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**Corrective Action Update
Burlington Industries, Inc.
Raeford Facility
Raeford, North Carolina**

March 10, 1993

Prepared For

**Burlington Industries, Inc.
Clarksville, Virginia**

Prepared By

**Aquaterra, Inc.
Raleigh, North Carolina**

AQUATERRA





AQUATERRA

Environmental Consultants

March 10, 1993

Mr. Jim Bales
Department of Environment, Health, and Natural Resources
Division of Environmental Management
Ground Water Section
Wachovia Building
Suite 714
Fayetteville, North Carolina 28301

Reference: Corrective Action Update
Burlington Industries, Inc.
Raeford Facility
Raeford, North Carolina
Aquaterra Job No. 2146700

Dear Mr. Bales:

On behalf of Burlington Industries, Inc., Aquaterra, Inc. is pleased to submit this report describing ground water remediation and sampling activities at the Raeford site. The attached report summarizes recent field activities and laboratory analytical data, and presents our conclusions regarding the site. The report includes static water level elevation data and the ground water analytical results.

If you have any questions or comments regarding this report, please do not hesitate to contact Mr. Mike Garlick at (804) 374-8111 or me at (919) 859-9987.

Sincerely,

AQUATERRA, INC.

Sharon A. Myers
Project Manager

Senior Peer Review By

David L. Duncklee, P.G.
Senior Project Manager

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**Corrective Action Update
Burlington Industries, Inc.
Raeford Facility
Raeford, North Carolina
March 5, 1993**

1 Introduction

Burlington Industries, Inc. (Burlington) owns and operates a yarn dye plant located in Raeford, North Carolina (see Figure 1). During March 1990, a 1,000 gallon mineral spirits (Safety Kleen) underground storage tank (UST) was excavated and removed (see Figure 2). The UST closure is documented in the April 2, 1990, Aquaterra report titled *Underground Storage Tank Closure Assessment* (Aquaterra Report Number GR-28-90) that was submitted in April 1990 to the North Carolina Department of Environment, Health, and Natural Resources (DEHNR), Division of Environmental Management (DEM), Fayetteville, North Carolina regional office.

Based on soil analytical results from samples taken during UST closure, DEM requested that Burlington assess the ground water at the UST site for possible volatile organic compound (VOC) contamination. During November 1990, three shallow ground water monitoring wells were installed in the area of the Safety Kleen UST excavation (see Figure 2). Laboratory results of monitoring well sampling indicated ground water contamination by VOCs and semivolatile tentatively identified compounds (TICs). The results of this investigation were presented in the Aquaterra report *Phase I Ground Water Assessment* (R164-91C) which was submitted to DEM in February 1991.

Based upon their review of the Phase I ground water assessment report, DEM requested in an April 23, 1991, correspondence to Burlington that additional ground water assessment activities be conducted at the site.

During July 1991, additional ground water assessment activities were performed at the site. Laboratory analytical results indicated that shallow ground water downgradient of the former UST location was impacted by VOCs. During September 1991, Burlington submitted a report to DEM summarizing the results of the Phase II investigation (*Phase II Ground Water Assessment*, Aquaterra Report Number R230-91C).

On September 27, 1991, DEM requested that a comprehensive site assessment be conducted to delineate the lateral and vertical extent of contamination at the facility.

During October 1991, January 1992, and February 1992, additional ground water assessment activities were performed at the facility. The results of these activities were summarized in a report submitted to DEM by Burlington (*Phase II Confirmation Ground Water Assessment*, Aquaterra Report Number R274-92C).



In July 1992, Aquaterra installed a six inch recovery well (RW-1) to extract ground water at the Burlington site (see Figure 2). Details of the recovery system installation were provided to DEM by Burlington in the *Recovery System Installation Report* (Aquaterra Report Number R325-92C).

2 Shallow Ground Water Table Conditions

During the October 23, 1992, ground water sampling event, depth to water measurements were collected by Burlington personnel from monitoring wells at the site. Water levels were collected again on February 19, 1993, and this data has been used to generate a shallow ground water contour map (see Figure 3). From this data, it appears shallow ground water downgradient of the former UST is migrating towards extraction well RW-1.

3 Ground Water Sampling and Laboratory Results

3.1 Ground Water Sampling

On October 23, 1992, Burlington personnel conducted ground water sampling activities at the site. Following the sampling event, the ground water samples were shipped to the IEA, Inc., analytical laboratory in Cary, North Carolina for analysis of purgeable halocarbons (PHs) according to EPA Method 601. Tables 2 through 9 summarize the results and Attachment A contains copies of analytical results and the chain-of-custody form.

3.2 October 23, 1992 Ground Water Quality Results

Monitoring wells MW-5i, MW-6i, MW-6d, and MW-9 were sampled during the October 1992 sampling event. The following constituents were detected in these wells at low concentrations:

- | | |
|--------------------------|-------------------------|
| • carbon tetrachloride | • chlorobenzene |
| • chloroform | • 1,2-dichlorobenzene |
| • 1,3-dichlorobenzene | • 1,4-dichlorobenzene |
| • 1,1-dichloroethane | • 1,1-dichloroethene |
| • 1,2-dichloroethane | • methylene chloride |
| • tetrachloroethene | • 1,1,1-trichloroethane |
| • trichlorofluoromethane | |

Analytical results for these wells are summarized in Tables 3, 4, 5, and 8.

4 Ground Water Extraction System

The six inch extraction well RW-1 has been actively removing ground water since August 24, 1992. Based on totalizer readings collected by Burlington, the rate of ground water extraction is approximately 110 gallons per day. Between August 24, 1992, and February 19, 1993, the extraction system was operational for 180 days.

Approximately 19,800 gallons of ground water have been extracted since start up of the extraction system.

5 Well Replacement and Abandonment

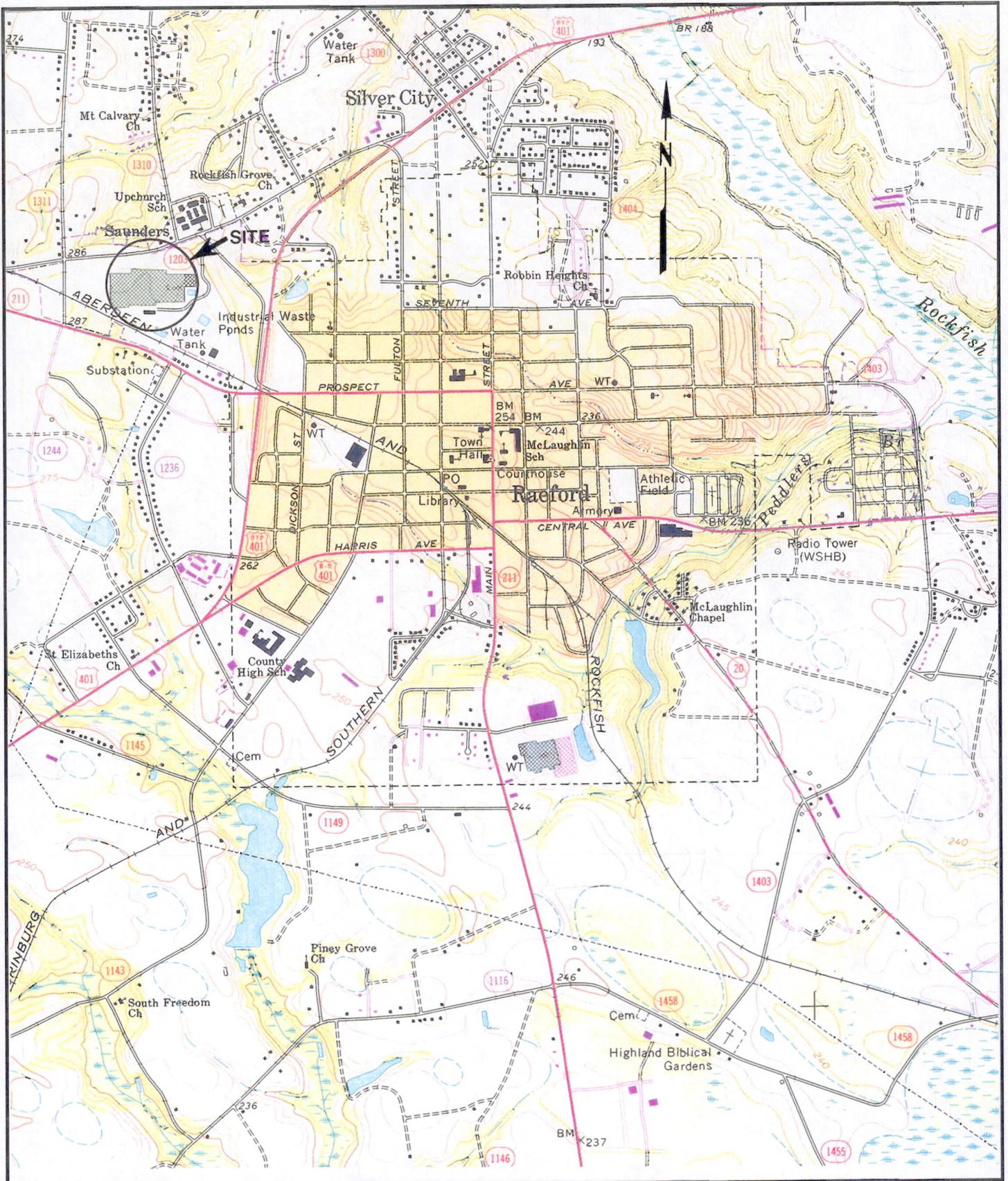
On August 24, 1992, an Aquaterra geologist discovered that monitoring wells MW-5s and MW-5i had been damaged by construction work at the site. An Aquaterra geologist returned to the site on January 4, 1993, to supervise both the abandonment of the damaged well MW-5s and the installation of a new well. The casing and screen were drilled out of the damaged well MW-5s and the void space was filled with portland cement. A replacement well designated MW-5s was then installed near the location of the former MW-5s. Repairs were also made to the concrete surrounding the manhole cover of well MW-5i. The well construction record for the new well MW-5s and the well abandonment form for the former well MW-5s are included in Attachment B.

6 Conclusions

Burlington has conducted October 1992 ground water sampling at the Burlington Industries site located in Raeford, North Carolina. Based on the field activities, the static water level data, and the laboratory analytical results, Aquaterra concludes the following:

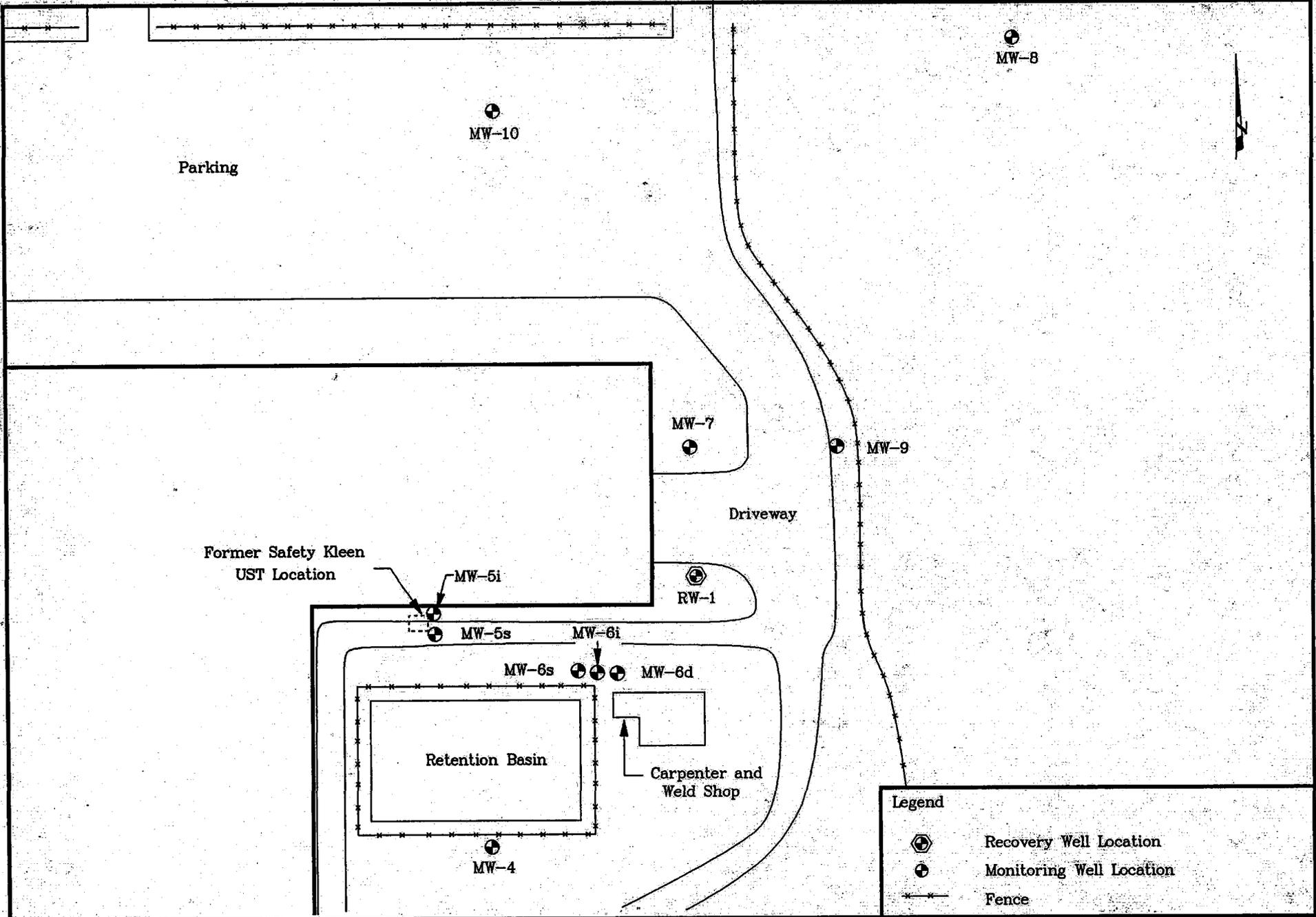
- Concentrations of PHs have increased in wells MW-6i and MW-6d in comparison to analytical results from the previous ground water sampling event.
- Concentrations of PHs have decreased significantly in wells MW-5i and MW-9 in comparison to results from the previous sampling event.
- Based on the October 1992 data presented, wells MW-5i, MW-6i, MW-6d, and MW-9 contained PHs above North Carolina 2L ground water standards.
- The shallow ground water contour map for February 1993 (see Figure 3) indicates a cone of depression in the area of extraction well RW-1.





AQUATERRA, INC.
 Raleigh, Greensboro, Charlotte
 NORTH CAROLINA

Author LSG	Drawing 467	Layers 0,1	Date 2-10-93	Title Site Location Map
Job No. 467	Revision 0	Figure 1	Scale 1" = 2000'	Project Burlington Industries, Inc. Raeford, North Carolina

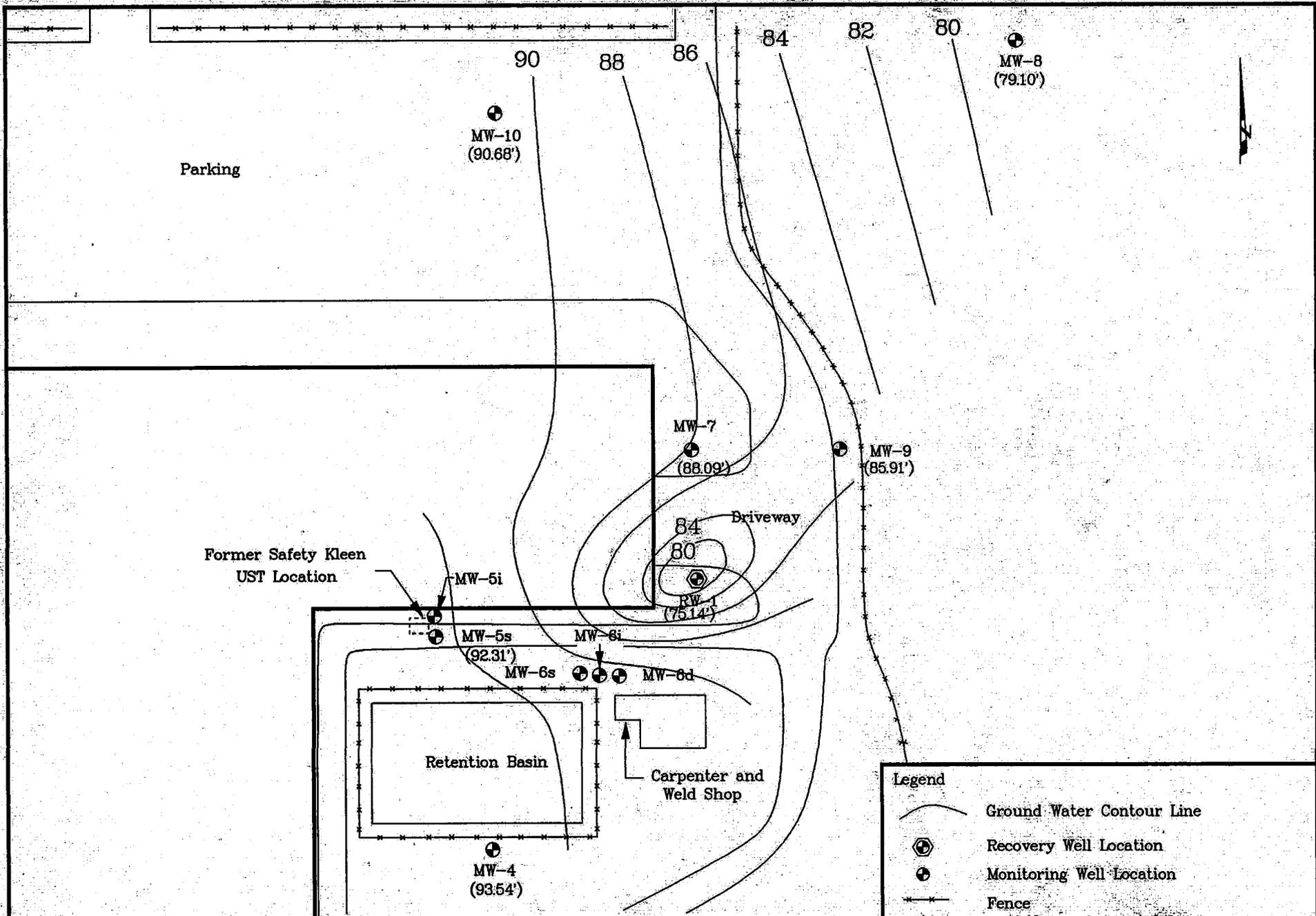


Legend	
	Recovery Well Location
	Monitoring Well Location
	Fence



AQUATERRA, INC.
 Raleigh, Greensboro, Charlotte
 NORTH CAROLINA

<i>Author</i> LSG	<i>Drawing</i> 467-2	<i>Layers</i> 01.2	<i>Date</i> 03-16-92	<i>Title</i> Monitoring Well Location Map
<i>Job No.</i> 467	<i>Revision</i> 3-10-93	<i>Figure</i> 2	<i>Scale</i> 1" = 100'	<i>Project</i> Burlington Industries, Inc. Raeford, North Carolina



Legend	
	Ground Water Contour Line
	Recovery Well Location
	Monitoring Well Location
	Fence

 AQUATERRA, INC. Raleigh, Greensboro, Charlotte NORTH CAROLINA	Author	Drawing	Layers	Date	Title Ground Water Contour Map February 19, 1993
	LSG	487-2	0,1,3	03-16-92	
	Job No.	Revision	Figure	Scale	Project Burlington Industries, Inc. Raeford, North Carolina
	487	3-10-93	3	1" = 100'	

Table 1. February 19, 1993 Static Water Level Elevation Data for Burlington Industries, Inc., Raeford, North Carolina, .

Well No.	TOCE (ft.)	DTW (ft.)	SWLE (ft.)
MW-4	99.35	5.81	93.54
MW-5s	100.23	7.92	92.31
MW-5i	100.41	21.69	78.72
MWR-6s	99.26	7.85	91.41
MW-6i	99.40	22.44	76.96
MW-6d	99.40	50.58	48.82
MW-7	99.98	11.89	88.09
MW-8	87.52	8.42	79.10
MW-9	96.32	10.41	85.91
MW-10	98.22	7.54	90.68
RW-1	98.79	23.65	75.14

DTW Depth to water below top of casing
SWLE Static water level elevation
TOCE Top of casing relative elevation

Aquaterra Job Number 2146700
R1986-93

Table 2. Monitoring Well MW-5s - Purgeable Halocarbons, Laboratory Analytical Results for Burlington Industries Inc., Raeford, North Carolina, 1991 - 1992.

Parameter	7-12-91 ($\mu\text{g/L}$)	North Carolina Ground Water Standard ($\mu\text{g/L}$)
Bromodichloromethane	NA	LQL
Carbon Tetrachloride	NA	0.3
Chlorobenzene	BQL	300
Chloroform	NA	0.19
Chloromethane	NA	LQL
1,1-Dichloroethane	NA	LQL
1,1-Dichloroethene	NA	7
1,2-Dichloroethane	NA	0.38
Methylene Chloride	NA	5
cis-1,2-Dichloroethene	NA	70
1,1,1-Trichloroethane	NA	200
Trichloroethene	NA	2.8
Trichlorofluormethane	NA	LQL
Tetrachloroethene	NA	0.7
1,2-Dichlorobenzene	1	LQL
1,3-Dichlorobenzene	2	LQL
1,4-Dichlorobenzene	1	LQL
Toluene	BQL	1000
Xylenes	BQL	400
PHs	4	

All units in $\mu\text{g/L}$

PHs Purgable halocarbons

NA Not analyzed

LQL Not allowed in ground water above laboratory quantitation limit (NCAC T15:02L.0202).

BQL Below the Laboratory Quantitation Limit

*Analytical Laboratory: Hydrologic, Inc.
Frankfort, Kentucky*

R1986-93

Aquaterra Job Number 2146700

Table 3. Monitoring Well MW-5i - Purgeable Halocarbons, Laboratory Analytical Results for Burlington Industries Inc., Raeford, North Carolina, 1991 - 1992.

Parameter	7-12-91 ($\mu\text{g/L}$)	10-31-91 ($\mu\text{g/L}$)	10-23-92 ($\mu\text{g/L}$)	North Carolina Ground Water Standard ($\mu\text{g/L}$)
Bromodichloromethane	1	BQL	BQL	LQL
Carbon Tetrachloride	BQL	2	1	0.3
Chlorobenzene	BQL	2	BQL	300
Chloroform	5	2	2	0.19
Chloromethane	BQL	BQL	BQL	LQL
1,1-Dichloroethane	7	21	14	LQL
1,1-Dichloroethene	15	32	29	7
1,2-Dichloroethane	BQL	BQL	BQL	0.38
Methylene Chloride	BQL	BQL	1	5
cis-1,2-Dichloroethene	NA	BQL	BQL	70
1,1,1-Trichloroethane	BQL	BQL	BQL	200
Trichloroethene	BQL	BQL	BQL	2.8
Trichlorofluoromethane	BQL	BQL	BQL	LQL
Tetrachloroethene	BQL	BQL	1	0.7
1,2-Dichlorobenzene	BQL	1	BQL	LQL
1,3-Dichlorobenzene	BQL	BQL	BQL	LQL
1,4-Dichlorobenzene	BQL	BQL	BQL	LQL
Toluene	NA	NA	NA	1000
Xylenes	NA	NA	NA	400
PHs	28	60	48	

All units in $\mu\text{g/L}$

PHs Purgable halocarbons

NA Not analyzed

LQL Not allowed in ground water above laboratory quantitation limit (NCAC T15:02L.0202).

BQL Below the Laboratory Quantitation Limit

Analytical Laboratory: Hydrologic, Inc.
Frankfort, Kentucky

R1986-93

Aquaterra Job Number 2146700

Table 4. Monitoring Well MW-6i - Purgeable Halocarbons, Laboratory Analytical Results for Burlington Industries Inc., Raeford, North Carolina, 1991 - 1992.

Parameter	7-12-91 ($\mu\text{g/L}$)	10-31-91 ($\mu\text{g/L}$)	10-23-92 ($\mu\text{g/L}$)	North Carolina Ground Water Standard ($\mu\text{g/L}$)
Bromodichloromethane	BQL	BQL	BQL	LQL
Carbon Tetrachloride	BQL	BQL	BQL	0.3
Chlorobenzene	30	13	28	300
Chloroform	BQL	1	BQL	0.19
Chloromethane	2	BQL	BQL	LQL
1,1-Dichloroethane	2	BQL	15	LQL
1,1-Dichloroethene	2	18	19	7
1,2-Dichloroethane	BQL	BQL	2	0.38
Methylene Chloride	BQL	BQL	BQL	5
cis-1,2-Dichloroethene	NA	BQL	BQL	70
1,1,1-Trichloroethane	1	BQL	BQL	200
Trichloroethene	BQL	BQL	BQL	2.8
Trichlorofluoromethane	BQL	BQL	BQL	LQL
Tetrachloroethene	BQL	1	1	0.7
1,2-Dichlorobenzene	5	13	16	LQL
1,3-Dichlorobenzene	1	BQL	2	LQL
1,4-Dichlorobenzene	9	17	22	LQL
Toluene	NA	NA	NA	1000
Xylenes	NA	NA	NA	400
PHs	52	63	105	

All units in $\mu\text{g/L}$

PHs Purgable halocarbons

NA Not analyzed

LQL Not allowed in ground water above laboratory quantitation limit (NCAC T15:02L.0202).

BQL Below the Laboratory Quantitation Limit

Analytical Laboratory: Hydrologic, Inc.
Frankfort, Kentucky

R1986-93

Aquaterra Job Number 2146700

Table 5. Monitoring Well MW-6d - Purgeable Halocarbons, Laboratory Analytical Results for Burlington Industries Inc., Raeford, North Carolina, 1991-1992.

Parameter	1-16-92 ($\mu\text{g/L}$)	2-13-92 ($\mu\text{g/L}$)	10-23-92 ($\mu\text{g/L}$)	North Carolina Ground Water Standard ($\mu\text{g/L}$)
Bromodichloromethane	BQL	BQL	BQL	LQL
Carbon Tetrachloride	9.9	13	17	0.3
Chlorobenzene	BQL	BQL	BQL	300
Chloroform	1.42	BQL	BQL	0.19
Chloromethane	BQL	BQL	BQL	LQL
1,1-Dichloroethane	4.5	7	4	LQL
1,1-Dichloroethene	4.7	7	9	7
1,2-Dichloroethane	BQL	BQL	2	0.38
Methylene Chloride	BQL	BQL	BQL	5
cis-1,2-Dichloroethene	BQL	BQL	BQL	70
1,1,1-Trichloroethane	1.4	2	3	200
Trichloroethene	BQL	BQL	BQL	2.8
Trichlorofluoromethane	BQL	BQL	1	LQL
Tetrachloroethene	BQL	1	BQL	0.7
1,2-Dichlorobenzene	BQL	BQL	BQL	LQL
1,3-Dichlorobenzene	BQL	BQL	BQL	LQL
1,4-Dichlorobenzene	BQL	2	BQL	LQL
Toluene	NA	NA	NA	1000
Xylenes	NA	NA	NA	400
PHs	21.92	32	36	

All units in $\mu\text{g/L}$

PHs Purgable halocarbons

NA Not analyzed

LQL Not allowed in ground water above laboratory quantitation limit (NCAC T15:02L.0202).

BQL Below the Laboratory Quantitation Limit

Analytical Laboratory: Hydrologic, Inc.
Frankfort, Kentucky

R1986-93

Aquaterra Job Number 2146700

Table 6. Monitoring Well MW-7 - Purgeable Halocarbons, Laboratory Analytical Results for Burlington Industries, Inc., Raeford, North Carolina, 1991 - 1992.

Parameter ($\mu\text{g/L}$)	7-12-91 ($\mu\text{g/L}$)	10-31-91 ($\mu\text{g/L}$)	North Carolina Ground Water Standard ($\mu\text{g/L}$)
Bromodichloromethane	BQL	BQL	LQL
Carbon Tetrachloride	BQL	BQL	0.3
Chlorobenzene	90	43	300
Chloroform	BQL	BQL	0.19
Chloromethane	BQL	BQL	LQL
1,1-Dichloroethane	5	4	LQL
1,1-Dichloroethene	BQL	BQL	7
1,2-Dichloroethane	BQL	BQL	0.38
Methylene Chloride	BQL	3	5
cis-1,2-Dichloroethene	NA	BQL	70
1,1,1-Trichloroethane	BQL	BQL	200
Trichloroethene	BQL	BQL	2.8
Trichlorofluormethane	BQL	BQL	LQL
Tetrachloroethene	BQL	BQL	0.7
1,2-Dichlorobenzene	2	1	LQL
1,3-Dichlorobenzene	18	2	LQL
1,4-Dichlorobenzene	BQL	7	LQL
Toluene	NA	NA	1000
Xylenes	NA	NA	400
PHs	115	60	

All units in $\mu\text{g/L}$

PHs Purgable halocarbons

NA Not analyzed

LQL Not allowed in ground water above laboratory quantitation limit (NCAC T15:02L.0202).

BQL Below the Laboratory Quantitation Limit

Analytical Laboratory: Hydrologic, Inc.
Frankfort, Kentucky

R1986-93

Aquaterra Job Number 30

Table 7. Monitoring Well MW-8 - Purgeable Halocarbons, Laboratory Analytical Results for Burlington Industries, Inc., Raeford, North Carolina, 1991-1992.

Parameter	1-16-92 ($\mu\text{g/L}$)	North Carolina Ground Water Standard ($\mu\text{g/L}$)
Bromodichloromethane	BQL	LQL
Carbon Tetrachloride	BQL	0.3
Chlorobenzene	BQL	300
Chloroform	BQL	0.19
Chloromethane	BQL	LQL
1,1-Dichloroethane	BQL	LQL
1,1-Dichloroethene	BQL	7
1,2-Dichloroethane	BQL	0.38
Methylene Chloride	BQL	5
cis-1,2-Dichloroethene	BQL	70
1,1,1-Trichloroethane	BQL	200
Trichloroethene	BQL	2.8
Trichlorofluoromethane	BQL	LQL
Tetrachloroethene	BQL	0.7
1,2-Dichlorobenzene	BQL	LQL
1,3-Dichlorobenzene	BQL	LQL
1,4-Dichlorobenzene	BQL	LQL
Toluene	NA	1000
Xylenes	NA	400
PHs	BQL	

All units in $\mu\text{g/L}$

PHs Purgable halocarbons

NA Not analyzed

LQL Not allowed in ground water above laboratory quantitation limit (NCAC T15:02L.0202).

BQL Below the Laboratory Quantitation Limit

*Analytical Laboratory: Hydrologic, Inc.
Frankfort, Kentucky*

R1986-93

Aquaterra Job Number 2146700

Table 8. Monitoring Well MW-9 - Purgeable Halocarbons, Laboratory Analytical Results for Burlington Industries Inc., Raeford, North Carolina, 1991 - 1992.

Parameter	1-16-92 ($\mu\text{g/L}$)	2-13-92 ($\mu\text{g/L}$)	10-23-92 ($\mu\text{g/L}$)	North Carolina Ground Water Standard ($\mu\text{g/L}$)
Bromodichloromethane	BQL	BQL	BQL	LQL
Carbon Tetrachloride	BQL	BQL	BQL	0.3
Chlorobenzene	22.1	51	16	300
Chloroform	BQL	BQL	BQL	0.19
Chloromethane	BQL	BQL	BQL	LQL
1,1-Dichloroethane	2.64	4	2	LQL
1,1-Dichloroethene	0.8	1	BQL	7
1,2-Dichloroethane	BQL	BQL	BQL	0.38
Methylene Chloride	BQL	BQL	BQL	5
cis-1,2-Dichloroethene	BQL	2	BQL	70
1,1,1-Trichloroethane	BQL	BQL	BQL	200
Trichloroethene	1.1	2	BQL	2.8
Trichlorofluoromethane	BQL	BQL	BQL	LQL
Tetrachloroethene	2.36	3	2	0.7
1,2-Dichlorobenzene	BQL	1	BQL	LQL
1,3-Dichlorobenzene	0.74	2	1	LQL
1,4-Dichlorobenzene	6.15	15	6	LQL
Toluene	NA	NA	NA	1000
Xylenes	NA	NA	NA	400
PHs	35.89	81	27	

All units in $\mu\text{g/L}$

PHs Purgable halocarbons

NA Not analyzed

LQL Not allowed in ground water above laboratory quantitation limit (NCAC T15:02L.0202).

BQL Below the Laboratory Quantitation Limit

Analytical Laboratory: Hydrologic, Inc.
Frankfort, Kentucky

RI986-93

Aquaterra Job Number 2146700

Table 9. Monitoring Well MW-10 - Purgeable Halocarbons, Laboratory Analytical Results for Burlington Industries, Inc., Raeford, North Carolina, 1991-1992.

Parameter	1-16-92 ($\mu\text{g/L}$)	North Carolina Ground Water Standard ($\mu\text{g/L}$)
Bromodichloromethane	BQL	LQL
Carbon Tetrachloride	BQL	0.3
Chlorobenzene	BQL	300
Chloroform	BQL	0.19
Chloromethane	BQL	LQL
1,1-Dichloroethane	BQL	LQL
1,1-Dichloroethene	BQL	7
1,2-Dichloroethane	BQL	0.38
Methylene Chloride	BQL	5
cis-1,2-Dichloroethene	BQL	70
1,1,1-Trichloroethane	BQL	200
Trichloroethene	BQL	2.8
Trichlorofluormethane	BQL	LQL
Tetrachloroethene	BQL	0.7
1,2-Dichlorobenzene	BQL	LQL
1,3-Dichlorobenzene	BQL	LQL
1,4-Dichlorobenzene	BQL	LQL
Toluene	NA	1000
Xylenes	NA	400
PHs	BQL	

All units in $\mu\text{g/L}$

PHs Purgable halocarbons

NA Not analyzed

LQL Not allowed in ground water above laboratory quantitation limit (NCAC T15:02L.0202).

BQL Below the Laboratory Quantitation Limit

Analytical Laboratory: Hydrologic, Inc.
Frankfort, Kentucky

R1986-93

Aquaterra Job Number 2146700



IEA

An Aquarion Company

An Environmental Testing Company
Post Office Box 12846
Research Triangle Park, NC 27709

Phone 919-677-0090
Fax 919-677-0427

November 16, 1992

Mike Garlick
Burlington Industries
P.O. Box 788
Clarksville, VA 23927

IEA Project No.: 1264011
IEA Reference No.: W9209526
Client Project I.D.: Raeford, NC Site

Dear Mr. Garlick,

Transmitted herewith are the results of analyses on five samples submitted to our laboratory.

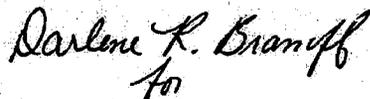
The sample(s) were received chilled and intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Please do not hesitate to call your Client Account Representative should you have any questions regarding this report.

Very truly yours,

IEA, Inc.



Linda F. Mitchell
Director, Technical Support Services

State Certification:

Georgia - #816

New Jersey - #67719

California - #1768

Massachusetts - NC039

Tennessee - #00296

Virginia - #00179

West Virginia - #50

Kentucky - #90049

Alabama - #40210

South Carolina - #99021

North Carolina - #37720/#84

Kansas - E-158/E-1189

Monroe,
Connecticut
203-261-4458

Sunrise,
Florida
305-846-1730

Schaumburg,
Illinois
708-705-0740

N. Billerica,
Massachusetts
617-272-5212

Whippany,
New Jersey
201-428-8181

Essex Junction,
Vermont
802-878-5138



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**PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST**

IEA Sample Number:	1264-011-1	Date Received:	10/26/92
Client Name:	Burlington Ind.	Date Sampled:	10/23/92
Client Project ID:	Raeferd, NC site	Date Analyzed:	10/30/92
Sample Identification:	MW-5I	Analysis By:	Ware
Matrix:	Water	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	1
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	29
9	1,1-Dichloroethane	1.0	14
10	trans-1,2-Dichloroethene	1.0	BQL
11	Chloroform	1.0	2
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	BQL
14	Carbon tetrachloride	1.0	1
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	1
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

**PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST**

IEA Sample Number:	1264-011-2	Date Received:	10/26/92
Client Name:	Burlington Ind.	Date Sampled:	10/23/92
Client Project ID:	Raeferd, NC site	Date Analyzed:	10/30/92
Sample Identification:	MW-6I	Analysis By:	Ware
Matrix:	Water	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	19
9	1,1-Dichloroethane	1.0	15
10	trans-1,2-Dichloroethene	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	2
13	1,1,1-Trichloroethane	1.0	BQL
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	1
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	28
27	1,3-Dichlorobenzene	1.0	2
28	1,2-Dichlorobenzene	1.0	16
29	1,4-Dichlorobenzene	1.0	22

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

**PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST**

IEA Sample Number:	1264-011-3	Date Received:	10/26/92
Client Name:	Burlington Ind.	Date Sampled:	10/23/92
Client Project ID:	Raeferd, NC site	Date Analyzed:	10/28/92
Sample Identification:	MW-6D	Analysis By:	Russell
Matrix:	Water	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	
8	1,1-Dichloroethene	1.0	1
9	1,1-Dichloroethane	1.0	9
10	trans-1,2-Dichloroethene	1.0	4
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	2
14	Carbon tetrachloride	1.0	3
15	Bromodichloromethane	1.0	17
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

**PURGEABLE HALOCARBONS
 EPA 601 COMPOUND LIST**

IEA Sample Number:	1264-011-5	Date Received:	10/26/92
Client Name:	Burlington Ind.	Date Sampled:	10/23/92
Client Project ID:	Raeford, NC site	Date Analyzed:	10/30/92
Sample Identification:	Trip Blank	Analysis By:	Ledet
Matrix:	Water	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	1
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	trans-1,2-Dichloroethene	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	BQL
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit



IEA

An Aquarion Company

PURGEABLE HALOCARBONS EPA 601 COMPOUND LIST

IEA Sample Number:	1264-011-4	Date Received:	10/26/92
Client Name:	Burlington Ind.	Date Sampled:	10/23/92
Client Project ID:	Raeform, NC site	Date Analyzed:	10/30/92
Sample Identification:	MW-9	Analysis By:	Ware
Matrix:	Water	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	2
10	trans-1,2-Dichloroethene	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	BQL
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	2
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	16
27	1,3-Dichlorobenzene	1.0	1
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	6

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number:	1264-011	Date Received:	N/A
Client Name:	Burlington Ind.	Date Sampled:	N/A
Client Project ID:	Raeord, NC site	Date Analyzed:	10/29/92
Sample Identification:	QC Blank	Analysis By:	Russell
Matrix:	Water	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	trans-1,2-Dichloroethene	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	BQL
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

N/A = Not Applicable

Corresponding Samples: 1264-011-1, 2, 4, 5

**PURGEABLE HALOCARBONS
 EPA 601 COMPOUND LIST**

IEA Sample Number:	1264-011	Date Received:	N/A
Client Name:	Burlington Ind.	Date Sampled:	N/A
Client Project ID:	Raeferd, NC site	Date Analyzed:	10/26/92
Sample Identification:	QC Blank	Analysis By:	Ware
Matrix:	Water	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	trans-1,2-Dichloroethene	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	BQL
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

N/A = Not Applicable

Corresponding Samples: 1264-011-3

North Carolina
 Department of Natural Resources and Community Development
 Division of Environmental Management
 P.O. Box 27687 - Raleigh, N.C. 27611

WELL ABANDONMENT
 RECORD

CONTRACTOR Groundwater Protection Inc.

REG. NO. 1105

1. WELL LOCATION: (Show a sketch of the location on back of form.)

Nearest Town: Raefford, NC

County Hoke

Quadrangle No. _____

(Road, Community, Subdivision, Lot No.)

2. OWNER: _____

3. ADDRESS: _____

4. TOPOGRAPHY: draw, slope, hilltop, valley, flat

5. USE OF WELL: Monitoring DATE: 01-04-93

6. TOTAL DEPTH: 15.0' DIAMETER: 2"

7. CASING REMOVED:

feet	diameter
<u>15.0'</u>	<u>2"</u>

8. SEALING MATERIAL:

<u>Neat cement</u>	<u>Sand cement</u>
bags of cement <u>1</u>	bags of cement _____
gals. of water <u>11</u>	yds. of sand _____
	gals. of water _____

Other
 Type material _____
 Amount _____

9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL

Gravity fed into open hole

I do hereby certify that this well
 abandonment record is true and exact.

Signature of Contractor or Agent _____ Date _____

WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill material used.

