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12-18-1998

HSI GEOTRANS
A TETRA TECH COMPANY

175 N. Corporate Drive
Suite 100
Brookfield, Wisconsin
53045

414-792-1282 FAX 414-792-1310

December 16, 1998
(N734/101)

Mr. Dave Carper, Engineer
Wisconsin Department of Natural Resources
RR/3
P.O. Box 7921
Madison, WI 53707-7921

RE: 1998 Semi-annual Progress Report, FF/NN Landfill, Ripon, Wisconsin

Dear Mr. Carper:

Enclosed please find one copy of the Semi-Annual Status Report for the Remedial Action work at the FF/NN Landfill in Ripon, Wisconsin. Should you have any questions or comments, please do not hesitate to call.

Sincerely,

HSI GEOTRANS, INC.

Judy L. Fassbender
Senior Hydrogeologist

JLF:gf
Enc.

cc: Raymond M. Roder, Reinhart, Boerner, Van Deuren, Norris, Rieselbach, S.C. (1 copy)
Jane Lemke/Environmental Response and Repair Section (SW/3), WDNR (1 copy)
Phil Hoopman, City of Ripon, Department of Public Works (1 copy)
Nelson Olavarria - Cooper Industries (1 copy)

CONTRACT SF-92-01

SEMI-ANNUAL STATUS REPORT

July through December 1998

SITE NAME/ACTIVITY:

FF/NN Landfill
Ripon, Wisconsin
Remedial Action

File Ref. No.: 02-20-000915

PREPARED BY:

Mr. Raymond M. Roder
Reinhart, Boerner, Van Deuren, Norris
& Rieselbach, S.C.
22 E. Mifflin Street, Suite 600
Madison, Wisconsin 53701-2020

Ms. Judy Fassbender
HSI GeoTrans, Inc.
175 N. Corporate Drive, Suite 100
Brookfield, Wisconsin 53045

PREPARED FOR:

Ms. Jane Lemke
Standards Team Leader
Environmental Repair and
Response Section (SW/3)
Wisconsin Department of
Natural Resources
P.O. Box 7921
Madison, Wisconsin 53707 (1 copy)

Mr. Dave Carper
Engineer
Bureau of Remediation and Redevelopment
RR/3
Wisconsin Department of Natural
Resources
P.O. Box 7921
Madison, Wisconsin 53707 (1 copy)

DATE:

December 1998

PERIOD:

July 1 - December 10, 1998

PROGRESS MADE THIS REPORTING PERIOD:

- Groundwater and leachate samples were collected on October 13 and 14, 1998.
- The analytical results from the sampling of four private wells located near the landfill were sent to the respective homeowners.
- Four monitor wells (MW-102, P-103, P-104, and MW-108) were removed from the semi-annual sampling program as approved by the WDNR in May.

DATA TRANSMITTED WITH REPORT:

- Groundwater Volatile Organic Compound (VOC) Sampling Results Summary Table.
- A site map showing the locations of the wells and closed landfill.

ANTICIPATED PROBLEMS AND RECOMMENDED SOLUTIONS:

- During the October sampling event, MW-107, a water table well located south of the landfill, did not contain sufficient water to permit sample collection. The water level in this well was lower as compared to prior years. The VOC concentrations in wells that were sampled did not vary significantly from previous results. The wells will be sampled in the Spring of 1999 provided that adequate water is available in the wells.

DOCUMENTS SUBMITTED:

- Groundwater monitor well data and private well data were submitted to the WDNR in disk format, as requested.

UPCOMING ACTIVITIES PLANNED:

- The next semi-annual groundwater and landfill gas sampling will be conducted in April 1999.

PERSONNEL/SUBCONTRACTORS:

- Judy Fassbender coordinates the groundwater monitoring activities. Todd Thomson and David Conner conducted the field sampling. The laboratory analyses were completed by NET in Watertown, Wisconsin.

CONCLUSIONS:

Only slight variations in VOC concentrations in groundwater have been noted since the construction of the composite cap over the landfill was completed in August 1996. A slight increase in VOC concentration was noted at MW-104 during the Spring 1998 sampling event. Reduced dilution of leachate in the landfill resulting from reduced percolation through the cap may be the source of the VOC increase at MW-104. This well is constructed through the fill material and is expected to be a good indicator in evaluating the cap's effectiveness, in addressing groundwater impacts over time. The Fall 1998 sampling results indicated VOC concentrations returning to levels measured prior to Spring 1998 at MW-104. Slight decreases of VOCs were also noted at MW-103, P-107, and P-107D. The lowest vinyl chloride concentrations to date (45 ppb) were measured at MW-103. Previous vinyl chloride levels ranged from 75 to 440 ppb at this location. Vinyl chloride and cis-1,2-dichloroethene concentrations increased slightly from previous measurements at MW-112 to 25 and 80 ppb, respectively. No VOC constituents of concern were detected in the off-site four residential well samples, except for methylene chloride, a laboratory artifact.

Table 3. Groundwater VOC Sampling Results

Sampling Point:	MW-101								P-101		WDNR NR140	
Collection Date:	10/15/93	4/19/94	5/8/96	10/30/96	5/12/97	10/26/97	4/13/98*	10/13/98	10/15/93	4/19/94	PAL	ES
PARAMETER												
Chloromethane				0.89 J							0.3	3
Vinyl Chloride											0.02	0.2
cis-1,2-dichloroethene											7	70
Toluene										0.5J	68.6	343
Benzene											0.5	5
Chlorobenzene											20	100
1,4-dichlorobenzene											15	75
Trichloroethene											0.5	5
Tetrachloroethene	0.7 J	0.6J	0.6J	0.72 J		0.70					0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected
* Not available due to inadequate water for sample collection

Sampling Point:	MW-102							P-102		WDNR NR140	
Collection Date:	10/26/93	4/11/94	5/8/96	10/30/96	5/12/97	10/26/97	4/13/98	10/26/93	4/11/94	PAL	ES
PARAMETER											
Chloromethane				0.99 J						0.3	3
Vinyl Chloride										0.02	0.2
cis-1,2-dichloroethene							0.46			7	70
Toluene		3	0.4J							68.6	343
Benzene										0.5	5
Chlorobenzene										20	100
1,4-dichlorobenzene										15	75
Trichloroethene										0.5	5
Tetrachloroethene				0.30 J						0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

MW-102 was removed from the monitoring program in May 1998.

Sampling Point:	MW-103										WDNR NR140	
Collection Date:	10/27/93	4/11/94	4/11/94 DUP	5/9/96	5/9/96 DUP	10/30/96	5/13/97	10/26/97	4/13/98*	10/13/98	PAL	ES
PARAMETER												
Chloromethane					9J	1.1					0.3	3
Vinyl Chloride	75	440	410	170	180	98 E	230	220J		45	0.02	0.2
Chloroethane						1.9	2.7	2.4			80	400
1,1-Dichloroethane						.99 J	1.2	0.89			85	850
1,1-Dichloroethene						0.30 J	0.75				0.7	7
cis-1,2-dichloroethene	410	1100	970	740	840	520 E	790	550J		260	7	70
trans-1,2-Dichloroethene				9J	10J	5	4.7	5.2		3.3	20	100
1,2-dichloropropane						1.9	1.6	1.5			0.5	5
Benzene						3.3	4.3	4.2		2.0	0.5	5
Chlorobenzene				7J	8J	8.1 J	8.5	7.9		5.7	20	100
1,4-dichlorobenzene						0.76 J	0.98	1.4			15	75
Trichloroethene				10J	11J	4.7	5.6	6.6		5.8	0.5	5
Tetrachloroethene											0.5	5
1,2-dichloroethane							0.52	0.38			0.5	5
MTBE							0.27	0.38			12	60
DisIsopropyl Ether								0.57			NS	NS
Tetrahydrofuran								3.1			10	50

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected
* Not available due to inadequate water for sample collection

Sampling Point:	P-103							WDNR NR140	
Collection Date:	10/27/93	4/12/94	5/9/96	10/31/96	5/13/97	10/27/97	4/13/98	PAL	ES
PARAMETER									
Chloromethane				0.84 J				0.3	3
Vinyl Chloride			0.1J					0.02	0.2
Chloroethane								80	400
1,1-Dichloroethane								85	850
cis-1,2-dichloroethene			0.1J					7	70
trans-1,2-Dichloroethene								20	100
Toluene			0.1J					68.6	343
Benzene								0.5	5
Chlorobenzene								20	100
1,4-dichlorobenzene								15	75
Trichloroethene								0.5	5
Tetrachloroethene								0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

P-103 was removed from the monitoring program in May 1998.

Table 3. Groundwater VOC Sampling Results

Sampling Point:	MW-104								WDNR NR140	
Collection Date:	10/27/93	4/19/94	5/9/96	10/30/96	5/12/97	10/27/97	4/13/98	10/13/98	PAL	ES
PARAMETER										
Chloromethane			0.3J	0.46 J					0.3	3
Vinyl Chloride		6	10	4.3	4.5	18	17	15	0.02	0.2
Chloroethane			1	0.34 J	1.5				80	400
1,1-Dichloroethane			0.2 J						85	850
cis-1,2-dichloroethene	1 JB	10	6	3.6	1.1	7.3	74	3.3	7	70
trans-1,2-Dichloroethene			0.3 J	0.22 J			0.67		20	100
Toluene	31		0.2 J				0.46		68.6	343
Benzene	2	1	6	0.64 J	4.8	0.63	1.2	1.7	0.5	5
Chlorobenzene	2	1	5	1.1	4.5	1.3			20	100
Ethylbenzene			0.1J	0.80 J					140	700
1,4-dichlorobenzene	2	1			0.91	0.85		0.76	15	75
Trichloroethene		0.83	0.5J	0.31 J			3.5		0.5	5
Tetrachloroethene									0.5	5
Total Xylenes				0.77 J				4.1	124	620
MTBE					0.32				12	60

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

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Sampling Point:	P-104							WDNR NR140	
Collection Date:	10/27/94	4/19/94	5/9/96	10/30/96	5/12/97	10/27/97	4/13/98	PAL	ES
PARAMETER									
Chloromethane				0.20 J				0.3	3
Vinyl Chloride								0.02	0.2
Chloroethane								80	400
1,1-Dichloroethane								85	850
cis-1,2-dichloroethene								7	70
trans-1,2-Dichloroethene								20	100
Toluene								68.6	343
Benzene								0.5	5
Chlorobenzene								20	100
Ethylbenzene								140	700
1,4-dichlorobenzene								15	75
Trichloroethene								0.5	5
Tetrachloroethene								0.5	5
Total Xylenes								124	620
MTBE								12	60

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

P-104 was removed from the monitoring program in May 1998.

Table 3. Groundwater VOC Sampling Results

Sampling Point:	MW-105		P-105		WDNR NR140	
Collection Date:	10/26/93	4/13/94	10/26/94	4/13/94	PAL	ES
PARAMETER						
Vinyl Chloride					0.02	0.2
cis-1,2-dichloroethene					7	70
Toluene					68.6	343
Benzene					0.5	5
Chlorobenzene					20	100
1,4-dichlorobenzene					15	75
Trichloroethene					0.5	5
Tetrachloroethene					0.5	5
TOTAL VOCs	ND	ND	ND	ND		

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-106		P-106								WDNR NR140	
Collection Date:	10/26/93	4/19/94	10/26/93	4/19/94	5/8/96	10/31/96	5/12/97	10/26/97	4/13/98	10/13/98	PAL	ES
PARAMETER												
Vinyl Chloride											0.02	0.2
Chloromethane						0.62 J					0.3	3
cis-1,2-dichloroethene					0.2 J						7	70
Toluene		11									68.6	343
Benzene											0.5	5
Chlorobenzene											20	100
1,4-dichlorobenzene											15	75
Trichloroethene			0.6 J	0.8 J	0.8 J	0.22 J	0.65	0.67	0.61	0.71	0.5	5
Tetrachloroethene											0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-107								WDNR NR140	
Collection Date:	10/27/93	4/12/94	5/9/96	10/21/96	5/13/97	10/27/97	4/14/98	10/13/98*	PAL	ES
PARAMETER										
Chloromethane				0.80 J					0.3	3
Vinyl Chloride									0.02	0.2
Chloroethane									80	400
cis-1,2-dichloroethene									7	70
Toluene									68.6	343
Benzene									0.5	5
Chlorobenzene									20	100
1,4-dichlorobenzene									15	75
Trichloroethene	2	2	2	2.2	2.6	2.0	2.1		0.5	5
Tetrachloroethene									0.5	5
Dichlorodifluoromethane					0.9	0.7			200	1000

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected
* Not available due to inadequate water for sample collection.

Sampling Point:	P-107														WDNR NR140	
Collection Date:	10/27/93	4/12/94	4/12/94 DUP	5/9/96	10/23/96	10/23/96 DUP	5/14/97	5/14/97 DUP	10/27/97	10/27/97 DUP	4/14/98	4/14/98 DUP	10/14/98	10/14/98 DUP	PAL	ES
PARAMETER																
Chloromethane					0.79 J	0.49 J									0.3	3
Vinyl Chloride	6	3	3	2	2.3	2.7	2.0	1.7	2.6	2.3	2.2	2.4	1.5	1.7	0.02	0.2
Chloroethane				0.2 J	0.19	0.21									80	400
cis-1,2-dichloroethene	4	2	2	2	1.9	2.1	1.3	1.1	2.2	1.8	2.3	2.3	2.1	2.4	7	70
Toluene		0.7J	0.7J	0.1 J											68.6	343
Benzene				0.1 J											0.5	5
Chlorobenzene															20	100
1,4-dichlorobenzene															15	75
Trichloroethene				0.1 J											0.5	5
Tetrachloroethene															0.5	5
1,2,4-Trichlorobenzene													0.20		14	70

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

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Sampling Point: / Collection Date:	P-107D								WDNR NR140	
	10/27/93	4/13/94	5/9/96	10/23/96	5/14/97	10/27/97	4/14/98	10/14/98	PAL	ES
PARAMETER										
Chloromethane			0.3J	0.44 J					0.3	3
Vinyl Chloride	6		0.6J	3.9	2.4	5.1	4.1	2.2	0.02	0.2
Chloroethane									80	400
cis-1,2-dichloroethene	2B		0.2J		0.49	1.7	1.0		7	70
Toluene			0.3J						68.6	343
Benzene			0.1J						0.5	5
Chlorobenzene									20	100
1,4-dichlorobenzene									15	75
Trichloroethene									0.5	5
Tetrachloroethene									0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-108							P-108				WDNR NR140	
Collection Date:	10/18/93	4/13/94	5/8/96	10/23/96	5/12/97	10/27/97	4/14/98	10/25/93	10/25/93 DUP	4/13/94	4/13/94 DUP	PAL	ES
PARAMETER													
Chloromethane				0.85 J								0.3	3
Vinyl Chloride												0.02	0.2
cis-1,2-dichloroethene			0.2 J									7	70
Toluene	11	2	0.2 J									68.6	343
Benzene												0.5	5
Chlorobenzene												20	100
1,4-dichlorobenzene												15	75
Trichloroethene												0.5	5
Tetrachloroethene												0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

MW-108 was removed from the monitoring program in May 1998

Table 3. Groundwater VOC Sampling Results

Sampling Point:	P-109		MW-110		MW-111	P-111	WDNR NR140	
Collection Date:	10/21/93	4/13/94	10/19/93	4/13/94	4/19/94	4/19/94	PAL	ES
PARAMETER								
Vinyl Chloride							0.02	0.2
cis-1,2-dichloroethene							7	70
Toluene				6		2	68.6	343
Benzene							0.5	5
Chlorobenzene							20	100
1,4-dichlorobenzene							15	75
Trichloroethene							0.5	5
Tetrachloroethene							0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-112						WDNR NR140	
Collection Date:	11/27/96	11/27/96 DUP	5/12/97	10/26/97	4/13/98	10/13/98	PAL	ES
PARAMETER								
Chloroethane	2 J	2 J			1.4		80	400
Chloromethane							0.3	3
Vinyl Chloride	15	16	2.2		12	25	0.02	0.2
cis-1,2-dichloroethene	59	58	5.4	1.3	57	80	7	70
Trans-1,2-Dichloroethene	1 J	1 J			1.3		20	100
Toluene							68.6	343
Benzene	0.6 J	0.7 J	0.59	0.5	0.69	0.76	0.5	5
Chlorobenzene			0.27	0.29			20	100
1,4-dichlorobenzene							15	75
Trichloroethene	3 J	4 J			1.9	1.2	0.5	5
Tetrachloroethene							0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

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12-18-98
43

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A TETRA TECH COMPANY

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Suite 100
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53045

414-792-1282 FAX 414-792-1310

December 16, 1998
(N734-101)

Mr. Dave Carper
Wisconsin Department of Natural Resources
RR/3
P.O. Box 7921
Madison, WI 53707-7921

Mr. Charles Warzecha
WI Division of Health & Social Services
1414 E. Washington Avenue
Room 96, Division of Health
Madison, WI 53703

RE: Ripon FF/NN Landfill Private Well Sampling Results

Dear Dave and Chuck:

Enclosed please find copies of the letters sent to the residents and the laboratory analytical results from the private well sampling conducted at four wells adjacent to the FF/NN Landfill in Ripon, Wisconsin in October 1998.

The well water was tested for the presence of volatile organic compounds (VOCs). As you can see from the enclosed laboratory sheets, no VOCs other than methylene chloride were detected in the water samples analyzed by National Environmental Testing, Inc. The methylene chloride was also detected in the quality control samples, confirming its laboratory artifact origin.

Should you have any questions concerning the water quality results, please feel free to call me at 414-792-1282.

Sincerely,

HSI GEOTRANS

Judy L. Fassbender, P.G.
Senior Hydrogeologist

JLF/gf

HSI GEOTRANS
A TETRA TECH COMPANY

175 N. Corporate Drive
Suite 100
Brookfield, Wisconsin
53045

414-792-1282 FAX 414-792-1310

December 16, 1998
(N734-101)

Mr. Harold Weiss
N8778 S. Koro Road
Ripon, WI 54971

RE: Results of Well Water Testing Conducted October 1998

Dear Mr. Weiss:

A water sample was collected from your home in October 1998 by HSI GeoTrans, Inc. and submitted for laboratory analysis. This testing was performed as part of the groundwater monitoring being conducted in cooperation with the Wisconsin Department of Natural Resources at the FF/NN Landfill in Ripon.

Your well water was tested for the presence of volatile organic compounds (VOCs). No VOCs were detected in the water sample from your well. The FF/NN Landfill or any other contaminant source has not impacted your well with VOCs. A copy of the laboratory results is attached. Note that the "<" in the results column means that a compound was undetected.

Should you have any questions concerning your water quality results, please feel free to call me collect at 414-792-1282, or call Chuck Warzecha at the Wisconsin Division of Health at 608-267-3732. Dave Carper, the project manager at the WDNR, can assist you with any questions at 608-267-6723.

Sincerely,

HSI GEOTRANS

Judy L. Fassbender
Senior Hydrogeologist

JLF:gf

cc: Dave Carper, WDNR
Chuck Warzecha, DHSS

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321054
Account No: 39150

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Weiss Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 12:00 Date Received: 10/15/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
VOC - AQUEOUS - EPA 8260B							
Benzene	<0.31	ug/L	0.31	0.98	SW 8260B	10/21/1998	494
Bromobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/21/1998	494
Bromochloromethane	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
Bromodichloromethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/21/1998	494
Bromoform	<0.14	ug/L	0.14	0.45	SW 8260B	10/21/1998	494
Bromomethane	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
n-Butylbenzene	<0.44	ug/L	0.44	1.4	SW 8260B	10/21/1998	494
sec-Butylbenzene	<0.45	ug/L	0.45	1.4	SW 8260B	10/21/1998	494
tert-Butylbenzene	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
Carbon Tetrachloride	<0.40	ug/L	0.40	1.3	SW 8260B	10/21/1998	494
Chlorobenzene	<0.22	ug/L	0.22	0.69	SW 8260B	10/21/1998	494
Chlorodibromomethane	<0.10	ug/L	0.10	0.33	SW 8260B	10/21/1998	494
Chloroethane	<1.2	ug/L	1.2	3.9	SW 8260B	10/21/1998	494
Chloroform	<0.18	ug/L	0.18	0.58	SW 8260B	10/21/1998	494
Chloromethane	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
2-Chlorotoluene	<0.28	ug/L	0.28	0.90	SW 8260B	10/21/1998	494
4-Chlorotoluene	<0.47	ug/L	0.47	1.5	SW 8260B	10/21/1998	494
1,2-Dibromo-3-Chloropropane	<1.4	ug/L	1.4	4.5	SW 8260B	10/21/1998	494
1,2-Dibromoethane (EDB)	<0.16	ug/L	0.16	0.51	SW 8260B	10/21/1998	494
Dibromomethane	<0.11	ug/L	0.11	0.36	SW 8260B	10/21/1998	494
1,2-Dichlorobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/21/1998	494
1,3-Dichlorobenzene	<0.22	ug/L	0.22	0.71	SW 8260B	10/21/1998	494
1,4-Dichlorobenzene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
Dichlorodifluoromethane	<0.49	ug/L	0.49	1.6	SW 8260B	10/21/1998	494
1,1-Dichloroethane	<0.25	ug/L	0.25	0.79	SW 8260B	10/21/1998	494
1,2-Dichloroethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/21/1998	494
1,1-Dichloroethene	<0.73	ug/L	0.73	2.3	SW 8260B	10/21/1998	494
cis-1,2-Dichloroethene	<0.23	ug/L	0.23	0.74	SW 8260B	10/21/1998	494
trans-1,2-Dichloroethene	<0.39	ug/L	0.39	1.2	SW 8260B	10/21/1998	494
1,2-Dichloropropane	<0.29	ug/L	0.29	0.93	SW 8260B	10/21/1998	494
1,3-Dichloropropane	<0.15	ug/L	0.15	0.46	SW 8260B	10/21/1998	494
2,2-Dichloropropane	<0.37	ug/L	0.37	1.2	SW 8260B	10/21/1998	494
1,1-Dichloropropene	<0.63	ug/L	0.63	2.0	SW 8260B	10/21/1998	494
cis-1,3-Dichloropropene	<0.17	ug/L	0.17	0.56	SW 8260B	10/21/1998	494

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321054
Account No: 39150

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Weiss Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 12:00 Date Received: 10/15/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene	<0.13	ug/L	0.13	0.42	SW 8260B	10/21/1998	494
Di-isopropyl ether	<0.13	ug/L	0.13	0.41	SW 8260B	10/21/1998	494
Ethylbenzene	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
Hexachlorobutadiene	<0.37	ug/L	0.37	1.2	SW 8260B	10/21/1998	494
Isopropylbenzene	<0.36	ug/L	0.36	1.1	SW 8260B	10/21/1998	494
p-Isopropyltoluene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
Methylene Chloride	<0.87	ug/L	0.87	3.1	SW 8260B	10/21/1998	494
Methyl-t-butyl ether	<0.14	ug/L	0.14	0.45	SW 8260B	10/21/1998	494
Naphthalene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
n-Propylbenzene	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
Styrene	<0.16	ug/L	0.16	0.51	SW 8260B	10/21/1998	494
1,1,1,2-Tetrachloroethane	<0.11	ug/L	0.11	0.34	SW 8260B	10/21/1998	494
1,1,2,2-Tetrachloroethane	<0.39	ug/L	0.39	1.3	SW 8260B	10/21/1998	494
Tetrachloroethene	<0.63	ug/L	0.63	2.0	SW 8260B	10/21/1998	494
Toluene	<0.39	ug/L	0.39	1.3	SW 8260B	10/21/1998	494
1,2,3-Trichlorobenzene	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
1,2,4-Trichlorobenzene	<0.18	ug/L	0.18	0.57	SW 8260B	10/21/1998	494
1,1,1-Trichloroethane	<0.28	ug/L	0.28	0.88	SW 8260B	10/21/1998	494
1,1,2-Trichloroethane	<0.15	ug/L	0.15	0.46	SW 8260B	10/21/1998	494
Trichloroethene	<0.49	ug/L	0.49	1.6	SW 8260B	10/21/1998	494
Trichlorofluoromethane	<0.58	ug/L	0.58	1.8	SW 8260B	10/21/1998	494
1,2,3-Trichloropropane	<0.28	ug/L	0.28	0.90	SW 8260B	10/21/1998	494
1,2,4-Trimethylbenzene	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
1,3,5-Trimethylbenzene	<0.33	ug/L	0.33	1.0	SW 8260B	10/21/1998	494
Vinyl Chloride	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
Xylenes, Total	<1.1	ug/L	1.1	3.6	SW 8260B	10/21/1998	494
Surr: Dibromofluoromethane	87.6	%	n/a	n/a	SW 8260B	10/21/1998	494
Surr: Toluene-d8	107.4	%	n/a	n/a	SW 8260B	10/21/1998	494
Surr: Bromofluorobenzene	102.4	%	n/a	n/a	SW 8260B	10/21/1998	494

HSI GEOTRANS
A TETRA TECH COMPANY

175 N. Corporate Drive
Suite 100
Brookfield, Wisconsin
53045

414-792-1282 FAX 414-792-1310

December 16, 1998
(N734-101)

Mr. Hubert Rohde
N8745 S. Koro Road
Ripon, WI 54971

RE: Results of Well Water Testing Conducted October 1998

Dear Mr. Rohde:

A water sample was collected from your home in October 1998 by HSI GeoTrans, Inc. and submitted for laboratory analysis. This testing was performed as part of the groundwater monitoring being conducted in cooperation with the Wisconsin Department of Natural Resources at the FF/NN Landfill in Ripon.

Your well water was tested for the presence of volatile organic compounds (VOCs). No VOCs other than methylene chloride were detected in the water sample from your well. Methylene chloride is a common laboratory contaminant and it was also found in the quality control samples indicating that the methylene chloride was not present in the water from your well, but was introduced in the sampling and analysis process. The FF/NN Landfill or any other contaminant source has not impacted your well with VOCs. A copy of the laboratory results is attached. Note that the "<" in the results column means that a compound was undetected.

Should you have any questions concerning your water quality results, please feel free to call me collect at 414-792-1282, or call Chuck Warzecha at the Wisconsin Division of Health at 608-267-3732. Dave Carper, the project manager at the WDNR, can assist you with any questions at 608-267-6823.

Sincerely,

HSI GEOTRANS

Judy L. Fassbender
Senior Hydrogeologist

JLF:gf

cc: Dave Carper, WDNR
Chuck Warzecha, DHSS

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321053
Account No: 39150

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Rhode Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 11:40 Date Received: 10/15/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
VOC - AQUEOUS - EPA 8260B							
Benzene	<0.31	ug/L	0.31	0.98	SW 8260B	10/23/1998	495
Bromobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/23/1998	495
Bromochloromethane	<0.32	ug/L	0.32	1.0	SW 8260B	10/23/1998	495
Bromodichloromethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/23/1998	495
Bromoform	<0.14	ug/L	0.14	0.45	SW 8260B	10/23/1998	495
Bromomethane	<0.46	ug/L	0.46	1.5	SW 8260B	10/23/1998	495
n-Butylbenzene	<0.44	ug/L	0.44	1.4	SW 8260B	10/23/1998	495
sec-Butylbenzene	<0.45	ug/L	0.45	1.4	SW 8260B	10/23/1998	495
tert-Butylbenzene	<0.38	ug/L	0.38	1.2	SW 8260B	10/23/1998	495
Carbon Tetrachloride	<0.40	ug/L	0.40	1.3	SW 8260B	10/23/1998	495
Chlorobenzene	<0.22	ug/L	0.22	0.69	SW 8260B	10/23/1998	495
Chlorodibromomethane	<0.10	ug/L	0.10	0.33	SW 8260B	10/23/1998	495
Chloroethane	<1.2	ug/L	1.2	3.9	SW 8260B	10/23/1998	495
Chloroform	<0.18	ug/L	0.18	0.58	SW 8260B	10/23/1998	495
Chloromethane	<0.38	ug/L	0.38	1.2	SW 8260B	10/23/1998	495
2-Chlorotoluene	<0.28	ug/L	0.28	0.90	SW 8260B	10/23/1998	495
4-Chlorotoluene	<0.47	ug/L	0.47	1.5	SW 8260B	10/23/1998	495
1,2-Dibromo-3-Chloropropane	<1.4	ug/L	1.4	4.5	SW 8260B	10/23/1998	495
1,2-Dibromoethane (EDB)	<0.16	ug/L	0.16	0.51	SW 8260B	10/23/1998	495
Dibromomethane	<0.11	ug/L	0.11	0.36	SW 8260B	10/23/1998	495
1,2-Dichlorobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/23/1998	495
1,3-Dichlorobenzene	<0.22	ug/L	0.22	0.71	SW 8260B	10/23/1998	495
1,4-Dichlorobenzene	<0.35	ug/L	0.35	1.1	SW 8260B	10/23/1998	495
Dichlorodifluoromethane	<0.49	ug/L	0.49	1.6	SW 8260B	10/23/1998	495
1,1-Dichloroethane	<0.25	ug/L	0.25	0.79	SW 8260B	10/23/1998	495
1,2-Dichloroethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/23/1998	495
1,1-Dichloroethene	<0.73	ug/L	0.73	2.3	SW 8260B	10/23/1998	495
cis-1,2-Dichloroethene	<0.23	ug/L	0.23	0.74	SW 8260B	10/23/1998	495
trans-1,2-Dichloroethene	<0.39	ug/L	0.39	1.2	SW 8260B	10/23/1998	495
1,2-Dichloropropane	<0.29	ug/L	0.29	0.93	SW 8260B	10/23/1998	495
1,3-Dichloropropane	<0.15	ug/L	0.15	0.46	SW 8260B	10/23/1998	495
2,2-Dichloropropane	<0.37	ug/L	0.37	1.2	SW 8260B	10/23/1998	495
1,1-Dichloropropene	<0.63	ug/L	0.63	2.0	SW 8260B	10/23/1998	495
cis-1,3-Dichloropropene	<0.17	ug/L	0.17	0.56	SW 8260B	10/23/1998	495

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321053
Account No: 39150

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Rhode Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 11:40 Date Received: 10/15/1998

Parameter		Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene		<0.13	ug/L	0.13	0.42	SW 8260B	10/23/1998	495
Di-isopropyl ether		<0.13	ug/L	0.13	0.41	SW 8260B	10/23/1998	495
Ethylbenzene		<0.38	ug/L	0.38	1.2	SW 8260B	10/23/1998	495
Hexachlorobutadiene		<0.37	ug/L	0.37	1.2	SW 8260B	10/23/1998	495
Isopropylbenzene		<0.36	ug/L	0.36	1.1	SW 8260B	10/23/1998	495
p-Isopropyltoluene		<0.35	ug/L	0.35	1.1	SW 8260B	10/23/1998	495
Methylene Chloride	L	2.1	ug/L	0.87	3.1	SW 8260B	10/23/1998	495
Methyl-t-butyl ether		<0.14	ug/L	0.14	0.45	SW 8260B	10/23/1998	495
Naphthalene		<0.35	ug/L	0.35	1.1	SW 8260B	10/23/1998	495
n-Propylbenzene		<0.46	ug/L	0.46	1.5	SW 8260B	10/23/1998	495
Styrene		<0.16	ug/L	0.16	0.51	SW 8260B	10/23/1998	495
1,1,1,2-Tetrachloroethane		<0.11	ug/L	0.11	0.34	SW 8260B	10/23/1998	495
1,1,2,2-Tetrachloroethane		<0.39	ug/L	0.39	1.3	SW 8260B	10/23/1998	495
Tetrachloroethene		<0.63	ug/L	0.63	2.0	SW 8260B	10/23/1998	495
Toluene		<0.39	ug/L	0.39	1.3	SW 8260B	10/23/1998	495
1,2,3-Trichlorobenzene		<0.32	ug/L	0.32	1.0	SW 8260B	10/23/1998	495
1,2,4-Trichlorobenzene		<0.18	ug/L	0.18	0.57	SW 8260B	10/23/1998	495
1,1,1-Trichloroethane		<0.28	ug/L	0.28	0.88	SW 8260B	10/23/1998	495
1,1,2-Trichloroethane		<0.15	ug/L	0.15	0.46	SW 8260B	10/23/1998	495
Trichloroethene		<0.49	ug/L	0.49	1.6	SW 8260B	10/23/1998	495
Trichlorofluoromethane		<0.58	ug/L	0.58	1.8	SW 8260B	10/23/1998	495
1,2,3-Trichloropropane		<0.28	ug/L	0.28	0.90	SW 8260B	10/23/1998	495
1,2,4-Trimethylbenzene		<0.32	ug/L	0.32	1.0	SW 8260B	10/23/1998	495
1,3,5-Trimethylbenzene		<0.33	ug/L	0.33	1.0	SW 8260B	10/23/1998	495
Vinyl Chloride		<0.46	ug/L	0.46	1.5	SW 8260B	10/23/1998	495
Xylenes, Total		<1.1	ug/L	1.1	3.6	SW 8260B	10/23/1998	495
Surr: Dibromofluoromethane		100.8	%	n/a	n/a	SW 8260B	10/23/1998	495
Surr: Toluene-d8		97.2	%	n/a	n/a	SW 8260B	10/23/1998	495
Surr: Bromofluorobenzene		101.8	%	n/a	n/a	SW 8260B	10/23/1998	495

HSI GEOTRANS
A TETRA TECH COMPANY

175 N. Corporate Drive
Suite 100
Brookfield, Wisconsin
53045

414-792-1282 FAX 414-792-1310

December 16, 1998
(N734-101)

Mr. Ronald Altnau
N8798 S. Koro Road
Ripon, WI 54971

RE: Results of Well Water Testing Conducted October 1998

Dear Mr. Altnau:

A water sample was collected from your home in October 1998 by HSI GeoTrans, Inc. and submitted for laboratory analysis. This testing was performed as part of the groundwater monitoring being conducted in cooperation with the Wisconsin Department of Natural Resources at the FF/NN Landfill in Ripon.

Your well water was tested for the presence of volatile organic compounds (VOCs). No VOCs were detected in the water sample from your well. The FF/NN Landfill or any other contaminant source has not impacted your well with VOCs. A copy of the laboratory results is attached. Note that the "<" in the results column means that a compound was undetected.

Should you have any questions concerning your water quality results, please feel free to call me collect at 414-792-1282, or call Chuck Warzecha at the Wisconsin Division of Health at 608-267-3732. Dave Carper, the project manager at the WDNR, can assist you with any questions at 608-267-6823.

Sincerely,

HSI GEOTRANS

Judy L. Fassbender
Senior Hydrogeologist

JLF:gf

cc: Dave Carper, WDNR
Chuck Warzecha, DHSS

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321056
Account No: 39150

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Altnau Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 13:20 Date Received: 10/15/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
VOC - AQUEOUS - EPA 8260B							
Benzene	<0.31	ug/L	0.31	0.98	SW 8260B	10/21/1998	494
Bromobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/21/1998	494
Bromochloromethane	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
Bromodichloromethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/21/1998	494
Bromoform	<0.14	ug/L	0.14	0.45	SW 8260B	10/21/1998	494
Bromomethane	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
n-Butylbenzene	<0.44	ug/L	0.44	1.4	SW 8260B	10/21/1998	494
sec-Butylbenzene	<0.45	ug/L	0.45	1.4	SW 8260B	10/21/1998	494
tert-Butylbenzene	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
Carbon Tetrachloride	<0.40	ug/L	0.40	1.3	SW 8260B	10/21/1998	494
Chlorobenzene	<0.22	ug/L	0.22	0.69	SW 8260B	10/21/1998	494
Chlorodibromomethane	<0.10	ug/L	0.10	0.33	SW 8260B	10/21/1998	494
Chloroethane	<1.2	ug/L	1.2	3.9	SW 8260B	10/21/1998	494
Chloroform	<0.18	ug/L	0.18	0.58	SW 8260B	10/21/1998	494
Chloromethane	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
2-Chlorotoluene	<0.28	ug/L	0.28	0.90	SW 8260B	10/21/1998	494
4-Chlorotoluene	<0.47	ug/L	0.47	1.5	SW 8260B	10/21/1998	494
1,2-Dibromo-3-Chloropropane	<1.4	ug/L	1.4	4.5	SW 8260B	10/21/1998	494
1,2-Dibromoethane (EDB)	<0.16	ug/L	0.16	0.51	SW 8260B	10/21/1998	494
Dibromomethane	<0.11	ug/L	0.11	0.36	SW 8260B	10/21/1998	494
1,2-Dichlorobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/21/1998	494
1,3-Dichlorobenzene	<0.22	ug/L	0.22	0.71	SW 8260B	10/21/1998	494
1,4-Dichlorobenzene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
Dichlorodifluoromethane	<0.49	ug/L	0.49	1.6	SW 8260B	10/21/1998	494
1,1-Dichloroethane	<0.25	ug/L	0.25	0.79	SW 8260B	10/21/1998	494
1,2-Dichloroethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/21/1998	494
1,1-Dichloroethene	<0.73	ug/L	0.73	2.3	SW 8260B	10/21/1998	494
cis-1,2-Dichloroethene	<0.23	ug/L	0.23	0.74	SW 8260B	10/21/1998	494
trans-1,2-Dichloroethene	<0.39	ug/L	0.39	1.2	SW 8260B	10/21/1998	494
1,2-Dichloropropane	<0.29	ug/L	0.29	0.93	SW 8260B	10/21/1998	494
1,3-Dichloropropane	<0.15	ug/L	0.15	0.46	SW 8260B	10/21/1998	494
2,2-Dichloropropane	<0.37	ug/L	0.37	1.2	SW 8260B	10/21/1998	494
1,1-Dichloropropene	<0.63	ug/L	0.63	2.0	SW 8260B	10/21/1998	494
cis-1,3-Dichloropropene	<0.17	ug/L	0.17	0.56	SW 8260B	10/21/1998	494

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321056
Account No: 39150
Page 10

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Altnau Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 13:20 Date Received: 10/15/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene	<0.13	ug/L	0.13	0.42	SW 8260B	10/21/1998	494
Di-isopropyl ether	<0.13	ug/L	0.13	0.41	SW 8260B	10/21/1998	494
Ethylbenzene	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
Hexachlorobutadiene	<0.37	ug/L	0.37	1.2	SW 8260B	10/21/1998	494
Isopropylbenzene	<0.36	ug/L	0.36	1.1	SW 8260B	10/21/1998	494
p-Isopropyltoluene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
Methylene Chloride	<0.87	ug/L	0.87	3.1	SW 8260B	10/21/1998	494
Methyl-t-butyl ether	<0.14	ug/L	0.14	0.45	SW 8260B	10/21/1998	494
Naphthalene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
n-Propylbenzene	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
Styrene	<0.16	ug/L	0.16	0.51	SW 8260B	10/21/1998	494
1,1,1,2-Tetrachloroethane	<0.11	ug/L	0.11	0.34	SW 8260B	10/21/1998	494
1,1,2,2-Tetrachloroethane	<0.39	ug/L	0.39	1.3	SW 8260B	10/21/1998	494
Tetrachloroethene	<0.63	ug/L	0.63	2.0	SW 8260B	10/21/1998	494
Toluene	<0.39	ug/L	0.39	1.3	SW 8260B	10/21/1998	494
1,2,3-Trichlorobenzene	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
1,2,4-Trichlorobenzene	<0.18	ug/L	0.18	0.57	SW 8260B	10/21/1998	494
1,1,1-Trichloroethane	<0.28	ug/L	0.28	0.88	SW 8260B	10/21/1998	494
1,1,2-Trichloroethane	<0.15	ug/L	0.15	0.46	SW 8260B	10/21/1998	494
Trichloroethene	<0.49	ug/L	0.49	1.6	SW 8260B	10/21/1998	494
Trichlorofluoromethane	<0.58	ug/L	0.58	1.8	SW 8260B	10/21/1998	494
1,2,3-Trichloropropane	<0.28	ug/L	0.28	0.90	SW 8260B	10/21/1998	494
1,2,4-Trimethylbenzene	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
1,3,5-Trimethylbenzene	<0.33	ug/L	0.33	1.0	SW 8260B	10/21/1998	494
Vinyl Chloride	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
Xylenes, Total	<1.1	ug/L	1.1	3.6	SW 8260B	10/21/1998	494
Surr: Dibromofluoromethane	90.4	%	n/a	n/a	SW 8260B	10/21/1998	494
Surr: Toluene-d8	108.2	%	n/a	n/a	SW 8260B	10/21/1998	494
Surr: Bromofluorobenzene	103.0	%	n/a	n/a	SW 8260B	10/21/1998	494

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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321057
Account No: 39150

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Altnau Dup Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 13:30 Date Received: 10/15/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
VOC - AQUEOUS - EPA 8260B							
Benzene	<0.31	ug/L	0.31	0.98	SW 8260B	10/21/1998	494
Bromobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/21/1998	494
Bromochloromethane	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
Bromodichloromethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/21/1998	494
Bromoform	<0.14	ug/L	0.14	0.45	SW 8260B	10/21/1998	494
Bromomethane	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
n-Butylbenzene	<0.44	ug/L	0.44	1.4	SW 8260B	10/21/1998	494
sec-Butylbenzene	<0.45	ug/L	0.45	1.4	SW 8260B	10/21/1998	494
tert-Butylbenzene	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
Carbon Tetrachloride	<0.40	ug/L	0.40	1.3	SW 8260B	10/21/1998	494
Chlorobenzene	<0.22	ug/L	0.22	0.69	SW 8260B	10/21/1998	494
Chlorodibromomethane	<0.10	ug/L	0.10	0.33	SW 8260B	10/21/1998	494
Chloroethane	<1.2	ug/L	1.2	3.9	SW 8260B	10/21/1998	494
Chloroform	<0.18	ug/L	0.18	0.58	SW 8260B	10/21/1998	494
Chloromethane	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
2-Chlorotoluene	<0.28	ug/L	0.28	0.90	SW 8260B	10/21/1998	494
4-Chlorotoluene	<0.47	ug/L	0.47	1.5	SW 8260B	10/21/1998	494
1,2-Dibromo-3-Chloropropane	<1.4	ug/L	1.4	4.5	SW 8260B	10/21/1998	494
1,2-Dibromoethane (EDB)	<0.16	ug/L	0.16	0.51	SW 8260B	10/21/1998	494
Dibromomethane	<0.11	ug/L	0.11	0.36	SW 8260B	10/21/1998	494
1,2-Dichlorobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/21/1998	494
1,3-Dichlorobenzene	<0.22	ug/L	0.22	0.71	SW 8260B	10/21/1998	494
1,4-Dichlorobenzene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
Dichlorodifluoromethane	<0.49	ug/L	0.49	1.6	SW 8260B	10/21/1998	494
1,1-Dichloroethane	<0.25	ug/L	0.25	0.79	SW 8260B	10/21/1998	494
1,2-Dichloroethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/21/1998	494
1,1-Dichloroethene	<0.73	ug/L	0.73	2.3	SW 8260B	10/21/1998	494
cis-1,2-Dichloroethene	<0.23	ug/L	0.23	0.74	SW 8260B	10/21/1998	494
trans-1,2-Dichloroethene	<0.39	ug/L	0.39	1.2	SW 8260B	10/21/1998	494
1,2-Dichloropropane	<0.29	ug/L	0.29	0.93	SW 8260B	10/21/1998	494
1,3-Dichloropropane	<0.15	ug/L	0.15	0.46	SW 8260B	10/21/1998	494
2,2-Dichloropropane	<0.37	ug/L	0.37	1.2	SW 8260B	10/21/1998	494
1,1-Dichloropropene	<0.63	ug/L	0.63	2.0	SW 8260B	10/21/1998	494
cis-1,3-Dichloropropene	<0.17	ug/L	0.17	0.56	SW 8260B	10/21/1998	494

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ANALYTICAL REPORT

Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321057
Account No: 39150

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Altnau Dup Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 13:30 Date Received: 10/15/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene	<0.13	ug/L	0.13	0.42	SW 8260B	10/21/1998	494
Di-isopropyl ether	<0.13	ug/L	0.13	0.41	SW 8260B	10/21/1998	494
Ethylbenzene	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
Hexachlorobutadiene	<0.37	ug/L	0.37	1.2	SW 8260B	10/21/1998	494
Isopropylbenzene	<0.36	ug/L	0.36	1.1	SW 8260B	10/21/1998	494
p-Isopropyltoluene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
Methylene Chloride	<0.87	ug/L	0.87	3.1	SW 8260B	10/21/1998	494
Methyl-t-butyl ether	<0.14	ug/L	0.14	0.45	SW 8260B	10/21/1998	494
Naphthalene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
n-Propylbenzene	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
Styrene	<0.16	ug/L	0.16	0.51	SW 8260B	10/21/1998	494
1,1,1,2-Tetrachloroethane	<0.11	ug/L	0.11	0.34	SW 8260B	10/21/1998	494
1,1,2,2-Tetrachloroethane	<0.39	ug/L	0.39	1.3	SW 8260B	10/21/1998	494
Tetrachloroethene	<0.63	ug/L	0.63	2.0	SW 8260B	10/21/1998	494
Toluene	<0.39	ug/L	0.39	1.3	SW 8260B	10/21/1998	494
1,2,3-Trichlorobenzene	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
1,2,4-Trichlorobenzene	<0.18	ug/L	0.18	0.57	SW 8260B	10/21/1998	494
1,1,1-Trichloroethane	<0.28	ug/L	0.28	0.88	SW 8260B	10/21/1998	494
1,1,2-Trichloroethane	<0.15	ug/L	0.15	0.46	SW 8260B	10/21/1998	494
Trichloroethene	<0.49	ug/L	0.49	1.6	SW 8260B	10/21/1998	494
Trichlorofluoromethane	<0.58	ug/L	0.58	1.8	SW 8260B	10/21/1998	494
1,2,3-Trichloropropane	<0.28	ug/L	0.28	0.90	SW 8260B	10/21/1998	494
1,2,4-Trimethylbenzene	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
1,3,5-Trimethylbenzene	<0.33	ug/L	0.33	1.0	SW 8260B	10/21/1998	494
Vinyl Chloride	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
Xylenes, Total	<1.1	ug/L	1.1	3.6	SW 8260B	10/21/1998	494
Surr: Dibromofluoromethane	90.4	%	n/a	n/a	SW 8260B	10/21/1998	494
Surr: Toluene-d8	108.4	%	n/a	n/a	SW 8260B	10/21/1998	494
Surr: Bromofluorobenzene	103.6	%	n/a	n/a	SW 8260B	10/21/1998	494

HSI GEOTRANS
A TETRA TECH COMPANY

175 N. Corporate Drive
Suite 100
Brookfield, Wisconsin
53045

414-792-1282 FAX 414-792-1310

December 16, 1998
(N734-101)

Mr. William Hadel
W14292 Charles Street
Ripon, WI 54971

RE: Results of Well Water Testing Conducted October 1998

Dear Mr. Hadel:

A water sample was collected from your home in October 1998 by HSI GeoTrans, Inc. and submitted for laboratory analysis. This testing was performed as part of the groundwater monitoring being conducted in cooperation with the Wisconsin Department of Natural Resources at the FF/NN Landfill in Ripon.

Your well water was tested for the presence of volatile organic compounds (VOCs). No VOCs were detected in the water sample from your well. The FF/NN Landfill or any other contaminant source has not impacted your well with VOCs. A copy of the laboratory results is attached. Note that the "<" in the results column means that a compound was undetected.

Should you have any questions concerning your water quality results, please feel free to call me collect at 414-792-1282, or call Chuck Warzecha at the Wisconsin Division of Health at 608-267-3732. Dave Carper, the project manager at the WDNR, can assist you with any questions at 608-267-6823.

Sincerely,

HSI GEOTRANS

Judy L. Fassbender
Senior Hydrogeologist

JLF:gf

cc: Dave Carper, WDNR
Chuck Warzecha, DHSS

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
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ANALYTICAL REPORT

Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321055
Account No: 39150

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Hadel Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 13:00 Date Received: 10/15/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
VOC - AQUEOUS - EPA 8260B							
Benzene	<0.31	ug/L	0.31	0.98	SW 8260B	10/21/1998	494
Bromobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/21/1998	494
Bromochloromethane	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
Bromodichloromethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/21/1998	494
Bromoform	<0.14	ug/L	0.14	0.45	SW 8260B	10/21/1998	494
Bromomethane	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
n-Butylbenzene	<0.44	ug/L	0.44	1.4	SW 8260B	10/21/1998	494
sec-Butylbenzene	<0.45	ug/L	0.45	1.4	SW 8260B	10/21/1998	494
tert-Butylbenzene	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
Carbon Tetrachloride	<0.40	ug/L	0.40	1.3	SW 8260B	10/21/1998	494
Chlorobenzene	<0.22	ug/L	0.22	0.69	SW 8260B	10/21/1998	494
Chlorodibromomethane	<0.10	ug/L	0.10	0.33	SW 8260B	10/21/1998	494
Chloroethane	<1.2	ug/L	1.2	3.9	SW 8260B	10/21/1998	494
Chloroform	<0.18	ug/L	0.18	0.58	SW 8260B	10/21/1998	494
Chloromethane	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
2-Chlorotoluene	<0.28	ug/L	0.28	0.90	SW 8260B	10/21/1998	494
4-Chlorotoluene	<0.47	ug/L	0.47	1.5	SW 8260B	10/21/1998	494
1,2-Dibromo-3-Chloropropane	<1.4	ug/L	1.4	4.5	SW 8260B	10/21/1998	494
1,2-Dibromoethane (EDB)	<0.16	ug/L	0.16	0.51	SW 8260B	10/21/1998	494
Dibromomethane	<0.11	ug/L	0.11	0.36	SW 8260B	10/21/1998	494
1,2-Dichlorobenzene	<0.20	ug/L	0.20	0.64	SW 8260B	10/21/1998	494
1,3-Dichlorobenzene	<0.22	ug/L	0.22	0.71	SW 8260B	10/21/1998	494
1,4-Dichlorobenzene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
Dichlorodifluoromethane	<0.49	ug/L	0.49	1.6	SW 8260B	10/21/1998	494
1,1-Dichloroethane	<0.25	ug/L	0.25	0.79	SW 8260B	10/21/1998	494
1,2-Dichloroethane	<0.20	ug/L	0.20	0.63	SW 8260B	10/21/1998	494
1,1-Dichloroethene	<0.73	ug/L	0.73	2.3	SW 8260B	10/21/1998	494
cis-1,2-Dichloroethene	<0.23	ug/L	0.23	0.74	SW 8260B	10/21/1998	494
trans-1,2-Dichloroethene	<0.39	ug/L	0.39	1.2	SW 8260B	10/21/1998	494
1,2-Dichloropropane	<0.29	ug/L	0.29	0.93	SW 8260B	10/21/1998	494
1,3-Dichloropropane	<0.15	ug/L	0.15	0.46	SW 8260B	10/21/1998	494
2,2-Dichloropropane	<0.37	ug/L	0.37	1.2	SW 8260B	10/21/1998	494
1,1-Dichloropropene	<0.63	ug/L	0.63	2.0	SW 8260B	10/21/1998	494
cis-1,3-Dichloropropene	<0.17	ug/L	0.17	0.56	SW 8260B	10/21/1998	494

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Ms. Judy Fassbender
HYDRO-SEARCH/GEO TRANS
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

10/27/1998
Job No: 98.09771
Sample No: 321055
Account No: 39150

JOB DESCRIPTION: Ripon Landfill
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: 00467xxx Hadel Well
Rec'd at 4 degrees C

Date Taken: 10/13/1998 13:00 Date Received: 10/15/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene	<0.13	ug/L	0.13	0.42	SW 8260B	10/21/1998	494
Di-isopropyl ether	<0.13	ug/L	0.13	0.41	SW 8260B	10/21/1998	494
Ethylbenzene	<0.38	ug/L	0.38	1.2	SW 8260B	10/21/1998	494
Hexachlorobutadiene	<0.37	ug/L	0.37	1.2	SW 8260B	10/21/1998	494
Isopropylbenzene	<0.36	ug/L	0.36	1.1	SW 8260B	10/21/1998	494
p-Isopropyltoluene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
Methylene Chloride	<0.87	ug/L	0.87	3.1	SW 8260B	10/21/1998	494
Methyl-t-butyl ether	<0.14	ug/L	0.14	0.45	SW 8260B	10/21/1998	494
Naphthalene	<0.35	ug/L	0.35	1.1	SW 8260B	10/21/1998	494
n-Propylbenzene	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
Styrene	<0.16	ug/L	0.16	0.51	SW 8260B	10/21/1998	494
1,1,1,2-Tetrachloroethane	<0.11	ug/L	0.11	0.34	SW 8260B	10/21/1998	494
1,1,2,2-Tetrachloroethane	<0.39	ug/L	0.39	1.3	SW 8260B	10/21/1998	494
Tetrachloroethene	<0.63	ug/L	0.63	2.0	SW 8260B	10/21/1998	494
Toluene	<0.39	ug/L	0.39	1.3	SW 8260B	10/21/1998	494
1,2,3-Trichlorobenzene	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
1,2,4-Trichlorobenzene	<0.18	ug/L	0.18	0.57	SW 8260B	10/21/1998	494
1,1,1-Trichloroethane	<0.28	ug/L	0.28	0.88	SW 8260B	10/21/1998	494
1,1,2-Trichloroethane	<0.15	ug/L	0.15	0.46	SW 8260B	10/21/1998	494
Trichloroethene	<0.49	ug/L	0.49	1.6	SW 8260B	10/21/1998	494
Trichlorofluoromethane	<0.58	ug/L	0.58	1.8	SW 8260B	10/21/1998	494
1,2,3-Trichloropropane	<0.28	ug/L	0.28	0.90	SW 8260B	10/21/1998	494
1,2,4-Trimethylbenzene	<0.32	ug/L	0.32	1.0	SW 8260B	10/21/1998	494
1,3,5-Trimethylbenzene	<0.33	ug/L	0.33	1.0	SW 8260B	10/21/1998	494
Vinyl Chloride	<0.46	ug/L	0.46	1.5	SW 8260B	10/21/1998	494
Xylenes, Total	<1.1	ug/L	1.1	3.6	SW 8260B	10/21/1998	494
Surr: Dibromofluoromethane	89.8	%	n/a	n/a	SW 8260B	10/21/1998	494
Surr: Toluene-d8	109.8	%	n/a	n/a	SW 8260B	10/21/1998	494
Surr: Bromofluorobenzene	102.4	%	n/a	n/a	SW 8260B	10/21/1998	494

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7-24-1998

HSI GEOTRANS
A TETRA TECH COMPANY

175 N. Corporate Drive
Suite 100
Brookfield, Wisconsin
53045

414-792-1282 FAX 414-792-1310

July 22, 1998
(N734/101)

Mr. Dave Carper, Engineer
Wisconsin Department of Natural Resources
RR/3
P.O. Box 7921
Madison, WI 53707-7921

RE: 1998 Semi-annual Progress Report, FF/NN Landfill, Ripon, Wisconsin

Dear Mr. Carper:

Enclosed please find one copy of the Semi-Annual Status Report for the Remedial Action work at the FF/NN Landfill in Ripon, Wisconsin. Should you have any questions or comments, please do not hesitate to call.

Sincerely,

HSI GEOTRANS, INC.

Judy L. Fassbender
Senior Hydrogeologist

JLF:gf
Enc.

cc: Raymond M. Roder, Reinhart, Boerner, Van Deuren, Norris, Rieselbach, S.C. (1 copy)
Jane Lemke/Environmental Response and Repair Section (SW/3), WDNR (1 copy)
Phil Hoopman, City of Ripon, Department of Public Works (1 copy)
Nelson Olavarria - Cooper Industries (1 copy)

CONTRACT SF-92-01

SEMI-ANNUAL STATUS REPORT

January through June 1998

SITE NAME/ACTIVITY:

FF/NN Landfill
Ripon, Wisconsin
Remedial Action

File Ref. No.: 02-20-000915

PREPARED BY:

Mr. Raymond M. Roder
Reinhart, Boerner, Van Deuren, Norris
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PREPARED FOR:

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DATE:

June 1998

PERIOD:

January 1 - June 30, 1998

PROGRESS MADE THIS REPORTING PERIOD:

- Groundwater and leachate samples were collected on April 13 and 14, 1998.
- The analytical results from the sampling of three private wells located near the landfill were sent to the respective homeowners.
- A request to eliminate four monitor wells from the semi-annual sampling program was granted by the WDNR in May.

DATA TRANSMITTED WITH REPORT:

- Groundwater Volatile Organic Compound (VOC) Sampling Results Summary Table.

ANTICIPATED PROBLEMS AND RECOMMENDED SOLUTIONS:

- During the April sampling event, several of the water table wells did not contain sufficient water to permit sample collection. These wells included MW-101 and MW-103 located to the north and south of the landfill, respectively, as shown in the attached Figure 1. The water levels in these wells were lower as compared to prior years. The VOC concentrations in wells where samples could be obtained did not vary significantly from previous results. The wells will be sampled in the fall provided that adequate water is available in the wells.

DOCUMENTS SUBMITTED:

- Groundwater monitor well data and private well data were submitted to the WDNR in disk format, as requested.

UPCOMING ACTIVITIES PLANNED:

- The next semi-annual groundwater and landfill gas sampling will be conducted in October 1998.

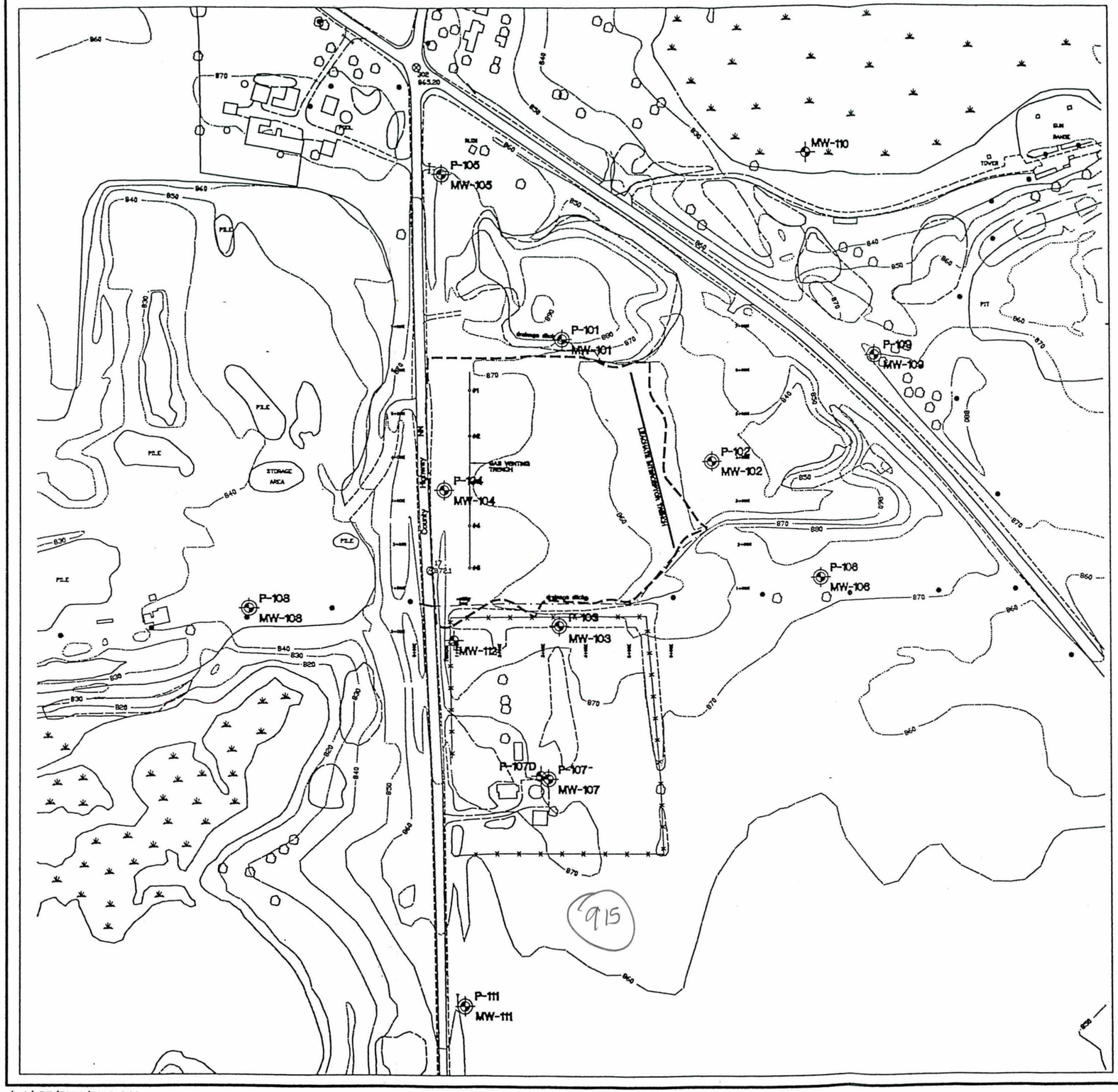
PERSONNEL/SUBCONTRACTORS:

- Judy Fassbender coordinates the groundwater monitoring activities. Todd Thomson conducts the field sampling. The laboratory analyses were completed by NET in Watertown, Wisconsin.

CONCLUSIONS:

No significant decreases in VOC concentrations in groundwater have been noted since the construction of the composite cap over the landfill was completed in August 1996. A slight

increase in VOC concentration was noted at MW-104 during the Spring 1998 sampling event. Reduced dilution of leachate in the landfill resulting from reduced percolation through the cap may be the source of the VOC increase at MW-104. This well is constructed through the fill material and is expected to be a good indicator in evaluating the cap's effectiveness in addressing groundwater impacts over time.



EXPLANATION

P-104
MW-104 MONITOR WELL, PIEZOMETER LOCATION AND DESIGNATION

N

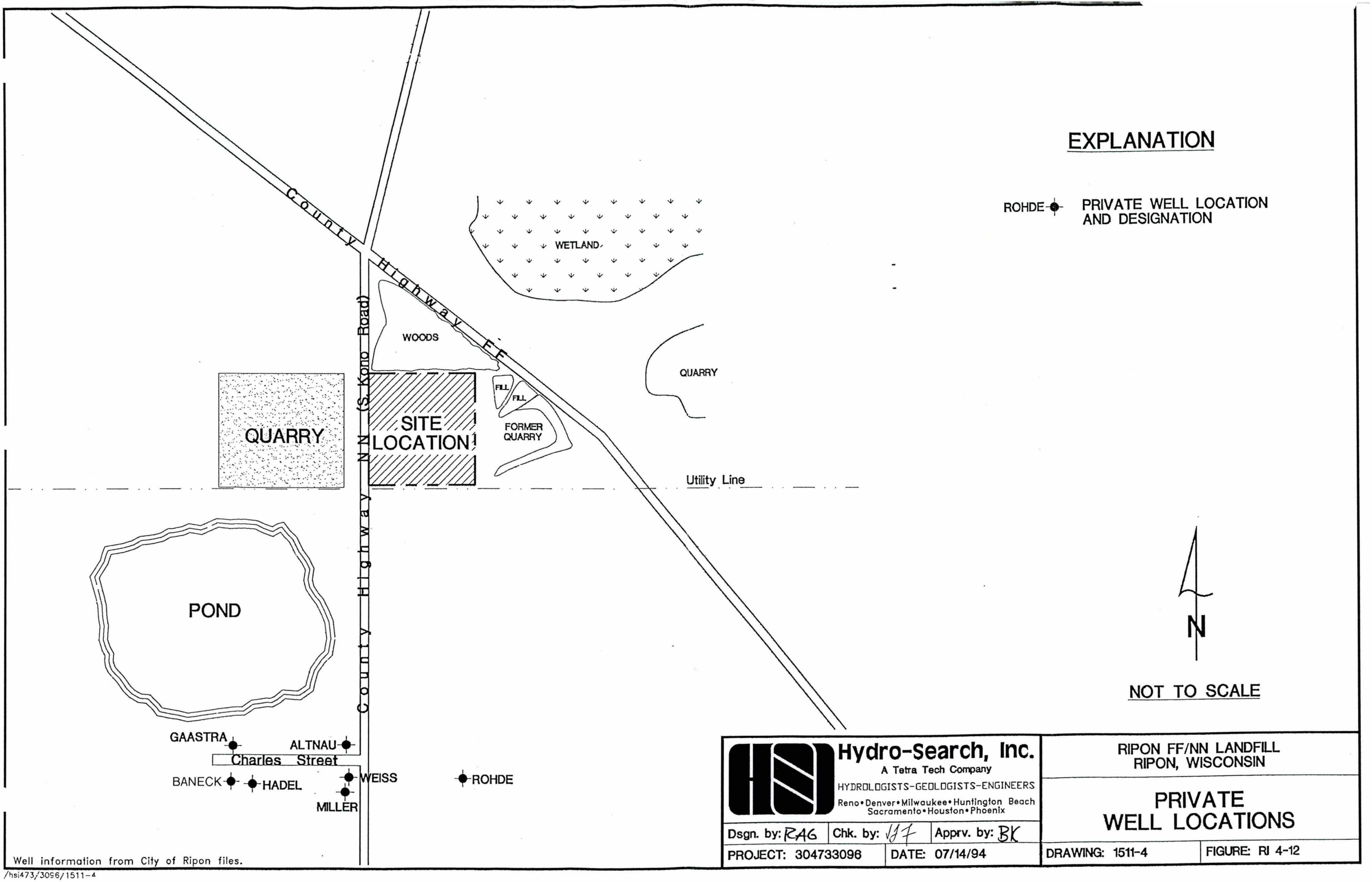
SCALE

0 500

Feet

RIPON FF/NN LANDFILL RIPON, WISCONSIN	DATE: 1/5/98
	DESIGNED: BOB
SITE LAYOUT AND SAMPLE LOCATIONS	CHECKED: JLF
	APPROVED: JLF
	DRAWN: BOB
	PROJ.: N734
HSI GEOTRANS A TETRA TECH COMPANY	Figure 1

/hsl/473/3096/3096-b12



EXPLANATION

ROHDE ⊕ PRIVATE WELL LOCATION AND DESIGNATION

N

NOT TO SCALE

Well information from City of Ripon files.

/hsi473/3096/1511-4

Hydro-Search, Inc. A Tetra Tech Company HYDROLOGISTS-GEOLOGISTS-ENGINEERS Reno • Denver • Milwaukee • Huntington Beach Sacramento • Houston • Phoenix	RIPON FF/NN LANDFILL RIPON, WISCONSIN	
Dsgn. by: RAG / Chk. by: JJ / Apprv. by: BK	**PRIVATE WELL LOCATIONS**	
PROJECT: 304733096 / DATE: 07/14/94	DRAWING: 1511-4	FIGURE: RI 4-12

Table 3. Groundwater VOC Sampling Results

Sampling Point:	MW-101						P-101		WDNR NR140	
Collection Date:	10/15/93	4/19/94	5/8/96	10/30/96	5/12/97	10/26/97	10/15/93	4/19/94	PAL	ES
PARAMETER										
Chloromethane				0.89 J					0.3	3
Vinyl Chloride									0.02	0.2
cis-1,2-dichloroethene									7	70
Toluene								0.5J	68.6	343
Benzene									0.5	5
Chlorobenzene									20	100
1,4-dichlorobenzene									15	75
Trichloroethene									0.5	5
Tetrachloroethene	0.7 J	0.6J	0.6J	0.72 J		0.70			0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-102							P-102		WDNR NR140	
Collection Date:	10/26/93	4/11/94	5/8/96	10/30/96	5/12/97	10/26/97	4/13/98	10/26/93	4/11/94	PAL	ES
PARAMETER											
Chloromethane				0.99 J						0.3	3
Vinyl Chloride										0.02	0.2
cis-1,2-dichloroethene							0.46			7	70
Toluene		3	0.4J							68.6	343
Benzene										0.5	5
Chlorobenzene										20	100
1,4-dichlorobenzene										15	75
Trichloroethene										0.5	5
Tetrachloroethene				0.30 J						0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-103								WDNR NR140	
Collection Date:	10/27/93	4/11/94	4/11/94 DUP	5/9/96	5/9/96 DUP	10/30/96	5/13/97	10/26/97	PAL	ES
PARAMETER										
Chloromethane					9J	1.1			0.3	3
Vinyl Chloride	75	440	410	170	180	98 E	230	220J	0.02	0.2
Chloroethane						1.9	2.7	2.4	80	400
1,1-Dichloroethane						.99 J	1.2	0.89	85	850
1,1-Dichloroethene						0.30 J	0.75		0.7	7
cis-1,2-dichloroethene	410	1100	970	740	840	520 E	790	550J	7	70
trans-1,2-Dichloroethene				9J	10J	5	4.7	5.2	20	100
1,2-dichloropropane						1.9	1.6	1.5	0.5	5
Benzene						3.3	4.3	4.2	0.5	5
Chlorobenzene				7J	8J	8.1 J	8.5	7.9	20	100
1,4-dichlorobenzene						0.76 J	0.98	1.4	15	75
Trichloroethene				10J	11J	4.7	5.6	6.6	0.5	5
Tetrachloroethene									0.5	5
1,2-dichloroethane							0.52	0.38	0.5	5
MTBE							0.27	0.38	12	60
DisIsopropyl Ether								0.57	NS	NS
Tetrahydrofuran								3.1	10	50

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	P-103							WDNR NR140	
Collection Date:	10/27/93	4/12/94	5/9/96	10/31/96	5/13/97	10/27/97	4/13/98	PAL	ES
PARAMETER									
Chloromethane				0.84 J				0.3	3
Vinyl Chloride			0.1J					0.02	0.2
Chloroethane								80	400
1,1-Dichloroethane								85	850
cis-1,2-dichloroethene			0.1J					7	70
trans-1,2-Dichloroethene								20	100
Toluene			0.1J					68.6	343
Benzene								0.5	5
Chlorobenzene								20	100
1,4-dichlorobenzene								15	75
Trichloroethene								0.5	5
Tetrachloroethene								0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-104							WDNR NR140	
Collection Date:	10/27/93	4/19/94	5/9/96	10/30/96	5/12/97	10/27/97	4/13/98	PAL	ES
PARAMETER									
Chloromethane			0.3J	0.46 J				0.3	3
Vinyl Chloride		6	10	4.3	4.5	18	17	0.02	0.2
Chloroethane			1	0.34 J	1.5			80	400
1,1-Dichloroethane			0.2 J					85	850
cis-1,2-dichloroethene	1 JB	10	6	3.6	1.1	7.3	74	7	70
trans-1,2-Dichloroethene			0.3 J	0.22 J			0.67	20	100
Toluene	31		0.2 J				0.46	68.6	343
Benzene	2	1	6	0.64 J	4.8	0.63	1.2	0.5	5
Chlorobenzene	2	1	5	1.1	4.5	1.3		20	100
Ethylbenzene			0.1J	0.80 J				140	700
1,4-dichlorobenzene	2	1			0.91	0.85		15	75
Trichloroethene		0.8J	0.5J	0.31 J			3.5	0.5	5
Tetrachloroethene								0.5	5
Total Xylenes				0.77 J				124	620
MTBE					0.32			12	60

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	P-104							WDNR NR140	
Collection Date:	10/27/94	4/19/94	5/9/96	10/30/96	5/12/97	10/27/97	4/13/98	PAL	ES
PARAMETER									
Chloromethane				0.20 J				0.3	3
Vinyl Chloride								0.02	0.2
Chloroethane								80	400
1,1-Dichloroethane								85	850
cis-1,2-dichloroethene								7	70
trans-1,2-Dichloroethene								20	100
Toluene								68.6	343
Benzene								0.5	5
Chlorobenzene								20	100
Ethylbenzene								140	700
1,4-dichlorobenzene								15	75
Trichloroethene								0.5	5
Tetrachloroethene								0.5	5
Total Xylenes								124	620
MTBE								12	60

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-105		P-105		WDNR NR140	
Collection Date:	10/26/93	4/13/94	10/26/94	4/13/94	PAL	ES
PARAMETER						
Vinyl Chloride					0.02	0.2
cis-1,2-dichloroethene					7	70
Toluene					68.6	343
Benzene					0.5	5
Chlorobenzene					20	100
1,4-dichlorobenzene					15	75
Trichloroethene					0.5	5
Tetrachloroethene					0.5	5
TOTAL VOCs	ND	ND	ND	ND		

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-106		P-106							WDNR NR140	
Collection Date:	10/26/93	4/19/94	10/26/93	4/19/94	5/8/96	10/31/96	5/12/97	10/26/97	4/13/98	PAL	ES
PARAMETER											
Vinyl Chloride										0.02	0.2
Chloromethane						0.62 J				0.3	3
cis-1,2-dichloroethene					0.2 J					7	70
Toluene		11								68.6	343
Benzene										0.5	5
Chlorobenzene										20	100
1,4-dichlorobenzene										15	75
Trichloroethene			0.6 J	0.8 J	0.8 J	0.22 J	0.65	0.67	0.61	0.5	5
Tetrachloroethene										0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-107							WDNR NR140	
Collection Date:	10/27/93	4/12/94	5/9/96	10/21/96	5/13/97	10/27/97	4/14/98	PAL	ES
PARAMETER									
Chloromethane				0.80 J				0.3	3
Vinyl Chloride								0.02	0.2
Chloroethane								80	400
cis-1,2-dichloroethene								7	70
Toluene								68.6	343
Benzene								0.5	5
Chlorobenzene								20	100
1,4-dichlorobenzene								15	75
Trichloroethene	2	2	2	2.2	2.6	2.0	2.1	0.5	5
Tetrachloroethene								0.5	5
Dichlorodifluoromethane					0.9	0.7		200	1000

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

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Sampling Point:	P-107												WDNR NR140	
Collection Date:	10/27/93	4/12/94	4/12/94 DUP	5/9/96	10/23/96	10/23/96 DUP	5/14/97	5/14/97 DUP	10/27/97	10/27/97 DUP	4/14/98	4/14/98 DUP	PAL	ES
PARAMETER														
Chloromethane					0.79 J	0.49 J							0.3	3
Vinyl Chloride	6	3	3	2	2.3	2.7	2.0	1.7	2.6	2.3	2.2	2.4	0.02	0.2
Chloroethane				0.2 J	0.19	0.21							80	400
cis-1,2-dichloroethene	4	2	2	2	1.9	2.1	1.3	1.1	2.2	1.8	2.3	2.3	7	70
Toluene		0.7J	0.7J	0.1 J									68.6	343
Benzene				0.1 J									0.5	5
Chlorobenzene													20	100
1,4-dichlorobenzene													15	75
Trichloroethene				0.1 J									0.5	5
Tetrachloroethene													0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	P-107D							WDNR NR140	
Collection Date:	10/27/93	4/13/94	5/9/96	10/23/96	5/14/97	10/27/97	4/14/98	PAL	ES
PARAMETER									
Chloromethane			0.3J	0.44 J				0.3	3
Vinyl Chloride	6		0.6J	3.9	2.4	5.1	4.1	0.02	0.2
Chloroethane								80	400
cis-1,2-dichloroethene	2B		0.2J		0.49	1.7	1.0	7	70
Toluene			0.3J					68.6	343
Benzene			0.1J					0.5	5
Chlorobenzene								20	100
1,4-dichlorobenzene								15	75
Trichloroethene								0.5	5
Tetrachloroethene								0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-108							P-108				WDNR NR140	
Collection Date:	10/18/93	4/13/94	5/8/96	10/23/96	5/12/97	10/27/97	4/14/98	10/25/93	10/25/93 DUP	4/13/94	4/13/94 DUP	PAL	ES
PARAMETER													
Chloromethane				0.85 J								0.3	3
Vinyl Chloride												0.02	0.2
cis-1,2-dichloroethene			0.2 J									7	70
Toluene	11	2	0.2 J									68.6	343
Benzene												0.5	5
Chlorobenzene												20	100
1,4-dichlorobenzene												15	75
Trichloroethene												0.5	5
Tetrachloroethene												0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

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Sampling Point:	P-109		MW-110		MW-111	P-111	WDNR NR140	
Collection Date:	10/21/93	4/13/94	10/19/93	4/13/94	4/19/94	4/19/94	PAL	ES
PARAMETER								
Vinyl Chloride							0.02	0.2
cis-1,2-dichloroethene							7	70
Toluene				6		2	68.6	343
Benzene							0.5	5
Chlorobenzene							20	100
1,4-dichlorobenzene							15	75
Trichloroethene							0.5	5
Tetrachloroethene							0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

Sampling Point:	MW-112					WDNR NR140	
Collection Date:	11/27/96	11/27/96 DUP	5/12/97	10/26/97	4/13/98	PAL	ES
PARAMETER							
Chloroethane	2 J	2 J			1.4	80	400
Chloromethane						0.3	3
Vinyl Chloride	15	16	2.2		12	0.02	0.2
cis-1,2-dichloroethene	59	58	5.4	1.3	57	7	70
Trans-1,2-Dichloroethene	1 J	1 J				20	100
Toluene						68.6	343
Benzene	0.6 J	0.7 J	0.59	0.5	0.69	0.5	5
Chlorobenzene			0.27	0.29		20	100
1,4-dichlorobenzene						15	75
Trichloroethene	3 J	4 J			1.9	0.5	5
Tetrachloroethene						0.5	5

Results in µg/ℓ
B = analyte found in method blank as well as sample
E = exceeds calibration range
J = estimated value
PAL = Preventive Action Limit
ES = Enforcement Standard
Partial Shading = Exceeds WDNR NR140 PAL
Total Shading = Exceeds WDNR NR140 ES
Blank = Not detected

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