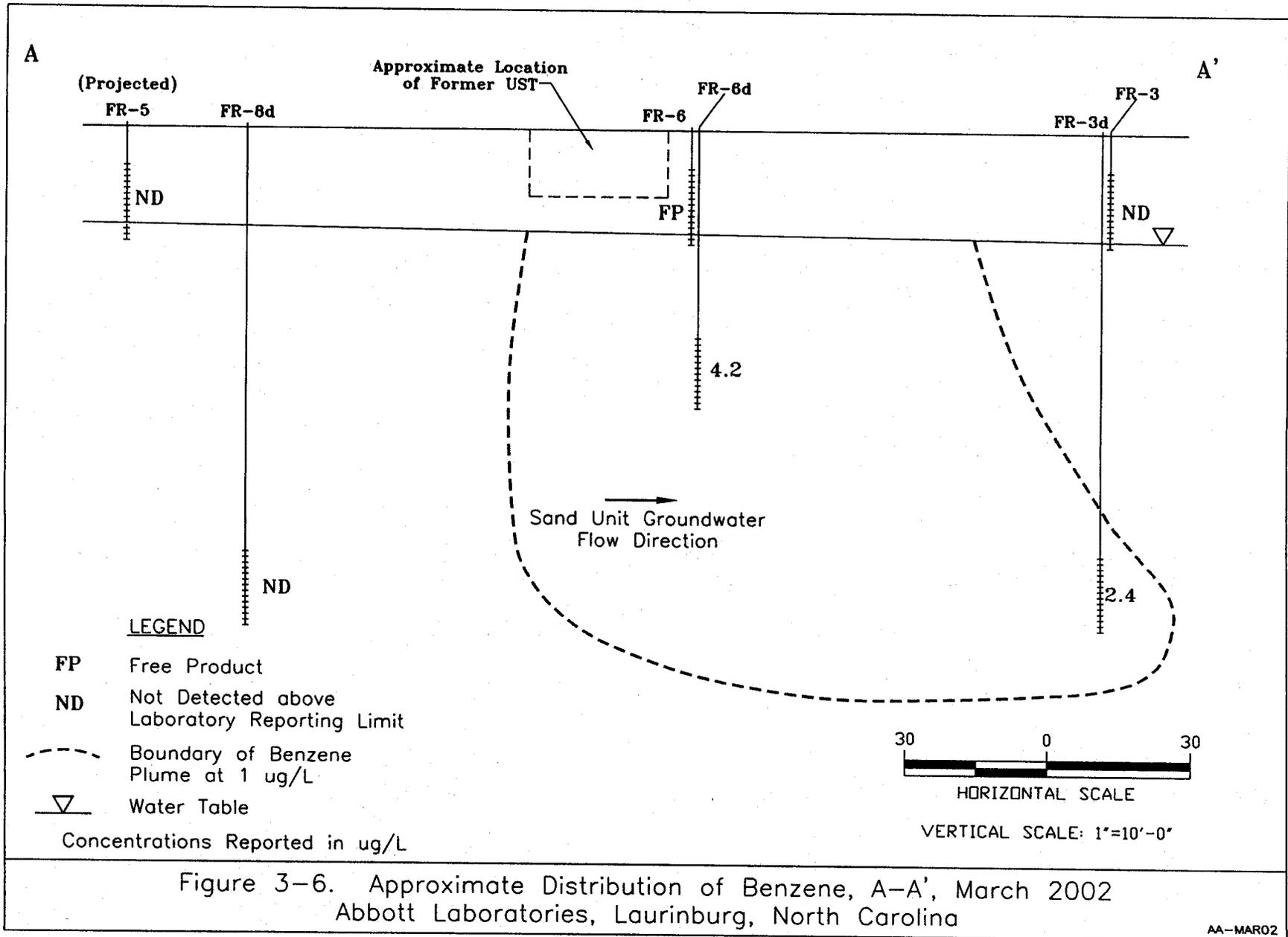
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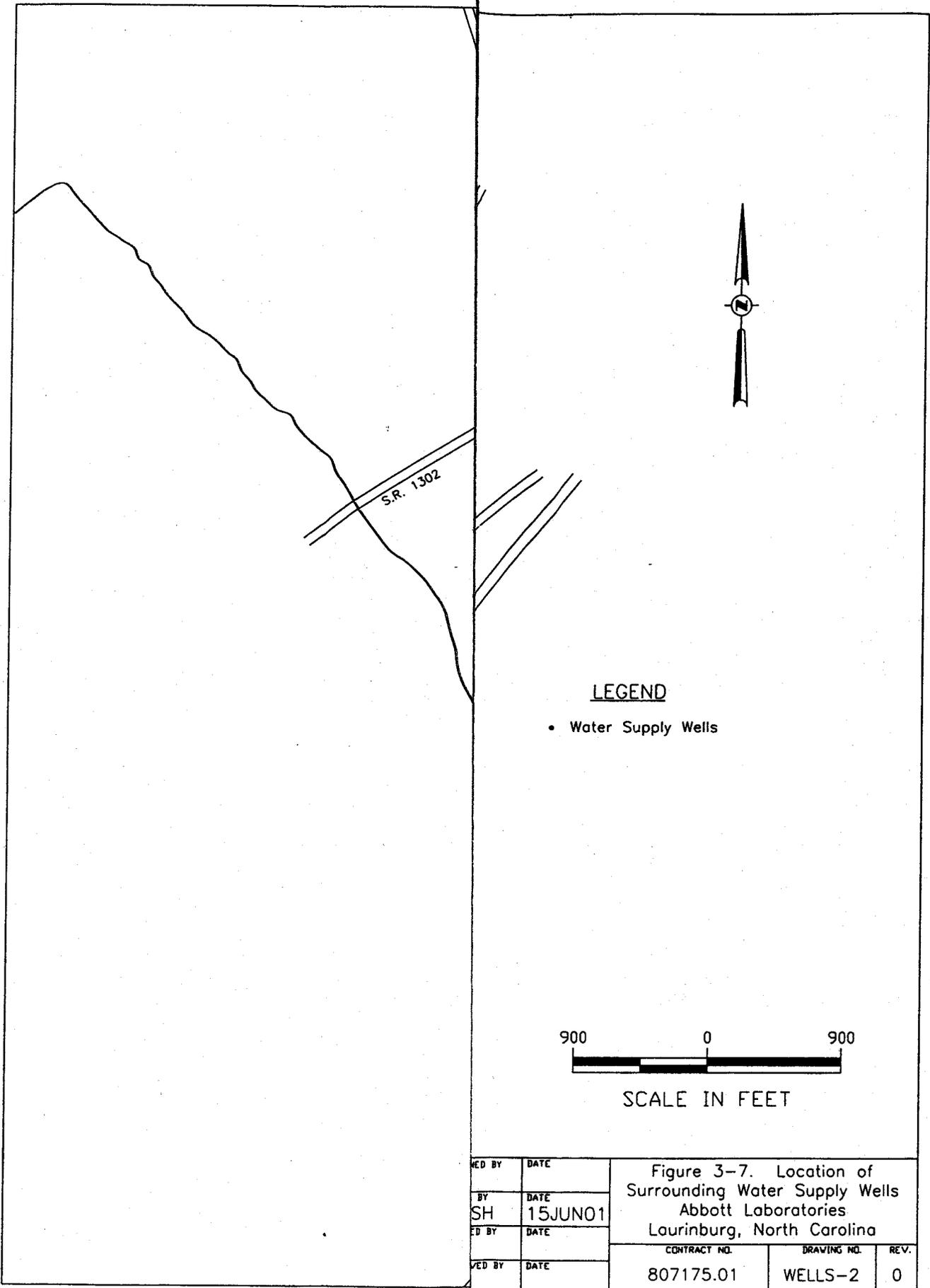
- Monitoring Well-Interbedded Unit
- Monitoring Well-Sand Unit



MW-10b/MW-10d
 ↓ (117)

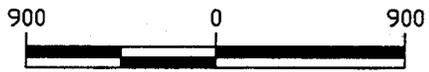
BY	DATE	DRAWING TITLE		
	15APR02	Figure 3-5. Cross-Section Locations, March 2002 Abbott Labs, Laurinburg, NC		
H	DATE			
	16APR02			
BY	DATE	CONTRACT NO.	DRAWING NO.	REV.
	16APR02	808808.01	3-5MAR02	0
BY	DATE			





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- Water Supply Wells



SCALE IN FEET

ED BY	DATE	Figure 3-7. Location of Surrounding Water Supply Wells Abbott Laboratories Laurinburg, North Carolina		
BY	DATE			
ED BY	DATE			
ED BY	DATE	CONTRACT NO.	DRAWING NO.	REV.
		807175.01	WELLS-2	0

Table 2-1

**Monitoring Well Construction Data for Sampled Wells, March 2002
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, March 2002
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	6.79	220.23
FR-2	227.01	5.82	221.19
FR-3	230.17	9.90	220.27
FR-3d	229.67	11.58	218.09
FR-4	230.51	10.32	220.19
FR-5	230.69	9.81	220.88
FR-6d	230.62	10.14	220.48
FR-7d	226.45	7.93	218.52
FR-8d	230.82	10.44	220.38
FR-9d	230.81	11.44	219.37
MW-10b	229.06	8.71	220.35
MW-10d	228.65	11.77	216.88
MW-20b	227.94	5.35	222.59

msl = mean sea level

TOC = top of casing

FR-2 and FR-4 were not included in the March 2002 sampling event

Water elevations from MW-10b, -10d, and -20b were not used to develop the contour map.

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
March 14, 2002	220.23

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
March 14, 2002	220.27

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
March 14, 2002	218.09

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
March 14, 2002	220.88

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
March 14, 2002	220.48

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
March 14, 2002	218.52

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
March 14, 2002	220.38

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
March 14, 2002	219.37

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
March 14, 2002	220.35

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
March 14, 2002	216.88

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
March 14, 2002	222.59

msl = mean sea level

Table 3-13

Field Measurements, March 2002
Abbott Laboratories, Laurinburg, North Carolina

Well	Date	Time	Volume Purged (gal)	Purging Criteria	Temperature (°C)	Specific Conductance (µS/cm)	pH
FR-1	3/14/02	1030	0.2	Purged dry	18.0	40	4.42
FR-3	3/14/02	0955	0.1	Purged dry	16.5	32	5.09
FR-3d	3/14/02	0950	0.5	See Note	18.0	35	3.99
FR-5	3/14/02	1040	0.1	Purged dry	16.0	40	4.56
FR-6d	3/14/02	1002	4.5	3 well volumes	17.0	50	4.88
FR-7d	3/14/02	1042	2.0	3 well volumes	18.2	40	4.07
FR-8d	3/14/02	1110	2.0	3 well volumes	18.0	110	5.32
FR-9d	3/14/02	1015	1.5	Purged dry	17.0	45	4.56
MW-10b	3/14/02	0914	5.0	Stabilized parameters	19.0	50	4.10
MW-10d	3/14/02	0933	5.0	Stabilized parameters	20.0	55	4.08
MW-20b	3/14/02	0848	6.0	Stabilized parameters	17.0	50	3.83

C = Celsius

gal = Gallon

µS/cm = Microsiemens per centimeter

Note: due to miscalculation in field only one well volume was removed.

Table 3-14

Summary of Qualified Groundwater Analytical Results, March 2002
 BTEX by EPA Method 602
 Abbott Laboratories, Laurinburg, North Carolina

Analyte	Standard	FR-1	FR-3	FR-3d	FR-3d (Dup)	FR-5	FR-6d	FR-6d (Dup)
		3/14/02	3/14/02	3/14/02	3/14/02	3/14/02	3/14/02	3/14/02
Benzene	1	ND (1)	ND (1)	2.4	2.5	ND (1)	4.2	4
Ethylbenzene	29	ND (1) U	ND (1) U	ND (1) U	ND (1) U	ND (1) U	ND (1) U	ND (1) U
Toluene	1000	ND (1)	ND (1)	ND (1)	0.44 J	ND (1)	ND (1)	ND (1)
Total xylenes	530	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)

All results and standards presented in µg/L

ND () =Not detected at specified sample quantitation limit

J = Estimated value

U = Analyte was detected at levels below the reported sample quantitation limit; blank contamination exists.

Dup = Duplicate sample

Bold values exceed standards.

Analyte	Standard	FR-7d	FR-8d	FR-9d	MW-10b	MW-10d	MW-20b
		3/14/02	3/14/02	3/14/02	3/14/02	3/14/02	3/14/02
Benzene	1	0.40 J	ND (1)				
Ethylbenzene	29	ND (1) U					
Toluene	1000	ND (1)					
Total xylenes	530	ND (2)					

All results and standards presented in µg/L

ND () =Not detected at specified sample quantitation limit

J = Estimated value

U = Analyte was detected at levels below the reported sample quantitation limit; blank contamination exists.

Table 3-15

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

Analyte	Groundwater Standard	December 2000	May 2001	September 2001	March 2002
Benzene	1 µg/L	2	ND (1)	1.6	2.4

Target analytes not listed were not detected

Bold values exceed standards

ND () =Not detected at specified sample quantitation 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	March 2002
Benzene	1 µg/L	21	17	3.7	17	4.2
Toluene	1000 µg/L	1.9	ND (1)	ND (1)	0.43 J	ND (1)
Ethylbenzene	29 µg/L	11	2.2	ND (1)	2.6	ND (1) U
Total xylenes	530 µg/L	10	ND (2)	ND (2)	ND (2)	ND (2)

Target analytes not listed were not detected

Bold values exceed standards

ND () =Not detected at specified sample quantitation limit

J = Estimated value

U = Analyte was detected at levels below the reported sample quantitation limit; blank contamination exists.

Table 3-17

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

Analyte	Groundwater Standard	May 2001	September 2001	March 2002
Benzene	1 µg/L	0.36 J	0.42 J	0.40 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	March 2002
Benzene	1 µg/L	ND (1)	0.0507 J	ND (1)

Target analytes not listed were not detected

ND () =Not detected at specified sample quantitation 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)
9/24/01	0.03	7.32
10/31/01	0	—
11/9/01	0	—
11/16/01	0	—
11/30/01	0	—
12/7/01	0	—
12/17/01	0	—
12/21/01	0	—
12/31/01	0	—
1/7/02	0	—
1/15/02	0	—
1/22/02	0	—
1/31/02	0	—
2/9/02	0	—
2/14/02	0	—
2/22/02	0	—
2/28/02	0	—
3/7/02	0	—
3/14/02	0	—
3/22/02	0	—
3/31/02	0	—

NA = Information not available
— = No product measured

APPENDIX A
GROUNDWATER SAMPLING ANALYTICAL REPORTS

QUALIFIED ANALYTICAL DATA

**Abbott Laboratories, Laurinburg, NC
March 2002 Fuel Release Program Sampling Event
Data Evaluation Report
URS Corporation, May 2002**

Introduction

On March 14, 2002, URS Corporation collected thirteen groundwater samples (FR-1, FR-3, FR-3d, FR-5, FR-6d, FR-7d, FR-8d, FR-9d, MW-10b, MW-10d, MW-20b, Blind Duplicate 1, and Blind Duplicate 2), including two field duplicates, 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 each shipment of samples for a volatile organic analysis (VOA). The results were reported by STL under Sample Delivery Group Number URSA02.

URS reviewed the data to determine if data quality objectives were met. 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). 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 and field 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 are considered usable for the project objectives and have been appropriately qualified based on criteria of the data review process. The results of the data review 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 March 18 and continuing calibrations of March 20 and 21 on instrument TVGQPID2.

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.

Ethylbenzene was detected at concentrations ranging from 0.33 to 0.35 micrograms per liter ($\mu\text{g/L}$) in the method blanks. Similar concentrations (0.39-0.43 $\mu\text{g/L}$) of ethylbenzene were also detected in the trip blanks. There were no other volatile organic compounds detected in the blanks. Sample results that were not significantly greater (five times) than that detected in the blanks have been qualified due to the presence of blank contamination. All ethylbenzene sample results, which were detected at concentrations below the laboratory quantitation limit, were removed and replaced with the laboratory quantitation limit qualified with a "U". These results are usable as non-detects at the reported quantitation limit.

Internal Standards

Internal standards are analytes of interest that are added to each sample prior to the organic analyses to ensure that gas chromatography (GC) sensitivity and responses remain stable.

Internal standard QC criteria were met during all sample analyses.

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.

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 met during the MS and MS duplicate analysis of sample FR-1 for benzene and toluene.

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-3d and Blind Duplicate 1, and FR-6d and Blind Duplicate 2.

Sample Results

Sample results were provided for all volatile organic analytes required by the contract. Method detection limits were less than the reporting limits required by the contract. All required documentation required by the project was included in the data package.

The laboratory flagged analytical results that were less than the practical quantitation limit, but greater than the method detection limit with J. These results are considered estimates.

LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 185020410

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
01087-1	FR-1	03-14-02/10:30	URSA02
01087-2	FR-3	03-14-02/10:55	URSA02
01087-3	FR-3d	03-14-02/09:53	URSA02
01087-4	FR-5	03-14-02/11:10	URSA02
01087-5	FR-6d	03-14-02/10:05	URSA02

PARAMETER	01087-1	01087-2	01087-3	01087-4	01087-5
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	<1.0	2.4	<1.0	4.2
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
Total Xylenes, ug/l	<2.0	<2.0	<2.0	<2.0	<2.0
Surrogate - a,a,a-Trifluorotoluene	100 %	100 %	97 %	100 %	100 %
Dilution Factor	1	1	1	1	1
Prep Date	03.20.02	03.20.02	03.20.02	03.20.02	03.20.02
Analysis Date	03.20.02	03.20.02	03.20.02	03.20.02	03.20.02

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STL Tallahassee

LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 095820410

REPORT OF RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, LIQUID SAMPLES	DATE/ TIME SAMPLED		SDG#	
01087-6	FR-7d	03-14-02/10:45	URSA02		
01087-7	FR-8d	03-14-02/11:15	URSA02		
01087-8	Trip Blank	03-14-02	URSA02		
01087-9	MW-10d	03-14-02/09:35	URSA02		
01087-10	MW-20b	03-14-02/08:50	URSA02		
PARAMETER	01087-6	01087-7	01087-8	01087-9	01087-10
Purgeable Aromatics (602)					
Benzene, ug/l	0.40J	<1.0	<1.0	<1.0	<1.0
Toluene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene, ug/l	<1.0-333B	<1.0-333B	0.43J	<1.0-333B	<1.0-333B
Total Xylenes, ug/l	<2.0	<2.0	0.28J	<2.0	<2.0
Surrogate - a, a, a-Trifluorotoluene	110 %	100 %	100 %	100 %	100 %
Dilution Factor	1	1	1	1	1
Prep Date	03.20.02	03.20.02	03.20.02	03.20.02	03.20.02
Analysis Date	03.20.02	03.20.02	03.20.02	03.20.02	03.20.02

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 (USEPA, October 1999 and February 1994, respectively).

0006

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STL Tallahassee

LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 095820410

REPORT OF RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, LIQUID SAMPLES	DATE/ TIME SAMPLED		SDG#	
01087-11	Trip Blank	03-14-02	URSA02		
01087-12	Blind Duplicate 1 (FR-8d)	03-14-02/09:53	URSA02		
01087-13	Blind Duplicate 2 (FR-6d)	03-14-02/10:05	URSA02		
01087-14	FR-9d	03-14-02/10:20	URSA02		
01087-15	MW-10b	03-14-02/09:20	URSA02		
PARAMETER	01087-11	01087-12	01087-13	01087-14	01087-15
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	2.5	4.0	<1.0	<1.0
Toluene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene, ug/l	0.39J	<1.0-333B	<1.0-333B	<1.0-333B	<1.0-333B
Total Xylenes, ug/l	<2.0	<2.0	<2.0	<2.0	<2.0
Surrogate - a, a, a-Trifluorotoluene	100 %	100 %	100 %	99 %	100 %
Dilution Factor	1	1	1	1	1
Prep Date	03.20.02	03.21.02	03.21.02	03.21.02	03.21.02
Analysis Date	03.20.02	03.21.02	03.21.02	03.21.02	03.21.02

0007

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LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 095820410
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#		
01087-16	Method Blank		URSA02		
01087-17	Reporting Limit (RL)		URSA02		
01087-18	Method Detection Limit (MDL)		URSA02		
01087-19	Accuracy (%Rec) LCS		URSA02		
01087-20	Precision (%RPD) MS/MSD		URSA02		
PARAMETER	01087-16	01087-17	01087-18	01087-19	01087-20
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	1.0	0.10	115 %	10 %
Toluene, ug/l	<1.0	1.0	0.13	120 %	10 %
Ethylbenzene, ug/l	0.33J	1.0	0.14	---	---
Total Xylenes, ug/l	<2.0	2.0	0.27	---	---
Surrogate - a,a,a-Trifluorotoluene	120 %	---	---	120 %	---
Dilution Factor	1	---	---	1	---
Prep Date	03.20.02	---	---	03.20.02	---
Analysis Date	03.20.02	---	---	03.20.02	---

Sample results have been qualified by URS. Reason based on the results of the data review process, which is mandated after the National Functional Guidelines for Organic and Inorganic Data Review are the number 109 and February 1994, respectively.

0008

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LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 084520415
Page 5

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
01087-21	LCS Accuracy Control Limit (%R)		URSA02
01087-22	MS Precision Advisory Limit (%RPD)		URSA02
PARAMETER	01087-21	01087-22	
Purgeable Aromatics (602)			
Benzene, %	39-150 %	<31 %	
Toluene, %	46-148 %	<25 %	
Surrogate - a,a,a-Trifluorotoluene	70-130 %	---	

0009

Sample results have been qualified by URS. Reason based on the results of the data review process, which is mandated after the National Functional Guidelines for Organic and Inorganic Data Review are the number 109 and February 1994, respectively.



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LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 084520415
Page 6

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION	QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
01087-23	Method Blank			URSA02
PARAMETER		01087-23		
Purgeable Aromatics (602)				
	Benzene, ug/l		1.0U	
	Toluene, ug/l		1.0U	
	Ethylbenzene, ug/l		0.35J	
	Total Xylenes, ug/l		2.0U	
	Methyl t-butyl ether (MTBE), ug/l		10U	
	Surrogate - a,a,a-Trifluorotoluene		130 †	
	Dilution Factor		1	
	Prep Date		03.21.02	
	Analysis Date		03.21.02	

These test results meet all the requirements of NELAC. Any 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

B This analyte was detected in the associated method blank.

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

Laura B. Snead, Project Manager

0009A

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

LABORATORY DATA REPORT

LEVEL III DATA PACKAGE

SDG# URSA02



Prepared for
URS Corporation
by
STL Tallahassee
Tallahassee, Florida



Contents

Chain-of Custody Documentation

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Data Deliverables

Volatiles Aromatics *Method 602*

CHAIN-OF-CUSTODY DOCUMENTATION

Cooler 1 of 2

Serial Number 014252

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 <i>Abbott Labs Fuel Release</i>		PROJECT NO.	PROJECT LOCATION (STATE) <i>NC</i>	MATRIX TYPE	REQUIRED ANALYSIS		PAGE 1 OF 2
STL (LAB) PROJECT MANAGER <i>Laura Sneed</i>		P.O. NUMBER <i>808808.01</i>	CONTRACT NO.	<i>Water</i>	<i>EPA 602 (BTEX only)</i>	HCL PRESERVATIVE	STANDARD REPORT DELIVERY DATE DUE <input checked="" type="checkbox"/>
CLIENT (SITE) <i>Laurinburg, NC</i>		CLIENT PHONE <i>919-461-1100</i>	CLIENT FAX <i>461-1415</i>				EXPEDITED REPORT DELIVERY (SURCHARGE) DATE DUE <input type="checkbox"/>
CLIENT NAME <i>URS Corporation</i>		CLIENT E-MAIL					NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
CLIENT ADDRESS <i>1600 Perimeter Park Dr., Morrisville, NC 27560</i>		COMPANY CONTRACTING THIS WORK (if applicable) <i>URS Corporation - Martha Meyers-Lee</i>					REMARKS
DATE	TIME	SAMPLE IDENTIFICATION				NUMBER CONTAINERS SUBMITTED	
<i>3-14-02</i>	<i>1030</i>	<i>FR-1</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>1055</i>	<i>FR-3</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>0953</i>	<i>FR-3d</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>1110</i>	<i>FR-5</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>1005</i>	<i>FR-6d</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>1045</i>	<i>FR-7d</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>1115</i>	<i>FR-8d</i>		<i>X</i>		<i>3</i>	
		<i>FR-9d e smc</i>					
		<i>MW-10b e smc</i>					
<i>3-14-02</i>		<i>Trip Blank</i>		<i>X</i>		<i>2</i>	
RELINQUISHED BY (SIGNATURE) <i>[Signature]</i>		DATE <i>3/6/02</i>	TIME <i>1600</i>	RELINQUISHED BY (SIGNATURE) <i>Shannon Clum</i>		DATE <i>3-14-02</i>	TIME <i>1400</i>
RECEIVED BY (SIGNATURE)		DATE	TIME	RECEIVED BY (SIGNATURE)		DATE	TIME

Serial Number 014253

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 <i>Abbott Labs Fuel Release</i>		PROJECT NO.	PROJECT LOCATION (STATE) <i>NC</i>	MATRIX TYPE	REQUIRED ANALYSIS		PAGE 2 OF 2
STL (LAB) PROJECT MANAGER <i>Laura Sneed</i>		P.O. NUMBER <i>808808.01</i>	CONTRACT NO.	<i>Water</i>	<i>EPA 602 BTEX Only</i>	HCL PRESERVATIVE	STANDARD REPORT DELIVERY DATE DUE <input checked="" type="checkbox"/>
CLIENT (SITE) <i>Laurinburg, NC</i>		CLIENT PHONE <i>919-461-1519</i>	CLIENT FAX <i>919-461-1415</i>				EXPEDITED REPORT DELIVERY (SURCHARGE) DATE DUE <input type="checkbox"/>
CLIENT NAME <i>URS Corporation</i>		CLIENT E-MAIL					NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
CLIENT ADDRESS <i>1600 Perimeter Park Dr., Morrisville, NC 27560</i>		COMPANY CONTRACTING THIS WORK (if applicable) <i>URS Corporation - Martha Meyers-Lee</i>					REMARKS
DATE	TIME	SAMPLE IDENTIFICATION				NUMBER CONTAINERS SUBMITTED	
<i>3-14-02</i>	<i>0935</i>	<i>MW-10d</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>0850</i>	<i>MW-20b</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>		<i>Trip blank</i>		<i>X</i>		<i>1</i>	
<i>3-14-02</i>	<i>0953</i>	<i>Blind duplicate 1</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>1005</i>	<i>Blind duplicate 2</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>1020</i>	<i>FR-9d</i>		<i>X</i>		<i>3</i>	
<i>3-14-02</i>	<i>0920</i>	<i>MW-10b</i>		<i>X</i>		<i>3</i>	
RELINQUISHED BY (SIGNATURE) <i>[Signature]</i>		DATE <i>3/6/02</i>	TIME <i>1600</i>	RELINQUISHED BY (SIGNATURE) <i>Shannon Clum</i>		DATE <i>3-14-02</i>	TIME <i>1400</i>
RECEIVED BY (SIGNATURE)		DATE	TIME	RECEIVED BY (SIGNATURE)		DATE	TIME

LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 185020410
Page 1

LABORATORY REPORT

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED		SDG#	
01087-1	FR-1	03-14-02/10:30		URSA02	
01087-2	FR-3	03-14-02/10:55		URSA02	
01087-3	FR-3d	03-14-02/09:53		URSA02	
01087-4	FR-5	03-14-02/11:10		URSA02	
01087-5	FR-6d	03-14-02/10:05		URSA02	
PARAMETER	01087-1	01087-2	01087-3	01087-4	01087-5
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	<1.0	2.4	<1.0	4.2
Toluene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene, ug/l	0.37JB	0.36JB	0.86JB	0.34JB	0.38JB
Total Xylenes, ug/l	<2.0	<2.0	<2.0	<2.0	<2.0
Surrogate - a,a,a-Trifluorotoluene	100 %	100 %	97 %	100 %	100 %
Dilution Factor	1	1	1	1	1
Prep Date	03.20.02	03.20.02	03.20.02	03.20.02	03.20.02
Analysis Date	03.20.02	03.20.02	03.20.02	03.20.02	03.20.02

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STL Tallahassee

LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 095820410
Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
01087-6	FR-7d	03-14-02/10:45	URSA02
01087-7	FR-8d	03-14-02/11:15	URSA02
01087-8	Trip Blank	03-14-02	URSA02
01087-9	MW-10d	03-14-02/09:35	URSA02
01087-10	MW-20b	03-14-02/08:50	URSA02

PARAMETER	01087-6	01087-7	01087-8	01087-9	01087-10
Purgeable Aromatics (602)					
Benzene, ug/l	0.40J	<1.0	<1.0	<1.0	<1.0
Toluene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene, ug/l	0.33JB	0.33JB	0.43JB	0.34JB	0.33JB
Total Xylenes, ug/l	<2.0	<2.0	0.28J	<2.0	<2.0
Surrogate - a,a,a-Trifluorotoluene	110 ‡	100 ‡	100 ‡	100 ‡	100 ‡
Dilution Factor	1	1	1	1	1
Prep Date	03.20.02	03.20.02	03.20.02	03.20.02	03.20.02
Analysis Date	03.20.02	03.20.02	03.20.02	03.20.02	03.20.02

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Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 095820410
Page 3

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
01087-11	Trip Blank	03-14-02	URSA02
01087-12	Blind Duplicate 1	03-14-02/09:53	URSA02
01087-13	Blind Duplicate 2	03-14-02/10:05	URSA02
01087-14	FR-9d	03-14-02/10:20	URSA02
01087-15	MW-10b	03-14-02/09:20	URSA02

PARAMETER	01087-11	01087-12	01087-13	01087-14	01087-15
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	2.5	4.0	<1.0	<1.0
Toluene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene, ug/l	0.39JB	0.82JB	0.37JB	0.36JB	0.33JB
Total Xylenes, ug/l	<2.0	<2.0	<2.0	<2.0	<2.0
Surrogate - a,a,a-Trifluorotoluene	100 ‡	100 ‡	100 ‡	99 ‡	100 ‡
Dilution Factor	1	1	1	1	1
Prep Date	03.20.02	03.21.02	03.21.02	03.21.02	03.21.02
Analysis Date	03.20.02	03.21.02	03.21.02	03.21.02	03.21.02

0006

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STL Tallahassee

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Received: 15 MAR 02
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URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 095820410

REPORT OF RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#		
01087-16	Method Blank		URSA02		
01087-17	Reporting Limit (RL)		URSA02		
01087-18	Method Detection Limit (MDL)		URSA02		
01087-19	Accuracy (%Rec) LCS		URSA02		
01087-20	Precision (%RPD) MS/MSD		URSA02		
PARAMETER	01087-16	01087-17	01087-18	01087-19	01087-20
Purgeable Aromatics (602)					
Benzene, ug/l	<1.0	1.0	0.10	115 ‡	10 ‡
Toluene, ug/l	<1.0	1.0	0.13	120 ‡	10 ‡
Ethylbenzene, ug/l	0.33J	1.0	0.14	---	---
Total Xylenes, ug/l	<2.0	2.0	0.27	---	---
Surrogate - a,a,a-Trifluorotoluene	120 ‡	---	---	120 ‡	---
Dilution Factor	1	---	---	1	---
Prep Date	03.20.02	---	---	03.20.02	---
Analysis Date	03.20.02	---	---	03.20.02	---

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LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 084520415

REPORT OF RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
01087-21	LCS Accuracy Control Limit (%R)		URSA02
01087-22	MS Precision Advisory Limit (%RPD)		URSA02
PARAMETER	01087-21	01087-22	
Purgeable Aromatics (602)			
Benzene, ‡	39-150 ‡	<31 ‡	
Toluene, ‡	46-148 ‡	<25 ‡	
Surrogate - a,a,a-Trifluorotoluene	70-130 ‡	---	

0008

0009

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STL Tallahassee

LOG NO: T2-01087
Received: 15 MAR 02
Reported: 10 APR 02

Ms. Martha Meyers-Lee
URS Corporation
P.O. Box 13000
Research Triangle Park, NC 27709

Client PO. No.: 759019.UA
Cl Project No: 808808.01

Project: Abbott Labs Fuel Release
Sampled By: Client
Code: 084520415
Page 6

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
01087-23	Method Blank		URSA02
PARAMETER		01087-23	
Purgeable Aromatics (602)			
Benzene, ug/l		1.0U	
Toluene, ug/l		1.0U	
Ethylbenzene, ug/l		0.35J	
Total Xylenes, ug/l		2.0U	
Methyl t-butyl ether (MTBE), ug/l		10U	
Surrogate - a,a,a-Trifluorotoluene		130 J	
Dilution Factor		1	
Prep Date		03.21.02	
Analysis Date		03.21.02	

These test results meet all the requirements of NELAC. Any 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

B This analyte was detected in the associated method blank.

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


Laura B. Snead, Project Manager

DATA DELIVERABLES

00094

PURGEABLE AROMATICS
Method 602

CASE NARRATIVE

0011

0012

**CASE NARRATIVE
PURGEABLE HALOCARBONS**

STL SDG No: URSA02

STL Log No(s): T201087

Client Project ID: Abbott Labs 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: 04/10/02

Laura B. Snead
Project Manager
STL Tallahassee

FORMS

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-1

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-1

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q28

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	10	U
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	0.37	BJ
136777-61-2	m&p-Xylene	2.0	U
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylenes (total)	2.0	U

FORM I VOA

0015

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-2

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-3

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q29

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	10	U
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	0.36	BJ
136777-61-2	m&p-Xylene	2.0	U
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylenes (total)	2.0	U

FORM I VOA

0016

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-3

Lab Name: STL TALLAHASSEE

Lab Code:

Client:

Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-3D

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q30

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
1634-04-4	MTBE	10	U	
71-43-2	Benzene	2.4	U	
108-88-3	Toluene	1.0	U	
100-41-4	Ethylbenzene	0.86	BJ	
136777-61-2	m&p-Xylene	2.0	U	
95-47-6	o-Xylene	1.0	U	
1330-20-7	Xylenes (total)	2.0	U	

FORM I VOA

0017

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-4

Lab Name: STL TALLAHASSEE

Lab Code:

Client:

Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-5

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q31

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
1634-04-4	MTBE	10	U	
71-43-2	Benzene	1.0	U	
108-88-3	Toluene	1.0	U	
100-41-4	Ethylbenzene	0.34	BJ	
136777-61-2	m&p-Xylene	2.0	U	
95-47-6	o-Xylene	1.0	U	
1330-20-7	Xylenes (total)	2.0	U	

FORM I VOA

0018

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-5

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-6D

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q32

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	-----MTBE	5.4	J
71-43-2	-----Benzene	4.2	
108-88-3	-----Toluene	1.0	U
100-41-4	-----Ethylbenzene	0.38	BJ
136777-61-2	-----m&p-Xylene	2.0	U
95-47-6	-----o-Xylene	1.0	U
1330-20-7	-----Xylenes (total)	2.0	U

FORM I VOA

0019

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-6

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-7D

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q33

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	-----MTBE	10	U
71-43-2	-----Benzene	0.40	J
108-88-3	-----Toluene	1.0	U
100-41-4	-----Ethylbenzene	0.33	BJ
136777-61-2	-----m&p-Xylene	2.0	U
95-47-6	-----o-Xylene	1.0	U
1330-20-7	-----Xylenes (total)	2.0	U

FORM I VOA

0020

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-7

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-8D

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q34

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	MTBE	10 U	
71-43-2	Benzene	1.0 U	
108-88-3	Toluene	1.0 U	
100-41-4	Ethylbenzene	0.33 BJ	
136777-61-2	m&p-Xylene	2.0 U	
95-47-6	o-Xylene	1.0 U	
1330-20-7	Xylenes (total)	2.0 U	

FORM I VOA

0021

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-8

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: TRIP BLANK

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q26

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1634-04-4	MTBE	10 U	
71-43-2	Benzene	1.0 U	
108-88-3	Toluene	1.0 U	
100-41-4	Ethylbenzene	0.43 BJ	
136777-61-2	m&p-Xylene	0.28 J	
95-47-6	o-Xylene	1.0 U	
1330-20-7	Xylenes (total)	0.28 J	

FORM I VOA

0022

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-9

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: MW-10D

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q35

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	10	U
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	0.34	BJ
136777-61-2	m&p-Xylene	2.0	U
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylenes (total)	2.0	U

FORM I VOA

0023

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-10

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: MW-20B

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q36

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	10	U
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	0.33	BJ
136777-61-2	m&p-Xylene	2.0	U
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylenes (total)	2.0	U

FORM I VOA

0024

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-11

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: TRIP BLANK

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q27

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	----------------------------------------------	---

1634-04-4	-----MTBE	10	U
71-43-2	-----Benzene	1.0	U
108-88-3	-----Toluene	1.0	U
100-41-4	-----Ethylbenzene	0.39	BJ
136777-61-2	-----m&p-Xylene	2.0	U
95-47-6	-----o-Xylene	1.0	U
1330-20-7	-----Xylenes (total)	2.0	U

FORM I VOA

0025

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-12

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: BLIND DUPLICATE 1

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q37

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/21/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	----------------------------------------------	---

1634-04-4	-----MTBE	10	U
71-43-2	-----Benzene	2.5	U
108-88-3	-----Toluene	1.0	U
100-41-4	-----Ethylbenzene	0.82	BJ
136777-61-2	-----m&p-Xylene	2.0	U
95-47-6	-----o-Xylene	1.0	U
1330-20-7	-----Xylenes (total)	2.0	U

FORM I VOA

0026

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-13

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: BLIND DUPLICATE 2

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q38

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/21/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4-----	MTBE	5.0	J
71-43-2-----	Benzene	4.0	
108-88-3-----	Toluene	1.0	U
100-41-4-----	Ethylbenzene	0.37	BJ
136777-61-2-----	m&p-Xylene	2.0	U
95-47-6-----	o-Xylene	1.0	U
1330-20-7-----	Xylenes (total)	2.0	U

FORM I VOA

0027

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-14

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-9D

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q39

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/21/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4-----	MTBE	10	U
71-43-2-----	Benzene	1.0	U
108-88-3-----	Toluene	1.0	U
100-41-4-----	Ethylbenzene	0.36	BJ
136777-61-2-----	m&p-Xylene	2.0	U
95-47-6-----	o-Xylene	1.0	U
1330-20-7-----	Xylenes (total)	2.0	U

FORM I VOA

0028

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-15

Lab Name: STL TALLAHASSEE

Lab Code:

Client:

Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: MW-10B

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q40

Level: (low/med) LOW

Date Received: 03/15/02

% Moisture: not dec. _____

Date Analyzed: 03/21/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	10	U
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	0.33	BJ
136777-61-2	m&p-Xylene	2.0	U
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylenes (total)	2.0	U

FORM I VOA

0029

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

1Q0320MB

Lab Name: STL TALLAHASSEE

Lab Code:

Client:

Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: 1Q0320MB

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q7

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	10	U
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	0.33	J
136777-61-2	m&p-Xylene	2.0	U
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylenes (total)	2.0	U

FORM I VOA

0030

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

1Q0320MBLCS

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: 1Q0320MBLCS

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q3

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	2.4	J
71-43-2	Benzene	23	
108-88-3	Toluene	24	
100-41-4	Ethylbenzene	24	B
136777-61-2	m&p-Xylene	0.31	J
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylenes (total)	0.31	J

FORM I VOA

0031

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

1Q0320MBLCS

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: 1Q0320MBLCS

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C20Q24

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 03/20/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	10	U
71-43-2	Benzene	20	
108-88-3	Toluene	21	
100-41-4	Ethylbenzene	21	B
136777-61-2	m&p-Xylene	1.0	J
95-47-6	o-Xylene	0.30	J
1330-20-7	Xylenes (total)	1.3	J

FORM I VOA

0032

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

Lab Name: STL TALLAHASSEE

Lab Code:

1Q0321MB

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: 1Q0321MB

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C21Q6

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 03/21/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	10	U
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	0.35	J
136777-61-2	m&p-Xylene	2.0	U
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylenes (total)	2.0	U

FORM I VOA

0033

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

Lab Name: STL TALLAHASSEE

Lab Code:

01087-1MS

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-1

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C21Q18

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 03/21/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4	MTBE	10	U
71-43-2	Benzene	21	
108-88-3	Toluene	21	
100-41-4	Ethylbenzene	21	B
136777-61-2	m&p-Xylene	2.0	U
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylenes (total)	2.0	U

FORM I VOA

0034

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

01087-1MSD

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

Matrix: (soil/water) WATER

Lab Sample ID: FR-1

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: 2C21Q19

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 03/21/02

GC Column: DBVRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4-----	MTBE	10	U
71-43-2-----	Benzene	19	
108-88-3-----	Toluene	19	
100-41-4-----	Ethylbenzene	20	E
136777-61-2-----	m&p-Xylene	2.0	U
95-47-6-----	o-Xylene	1.0	U
1330-20-7-----	Xylenes (total)	2.0	U

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: STL TALLAHASSEE

Lab Code:

Client: Project:

SDG No.: URSA02

CLIENT SAMPLE NO.	SMC1 (FBZ) #	SMC2 #	SMC3 #	OTHER	TOT OUT
01	1Q0320MBLCS	110	120		0
02	1Q0320MB	110	120		0
03	1Q0320MBLCS	100	110		0
04	01087-8	96	100		1
05	01087-11	100	100		1
06	01087-1	100	100		1
07	01087-2	100	100		1
08	01087-3	96	97		1
09	01087-4	99	100		1
10	01087-5	110	100		1
11	01087-6	100	110		0
12	01087-7	99	100		1
13	01087-9	100	100		1
14	01087-10	100	100		1
15	01087-12	100	100		1
16	01087-13	100	100		1
17	01087-14	95	99		1
18	01087-15	100	100		1
19	1Q0321MB	130	130		0
20	01087-1MS	110	120		0
21	01087-1MSD	100	110		0
22					
23					
24					
25					
26					
27					
28					
29					
30					

QC LIMITS
SMC1 (FBZ) = Fluorobenzene Surr (70-130)
SMC2 = 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 LAB CONTROL SAMPLE

Lab Name: STL TALLAHASSEE Lab Code:
Client: Project: SDG No.: URSA02
Matrix Spike - Sample No.: 1Q0320MB

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONC (ug/L)	LCS CONC (ug/L)	LCS % REC#	QC LIMITS REC.
Benzene	20	0.00	23	115	39-150
Toluene	20	0.00	24	120	46-148

COMPOUND	SPIKE ADDED (ug/L)	LCS CONC (ug/L)	LCS % REC#	AVG % REC	% RPD\$#	QC LIMITS RPD REC.
Benzene	20	20	100	108	14	31 39-150
Toluene	20	21	105	112	13	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 III VOA

0037

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: STL TALLAHASSEE Lab Code:
Client: Project: SDG No.: URSA02
Matrix Spike - Sample No.: 01087-1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONC (ug/L)	MS CONC (ug/L)	MS % REC#	QC LIMITS REC.
Benzene	20	0.00	21	105	39-150
Toluene	20	0.00	21	105	46-148

COMPOUND	SPIKE ADDED (ug/L)	MSD CONC (ug/L)	MSD % REC#	AVG % REC	% RPD\$#	QC LIMITS RPD REC.
Benzene	20	19	95	100	10	31 39-150
Toluene	20	19	95	100	10	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 III VOA

0038

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

Lab Name: STL TALLAHASSEE Lab Code:

1Q0320MB

Client: Project: SDG No.: URSA02

Lab File ID: 2C20Q7 Lab Sample ID: 1Q0320MB

Date Analyzed: 03/20/02 Time Analyzed: 0955

GC Column: DBVRX ID: 0.45 (mm) Heated Purge: (Y/N) N

Instrument ID: TVGQPID2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED	
01	1Q0320MBLCS	1Q0320MBLCS	2C20Q3	0803
02	1Q0320MBLCS	1Q0320MBLCS	2C20Q24	1822
03	01087-8	TRIP BLANK	2C20Q26	1918
04	01087-11	TRIP BLANK	2C20Q27	1946
05	01087-1	FR-1	2C20Q28	2013
06	01087-2	FR-3	2C20Q29	2041
07	01087-3	FR-3D	2C20Q30	2109
08	01087-4	FR-5	2C20Q31	2136
09	01087-5	FR-6D	2C20Q32	2204
10	01087-6	FR-7D	2C20Q33	2232
11	01087-7	FR-8D	2C20Q34	2259
12	01087-9	MW-10D	2C20Q35	2327
13	01087-10	MW-20B	2C20Q36	2355
14	01087-12	BLIND DUPLICAT	2C20Q37	0022
15	01087-13	BLIND DUPLICAT	2C20Q38	0050
16	01087-14	FR-9D	2C20Q39	0118
17	01087-15	MW-10B	2C20Q40	0145
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

Lab Name: STL TALLAHASSEE Lab Code:

1Q0321MB

Client: Project: SDG No.: URSA02

Lab File ID: 2C21Q6 Lab Sample ID: 1Q0321MB

Date Analyzed: 03/21/02 Time Analyzed: 1306

GC Column: DBVRX ID: 0.45 (mm) Heated Purge: (Y/N) N

Instrument ID: TVGQPID2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED	
01	01087-1MS	01087-1MS	2C21Q18	1840
02	01087-1MSD	01087-1MSD	2C21Q19	1908
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
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28				
29				
30				

COMMENTS:

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: STL TALLAHASSEE Lab Code:
 Client: Project: SDG No.: URSA02
 Instrument ID: TVGQPID2 Calibration Date(s): 03/18/02 03/18/02
 Column: DBVRX ID: 0.45 (mm) Calibration Time(s): 1731 2112
 LAB FILE ID: RF1: 2C18Q20 RF2: 2C18Q21 RF5: 2C18Q22
 RF10: 2C18Q23 RF20: 2C18Q24

COMPOUND	RF1	RF2	RF5	RF10	RF20
MIBB	0.304	0.419	0.364	0.353	0.396
Benzene	1.944	2.526	2.248	2.189	2.428
Toluene	1.821	2.381	2.098	2.033	2.301
Ethylbenzene	2.670	2.762	2.188	2.046	2.198
m&p-Xylene	2.221	2.768	2.390	2.245	2.388
o-Xylene	1.411	1.847	1.631	1.584	1.763
Xylenes (total)	1.951	2.461	2.137	2.025	2.179
Fluorobenzene Surr	1.657	1.422	1.186	1.447	1.629
a,a,a-Trifluorotoluene Surr*	0.830	0.697	0.542	0.730	0.820

FORM VI VOA

0041

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: STL TALLAHASSEE Lab Code:
 Client: Project: SDG No.: URSA02
 Instrument ID: TVGQPID2 Calibration Date(s): 03/18/02 03/18/02
 Column: DBVRX ID: 0.45 (mm) Calibration Time(s): 1731 2112
 LAB FILE ID: RF30: 2C18Q25 RF40: 2C18Q26 RF60: 2C18Q27
 RF0: 2C18Q19

COMPOUND	RF30	RF40	RF60	RF0
MIBB	0.404	0.387	0.390	0.170
Benzene	2.506	2.416	2.446	
Toluene	2.390	2.297	2.320	
Ethylbenzene	2.239	2.151	2.154	
m&p-Xylene	2.404	2.276	2.236	
o-Xylene	1.820	1.735	1.751	
Xylenes (total)	2.210	2.096	2.075	
Fluorobenzene Surr	1.698	1.663	1.696	
a,a,a-Trifluorotoluene Surr*	0.864	0.867	0.882	

FORM VI VOA

0042

FORM 7
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: STL TALLAHASSEE Lab Code:

Client: Project: SDG No.: URSN02

Instrument ID: TWQPID2 Calibration Date: 03/21/02 Time: 1104

Lab File ID: 2C21Q2 Init. Calib. Date(s): 03/18/02 03/18/02

Init. Calib. Times: 1731 2112

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	200	0.384	0.10	0.0	15.0	LINR
Benzene	20	20	2.438	0.01	0.0	23.0	LINR
Toluene	20	20	2.275	0.01	0.0	22.5	LINR
Ethylbenzene	20	20	2.199	0.01	0.0	37.0	LINR
m,p-Xylene	40	42	2.381	0.01	5.0	27.5	LINR
o-Xylene	20	20	1.724	0.01	0.0	27.5	LINR
Xylenes (total)	60	61	2.162	0.01	1.7	27.5	LINR
Fluorobenzene Surr	20	21	1.743	0.01	5.0	15.0	LINR
a,a'-Tetrafluorotoluene Surr*	20	21	0.917	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

0045

VG15:07.15.08

Appendix B QC Summary

QC CHECK	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION
[REDACTED]	Prior to sample analysis or when CCV fails	[REDACTED]	-Evaluate chromatogram and integrations. Check calculations. -Reanalyze standard(s) -Remake and reanalyze standard(s) -Perform instrument or column maintenance and reanalyze standards
[REDACTED]	Every 12 hours and at end of sequence	[REDACTED]	-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
Lab control 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

0045 A

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL TALLAHASSEE Lab Code:
 Client: Project: SDG No.: URSA02
 Lab File ID (Standard): 2C20Q2 Date Analyzed: 03/20/02
 Instrument ID: TVGQPID2 Time Analyzed: 0718
 GC Column: DBVRX ID: 0.45 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	39220	12.67				
UPPER LIMIT	78440	13.17				
LOWER LIMIT	19610	12.17				
CLIENT SAMPLE NO.						
01 1Q0320BLCSS	37389	12.68				
02 1Q0320MB	33235	12.68				
03 1Q0320BLCSSD	40874	12.67				
04 01087-8	41417	12.67				
05 01087-11	39057	12.66				
06 01087-1	38687	12.66				
07 01087-2	39046	12.67				
08 01087-3	40821	12.67				
09 01087-4	40307	12.66				
10 01087-5	39388	12.67				
11 01087-6	38673	12.66				
12 01087-7	39448	12.66				
13 01087-9	40763	12.67				
14 01087-10	39408	12.67				
15 01087-12	38812	12.66				
16 01087-13	40480	12.67				
17 01087-14	40455	12.67				
18 01087-15	37515	12.66				
19						
20						
21						
22						

IS1 = 1-Chloro-4-Fluorobenzene-IS*

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = - 50% of internal standard area
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL TALLAHASSEE Lab Code:
 Client: Project: SDG No.: URSA02
 Lab File ID (Standard): 2C21Q2 Date Analyzed: 03/21/02
 Instrument ID: TVGQPID2 Time Analyzed: 1104
 GC Column: DBVRX ID: 0.45 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	40912	12.67				
UPPER LIMIT	81824	13.17				
LOWER LIMIT	20456	12.17				
CLIENT SAMPLE NO.						
01 1Q0321MB	30364	12.66				
02 01087-1MS	38479	12.66				
03 01087-1MSD	40942	12.67				
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS1 = 1-Chloro-4-Fluorobenzene-IS*

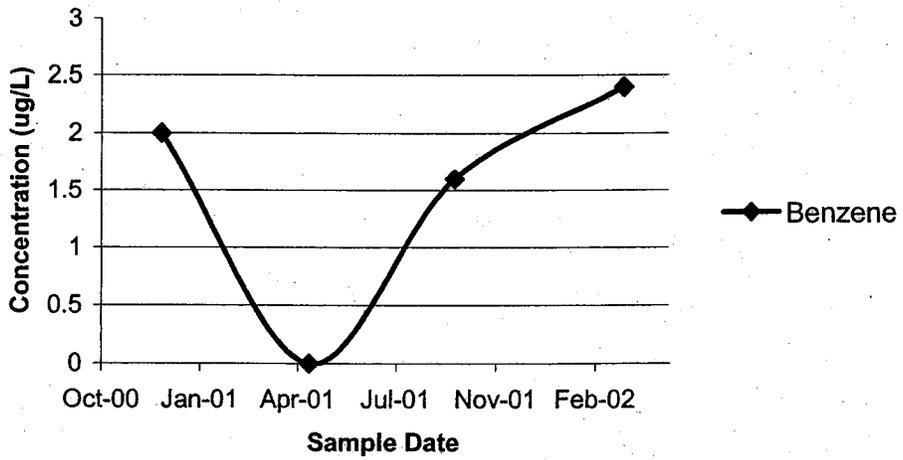
AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = - 50% of internal standard area
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

CONTAMINANT CONCENTRATIONS VERSUS TIME

APPENDIX B

FR-3d



FR-6d

