



March 15, 1999

Mr. Paul Kozol
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53590

Re: Monthly Monitoring Report for the Oconomowoc Groundwater Treatment Facility

Dear Mr. Kozol:

Attached is the Monthly Monitoring Report for February, 1999 for the above referenced project. Questions regarding these reports should be directed to James Chang of APL, Inc. at (414) 355-5800.

Thank you for your continued cooperation and assistance with this project.

Sincerely,

Dean Groleau, Plant Superintendent
APL, Inc.



cc: Arne Thomsen, USACE, St. Paul District
Steve Peterson, USACE, Omaha District
Tom Williams, USEPA
James Chang, APL, Inc.
Mike Boehlar, Black and Veatch
David Brodzinski, WDNR, Horicon

**MONTHLY MONITORING REPORT
FOR THE
OCONOMOWOC ELECTROPLATING
GROUNDWATER TREATMENT FACILITY**

ASHIPPUN, WISCONSIN 53003

Prepared for:

**U.S. ARMY CORPS OF ENGINEERS
ST. PAUL DISTRICT
HASTINGS, MINNESOTA
CONTRACT DACW37-98-C-0009**

Prepared by:

**APL, Inc.
8222 West Calumet Road
Milwaukee, WI 53223**

March 15, 1999

1.0 Introduction

This report summarizes the monthly effluent monitoring results for the Oconomowoc Electroplating Groundwater Treatment Plant (OEGTP) for February, 1999. The OEGTP is located at the site of the former Oconomowoc Electroplating Company, in ASHIPPUN, WI.

Laboratory results of effluent sampling can be found in the Discharge Monitoring Report Form, sent under separate cover. The effluent sampling was conducted by Scott Harrison, Tony Goodman, and Dave Dugan of APL, Inc. Laboratory analysis was provided by APL, Inc., 8222 W. Calumet Road, Milwaukee WI 53223. All sampling and analyses were conducted in accordance with the Oconomowoc Electroplating Groundwater Treatment System's Chemical Data Acquisition Plan (CDAP). The parameters tested for, frequency of testing, sample type, and limits are set forth in the Final Discharge Limits, Table 1 of the Oconomowoc Electroplating Superfund Site Limits and Requirements for Discharge of Treated Groundwater, issued by the Wisconsin Department of Natural Resources (WDNR) on September 24, 1996. This report is submitted in accordance with the reporting requirements of the WDNR permit.

1.1 Site Background Review

The OEGTP is located at 2572 Oak Street in Ashippun, Wisconsin, in the NW 1/4 of the SE 1/4 of Section 30, Township 30 North, Range 17 East. The site consists of approximately 10 acres, which includes approximately 3.5 acres of the former electroplating facility. The site is bounded by Oak Street (Highway 'O') and Eva Street to the North, and Davey Creek and the Town of Ashippun's garage facilities to the South. The property directly across Oak Street is occupied by Thermogas, Inc. A residential area is located across Eva Street, and a wetlands surrounds Davey Creek.

The contact person is Arne Thomsen of the U.S. Army Corps of Engineers (USACE). Mr. Thomsen's phone number is (612) 438-3076, Fax (612) 438-2464. APL, Inc. is contracted by the USACE to operate and maintain the plant. The contact for the Treatment Plant is Dean Groleau who can be reached at (920) 474-3212, Fax (920) 474-4241. The contact for APL, Inc. is James Chang, who can be reached at (414) 355-5800, Fax (414) 355-3099.

1.2 Project Objectives

The objective of this project is to prevent the spreading of any plume of contamination that may exist at the site. Contaminated groundwater is pumped from five extraction wells, treated for cyanide, metals, suspended solids, and volatile organic compounds (VOC's). The treated water is then transferred to a groundwater effluent gallery, located south of Elm Street, near Davey Creek.

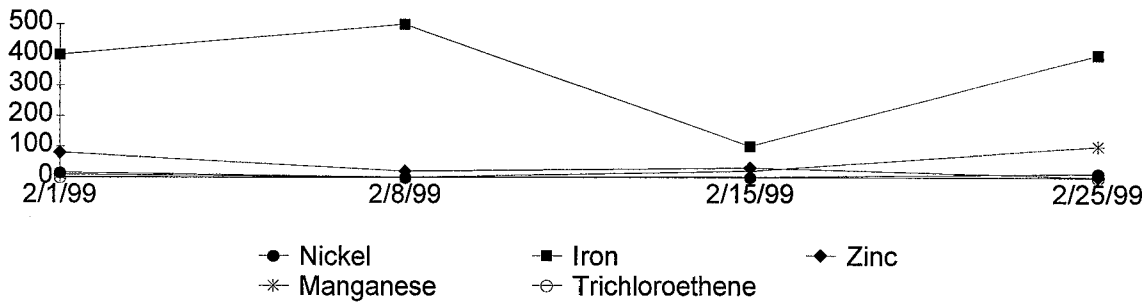
1.3 Effluent Monitoring

Weekly monitoring was conducted on February 1, 8, 15, and 25. The weekly samples for February were tested by APL, Inc. The results of the effluent monitoring tests for the samples taken on February 1, & 8 showed that Trichloroethene exceeded the limit of the WDNR effluent discharge permit. On February 1, the TCE result was 0.9ug/l and on February 8, the TCE result was 1.1ug/l. The Treatment Plant's TCE limit is 0.5ug/l and the Enforcement Standard is 5ug/l. Paul Kozol of the WDNR authorized continuation of plant operation because the spent Carbon was scheduled to be changed out on February 10 and 11. The Treatment Plant operators were waiting for the arrival of the Barrel Vac that had been purchased by the USACE. The results of the effluent monitoring tests for the samples taken on February 15 showed that Trichloroethene equaled the limit of 0.5ug/l and on February 25, the limit was 0.4ug/l on the WDNR effluent discharge permit. The possible causes of the high levels and exceedence are discussed in Section 2.0.

1.4 Monitoring Results

Results from weekly effluent monitoring can be found in the Discharge Monitoring Report Form, sent under a separate cover. Chart 1, below, shows the results of effluent monitoring for five important indicator parameters listed in the Monitoring Requirements of the Oconomowoc Electroplating Superfund Site Substantive WPDES Permit Requirements Summary (9/96). The February sampling results showed 2 exceedences in TCE.

Chart 1 - 5 Important Indicator Parameters



2.0 Plant Permit Exceedences

The possible cause for high level for TCE and VOCs in the February samplings was due to the blower duct on the Diffused Air Stripper had a tear in it. The tear was discovered on December 26 and a PVC replacement was ordered. The PVC replacement duct was received and installed on December 30. The blower's output went from 15 to 40 + inches of water column after the new blower duct was installed. Operating the Treatment Plant while having the tear in the DAS-500 blower duct resulted in a shorter life span of the Granulated Activated Carbon Filters (GAC-650/651).

The possible cause for high level for Metals in the February samplings may be due to the daily backwashing of the Tertiary Filtration System (TF-600) that requires temporarily by-passing it during the Manual effluent backwashing. The operators attempt to reduce this by-passing time by pumping the Clarifier (C-400) to the Sludge Holding Tank (ST-820) and cleaning it out at the same time as the backwashing of TF-600. Some flow past TF-600 is unavoidable, with out shutting down the plant on a daily basis. Another possible source of Metals is the evident deterioration of the metal piping after the Sulfuric Acid Static Mixer to the NPDES Monitor Station. New leaks have developed in the metal piping located between the Diffused Air Stripper (DAS-500) and the Granulated Activated Carbon Filters (GAC-650/651). The metal piping should be changed to PVC to reduce further damage to the pumps and lower the amount of uncontrolled Metals that are entering the effluent waste stream.

2.1 Treatment Plant Shut Downs

The Treatment Plant was shut down two times for a total of 10.25 hours in February, 1999. The shut downs were due to the low Equalization Tank (EQT-100) levels caused from over-estimating the backwash flow from the Tertiary Filtration System (TF-600). Table 1 shows the summary of the plant down time for the month of February, 1999.

Table 1 - Plant Down Time Summary

Date(s)	Number Hours Shut Down	Reason
2/1	5.5	Low EQT-100 Level
2/22	4.75	Low EQT-100 Level
TOTAL	10.25	

2.1.1. Shut Down Due To Low Equalization Tank Level

On February 1, the Treatment Plant was discovered shut down upon the arrival of the operator. A walk-through inspection showed that the Treatment Plant had shut down automatically due to a low level (<25%) in the Equalization Tank (EQT-100). The reason for this was due to the decreased backwash flow rate from the Tertiary Filtration System (TF-600) after unbinding the media from the "Blizzard Of 1999" incident that occurred on January 2 & 3. See January's Monthly Monitoring Report. The backwash rate from TF-600 was 5gpm before the incident and 2gpm after finally unbinding the media on January 30. The Treatment Plant down time was from 3:30A.M. to 9A.M. for a total of 5.5 hours.

2.1.2. Shut Down Due To Low Equalization Tank Level

On February 20, the Saturday operator had discovered that the Tertiary Filtration System (TF-600) media had clogged up and could not reach the pneumatic media up-lift system that keeps the media cleansed. The Floor Trench Sump, the Equalization Tank (EQT-100), and the Sludge Holding Tank (ST-820) had high levels. The Extraction Wells (EW-1, 2, 3, 4, & 5) were shut off, but the high levels remained throughout the shift except in the ST-820. EW-2 was activated at the end of the shift, but EW-1, 3, 4, & 5 were left off to lower the EQT-100 level. On February 21, the Sunday operator performed another effluent backwash on TF-600 and activated EW-1 & 2. The clogged media had freed up and the backwash return rate had reduced after the Sunday operator had gone for the day. At 4:30A.M. on February 22, the EQT-100 level

had dropped below 25% and shut down the Treatment System. The operators had discovered the shut upon their arrival for the day and everything was dumped into the Floor Trench Sump and all EW's were activated to speed up the Treatment Plant's start up in the automatic mode. The Treatment Plant started back up at 9:15A.M. and the total shut down time was 4.75 hours.

4.0 Summary

Groundwater treatment plant effluent monitoring was conducted on February 1, 8, 15, and 25 of 1999. The laboratory results of these samples show that all contaminants listed in the Requirements of the Oconomowoc Electroplating Superfund Site Substantive WPDES Permit Requirements Summary (9/96) comply with the permit except for TCE on February 1 and 8. See Chart 1, Section 1.4 for important indicator parameters.

During the month of February, 1999, the plant was shut down two times for a total of 10.25 hours. See Table 1, Section 2.1 for shut down times. All equipment operation and maintenance related issues are detailed in a separate report, entitled "*Monthly Operation and Maintenance Report for the Oconomowoc Electroplating Groundwater Treatment Facility*". That report will be submitted by March 15, 1999.

OCONOMOWOC GROUNDWATER TREATMENT PLANT

Weekly Sampling Results

Date: 2-1-99

Parameter	Influent	After Metals Package	After Stripper	Between Carbon Filters	Effluent	WDNR Site Permit ug/l
pH	7	11	N/A	N/A	NT	Monitor
TSS	NT	NT	NT	NT	NT	Monitor
Arsenic	ND	NT	NT	NT	ND	5
Barium	100	NT	NT	NT	10	400
Cadmium	ND	NT	NT	NT	ND	0.5
Cadmium Total	ND	NT	NT	NT	ND	Monitor
Recoverable						
Chromium +6	ND	NT	NT	NT	ND	Monitor
Chromium Total	ND	NT	NT	NT	ND	10
Copper	ND	NT	NT	NT	10	Monitor
Iron	1100	NT	NT	NT	400	Monitor
Lead	2.4	NT	NT	NT	ND	1.5
Manganese	200	NT	NT	NT	9	Monitor
Mercury	ND	NT	NT	NT	ND	0.2
Nickel	50	NT	NT	NT	16	20
Selenium	ND	NT	NT	NT	ND	10
Silver	ND	NT	NT	NT	ND	10
Thallium	ND	NT	NT	NT	ND	0.4
Zinc	70	NT	NT	NT	80	Monitor
Cyanide	ND	NT	NT	NT	ND	40
Cyanide Free	ND	NT	NT	NT	ND	Monitor
1,1-dichloroethane	30	NT	NT	NT	0.4	85
1,2-dichloroethane	ND	NT	NT	NT	ND	0.5
1,1-dichloroethene	17	NT	NT	NT	ND	0.7
1,2-dichloroethene cis	56	NT	NT	NT	ND	7
1,2-dichloroethene trans	17	NT	NT	NT	ND	20
Ethylbenzene	ND	NT	NT	NT	ND	140
Methylene Chloride	ND	NT	NT	NT	ND	0.5
Tetrachloroethene	11	NT	NT	NT	ND	0.5
Toluene	ND	NT	NT	NT	ND	68
1,1,1-trichloroethane	268	NT	NT	NT	1.1	40
1,1,2-trichloroethane	ND	NT	NT	NT	ND	0.5
TCE	687	NT	NT	NT	0.9	0.5
Vinyl Chloride	ND	NT	NT	NT	ND	0.2
Xylene Total	4.9	NT	NT	NT	ND	124
COD	NT	NT	NT	NT	NT	Monitor
Phosphorus total	NT	NT	NT	NT	NT	Monitor
Nitrate + Nitrite	NT	NT	NT	NT	NT	Monitor
Ammonia Nitrogen	NT	NT	NT	NT	NT	Monitor

mg/l

mg/l

mg/l

mg/l

mg/l

OCONOMOWOC GROUNDWATER TREATMENT PLANT

Weekly Sampling Results

Date: 2-8-99

Parameter	Influent	After Metals Package	After Stripper	Between Carbon Filters	Effluent	WDNR Site Permit ug/l
pH	7.2	11	N/A	N/A	7.9	Monitor
TSS	NT	NT	NT	NT	NT	Monitor
Arsenic	ND	NT	NT	NT	ND	5
Barium	100	NT	NT	NT	20	400
Cadmium	ND	NT	NT	NT	ND	0.5
Cadmium Total	ND	NT	NT	NT	ND	Monitor
Recoverable						
Chromium +6	ND	NT	NT	NT	ND	Monitor
Chromium Total	ND	NT	NT	NT	ND	10
Copper	10	NT	NT	NT	20	Monitor
Iron	900	NT	NT	NT	500	Monitor
Lead	ND	NT	NT	NT	ND	1.5
Manganese	200	NT	NT	NT	ND	Monitor
Mercury	ND	NT	NT	NT	ND	0.2
Nickel	47	NT	NT	NT	ND	20
Selenium	ND	NT	NT	NT	ND	10
Silver	ND	NT	NT	NT	ND	10
Thallium	ND	NT	NT	NT	ND	0.4
Zinc	ND	NT	NT	NT	20	Monitor
Cyanide	ND	NT	NT	NT	ND	40
Cyanide Free	ND	NT	NT	NT	ND	Monitor
1,1-dichloroethane	33	NT	NT	NT	ND	85
1,2-dichloroethane	ND	NT	NT	NT	ND	0.5
1,1-dichloroethene	58	NT	NT	NT	ND	0.7
1,2-dichloroethene cis	69	NT	NT	NT	0.5	7
1,2-dichloroethene trans	22	NT	NT	NT	ND	20
Ethylbenzene	ND	NT	NT	NT	ND	140
Methylene Chloride	ND	NT	NT	NT	ND	0.5
Tetrachloroethene	12	NT	NT	NT	ND	0.5
Toluene	ND	NT	NT	NT	ND	68
1,1,1-trichloroethane	339	NT	NT	NT	1.2	40
1,1,2-trichloroethane	ND	NT	NT	NT	ND	0.5
TCE	834	NT	NT	NT	1.1	0.5
Vinyl Chloride	ND	NT	NT	NT	ND	0.2
Xylene Total	ND	NT	NT	NT	ND	124
COD	NT	NT	NT	NT	NT	Monitor
Phosphorus total	NT	NT	NT	NT	NT	Monitor
Nitrate + Nitrite	NT	NT	NT	NT	NT	Monitor
Ammonia Nitrogen	NT	NT	NT	NT	NT	Monitor

mg/l

mg/l

mg/l

mg/l

mg/l

OCONOMOWOC GROUNDWATER TREATMENT PLANT

Weekly Sampling Results

Date: 2-15-99

Parameter	Influent	After Metals Package	After Stripper	Between Carbon Filters	Effluent	WDNR Site Permit ug/l
pH	7.1	11	N/A	N/A	7.9	Monitor
TSS	3.5	NT	NT	NT	ND	Monitor
Arsenic	ND	NT	NT	NT	ND	5
Barium	100	NT	NT	NT	20	400
Cadmium	1.4	NT	NT	NT	ND	0.5
Cadmium Total Recoverable	ND	NT	NT	NT	ND	Monitor
Chromium +6	ND	NT	NT	NT	ND	Monitor
Chromium Total	ND	NT	NT	NT	ND	10
Copper	30	NT	NT	NT	30	Monitor
Iron	900	NT	NT	NT	100	Monitor
Lead	8.9	NT	NT	NT	1.2	1.5
Manganese	200	NT	NT	NT	20	Monitor
Mercury	ND	NT	NT	NT	ND	0.2
Nickel	42	NT	NT	NT	ND	20
Selenium	ND	NT	NT	NT	ND	10
Silver	ND	NT	NT	NT	ND	10
Thallium	ND	NT	NT	NT	ND	0.4
Zinc	ND	NT	NT	NT	30	Monitor
Cyanide	ND	NT	NT	NT	ND	40
Cyanide Free	ND	NT	NT	NT	ND	Monitor
1,1-dichloroethane	31	NT	ND	NT	ND	85
1,2-dichloroethane	ND	NT	ND	NT	ND	0.5
1,1-dichloroethene	17	NT	ND	NT	ND	0.7
1,2-dichloroethene cis	59	NT	ND	NT	ND	7
1,2-dichloroethene trans	17	NT	ND	NT	ND	20
Ethylbenzene	ND	NT	ND	NT	ND	140
Methylene Chloride	ND	NT	ND	NT	ND	0.5
Tetrachloroethene	9.9	NT	ND	NT	ND	0.5
Toluene	ND	NT	ND	NT	ND	68
1,1,1-trichloroethane	273	NT	ND	NT	ND	40
1,1,2-trichloroethane	ND	NT	ND	NT	ND	0.5
TCE	731	NT	0.5	NT	0.5	0.5
Vinyl Chloride	ND	NT	ND	NT	ND	0.2
Xylene Total	ND	NT	ND	NT	ND	124
COD	19	NT	NT	NT	14	Monitor
Phosphorus total	NT	NT	NT	NT	ND	Monitor
Nitrate + Nitrite	NT	NT	NT	NT	0.16	Monitor
Ammonia Nitrogen	NT	NT	NT	NT	0.08	Monitor

mg/l

mg/l

mg/l

mg/l

mg/l

OCONOMOWOC GROUNDWATER TREATMENT PLANT

Weekly Sampling Results

Date: 2-25-99

Parameter	Influent	After Metals Package	After Stripper	Between Carbon Filters	Effluent	WDNR Site Permit ug/l
pH	7.3	11	N/A	N/A	7.4	Monitor
TSS	NT	NT	NT	NT	NT	Monitor
Arsenic	ND	NT	NT	NT	ND	5
Barium	100	NT	NT	NT	30	400
Cadmium	ND	NT	NT	NT	ND	0.5
Cadmium Total Recoverable	ND	NT	NT	NT	ND	Monitor
Chromium +6	ND	NT	NT	NT	ND	Monitor
Chromium Total	ND	NT	NT	NT	ND	10
Copper	ND	NT	NT	NT	ND	Monitor
Iron	3000	NT	NT	NT	400	Monitor
Lead	ND	NT	NT	NT	ND	1.5
Manganese	200	NT	NT	NT	100	Monitor
Mercury	ND	NT	NT	NT	ND	0.2
Nickel	53	NT	NT	NT	13	20
Selenium	ND	NT	NT	NT	ND	10
Silver	ND	NT	NT	NT	ND	10
Thallium	ND	NT	NT	NT	ND	0.4
Zinc	50	NT	NT	NT	ND	Monitor
Cyanide	ND	NT	NT	NT	ND	40
Cyanide Free	ND	NT	NT	NT	ND	Monitor
1,1-dichloroethane	46	NT	NT	NT	ND	85
1,2-dichloroethane	ND	NT	NT	NT	ND	0.5
1,1-dichloroethene	30	NT	NT	NT	ND	0.7
1,2-dichloroethene cis	928	NT	NT	NT	ND	7
1,2-dichloroethene trans	26	NT	NT	NT	ND	20
Ethylbenzene	ND	NT	NT	NT	ND	140
Methylene Chloride	ND	NT	NT	NT	ND	0.5
Tetrachloroethene	10	NT	NT	NT	ND	0.5
Toluene	ND	NT	NT	NT	ND	68
1,1,1-trichloroethane	574	NT	NT	NT	ND	40
1,1,2-trichloroethane	ND	NT	NT	NT	ND	0.5
TCE	1290	NT	NT	NT	0.4	0.5
Vinyl Chloride	ND	NT	NT	NT	ND	0.2
Xylene Total	ND	NT	NT	NT	ND	124
COD	NT	NT	NT	NT	NT	Monitor
Phosphorus total	NT	NT	NT	NT	NT	Monitor
Nitrate + Nitrite	NT	NT	NT	NT	NT	Monitor
Ammonia Nitrogen	NT	NT	NT	NT	NT	Monitor

mg/l

mg/l

mg/l

mg/l

mg/l

FLOW FROM EXTRACTION WELLS

YEAR: 1999					
MONTH: FEB.	FE-100 FLOW	TOTAL DAY'S	DAILY FLOW		
DAY	TOTALIZER	FLOW (GAL.)	MGD		
1	1,767,818.00	29,948.25	0.030	SHUT DOWN	
2	1,797,766.25	21,147.88	0.021		
3	1,818,914.13	23,250.25	0.023		
4	1,842,164.38	20,829.12	0.021		
5	1,862,993.50	25,424.00	0.025		
6	1,888,417.50	25,007.00	0.025		
7	1,913,424.50	22,294.50	0.022		
8	1,935,719.00	24,052.75	0.024		
9	1,959,771.75	29,580.88	0.030		
10	1,989,352.63	21,756.37	0.022		
11	2,011,109.00	25,172.00	0.025		
12	2,036,281.00	19,045.50	0.019		
13	2,055,326.50	29,780.88	0.030		
14	2,085,107.38	19,658.37	0.020		
15	2,104,765.75	20,005.75	0.020		
16	2,124,771.50	28,629.50	0.029		
17	2,153,401.00	17,439.00	0.017		
18	2,170,840.00	23,975.00	0.024		
19	2,194,815.00	10,824.25	0.011		
20	2,205,639.25	3,882.25	0.004		
21	2,209,521.50	12,555.75	0.013		SHUT DOWN
22	2,222,077.25	20,149.50	0.020		
23	2,242,226.75	18,091.50	0.018		
24	2,260,318.25	13,217.50	0.013		
25	2,273,535.75	15,251.50	0.015		
26	2,288,787.25	14,673.75	0.015		
27	2,303,461.00	8,487.75	0.008		
28	2,311,948.75	11,803.00	0.012		
MAR. 1	2,323,751.75				
TOTAL			0.556		
AVERAGE			0.020		

FLOW FROM EQT-100

YEAR: 1999				
MONTH: FEB.	FE-112 FLOW TOTALIZER	TOTAL DAY'S FLOW (GAL.)	DAILY FLOW MGD	
1	6,653,538.00	36,930.00	0.037	SHUT DOWN
2	6,690,468.00	41,565.50	0.042	
3	6,732,033.50	36,500.50	0.037	
4	6,768,534.00	33,259.50	0.033	
5	6,801,793.50	45,012.00	0.045	
6	6,846,805.50	43,270.50	0.043	
7	6,890,076.00	35,320.50	0.035	
8	6,925,396.50	40,041.00	0.040	
9	6,965,437.50	53,014.00	0.053	
10	7,018,451.50	39,652.50	0.040	
11	7,058,104.00	45,052.00	0.045	
12	7,103,156.00	31,572.50	0.032	
13	7,134,728.50	50,025.50	0.050	
14	7,184,754.00	33,597.50	0.034	
15	7,218,351.50	34,540.50	0.035	
16	7,252,892.00	45,253.00	0.045	
17	7,298,145.00	26,859.50	0.027	
18	7,325,004.50	53,238.00	0.053	
19	7,378,242.50	35,828.00	0.036	
20	7,414,070.50	55,612.50	0.056	
21	7,469,683.00	36,074.50	0.036	
22	7,505,757.50	32,968.50	0.033	SHUT DOWN
23	7,538,726.00	39,131.00	0.039	
24	7,577,857.00	33,242.50	0.033	
25	7,611,099.50	47,141.50	0.047	
26	7,658,241.00	45,601.00	0.046	
27	7,703,842.00	41,784.00	0.042	
28	7,745,626.00	44,766.00	0.045	
MAR. 1	7,790,392.00			
TOTAL			1.139	
AVERAGE			0.041	

EFFLUENT FLOW FROM PLANT

YEAR: 1999					
MONTH: FEB.	NPDES STATION	TOTAL DAY'S	X2	DAILY FLOW	
DAY	TOTALIZER	FLOW (GAL.)		MGD	
1	1,681,518.13	15,616.75	31,233.50	0.031	SHUT DOWN
2	1,697,134.88	14,742.25	29,484.50	0.029	
3	1,711,877.13	15,183.37	30,366.74	0.030	
4	1,727,060.50	12,653.88	25,307.76	0.025	
5	1,739,714.38	19,628.50	39,257.00	0.039	
6	1,759,342.88	17,938.62	35,877.24	0.036	
7	1,777,281.50	13,784.75	27,569.50	0.028	
8	1,791,066.25	14,675.00	29,350.00	0.029	
9	1,805,741.25	19,482.75	38,965.50	0.039	
10	1,825,224.00	15,503.88	31,007.76	0.031	
11	1,840,727.88	15,955.87	31,911.74	0.032	
12	1,856,683.75	12,802.75	25,605.50	0.026	
13	1,869,486.50	17,587.50	35,175.00	0.035	
14	1,887,074.00	11,211.50	22,423.00	0.022	
15	1,898,285.50	13,361.13	26,722.26	0.027	
16	1,911,646.63	17,362.50	34,725.00	0.035	
17	1,929,009.13	6,414.50	12,829.00	0.013	
18	1,935,423.63	11,290.37	22,580.74	0.023	
19	1,946,714.00	2,514.13	5,028.26	0.005	
20	1,949,228.13	6,992.25	13,984.50	0.014	
21	1,956,220.38	11,381.00	22,762.00	0.023	
22	1,967,601.38	9,413.87	18,827.74	0.019	SHUT DOWN
23	1,977,015.25	6,598.88	13,197.76	0.013	
24	1,983,614.13	4,568.37	9,136.74	0.009	
25	1,988,182.50	7,449.25	14,898.50	0.015	
26	1,995,631.75	6,590.38	13,180.76	0.013	
27	2,002,222.13	4,455.50	8,911.00	0.009	
28	2,006,677.63	10,313.62	20,627.24	0.021	
MAR. 1	2,016,991.25				
TOTAL				0.671	
AVERAGE				0.024	

APL Environmental

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James Chang
 Oconomowoc Groundwater Treatment Plant
 2572 Oak St.
 Ashippun, WI 53003

INORGANIC REPORT

WDNR# 241340550

INVOICE NUMBER 990095
 DATE REPORTED: 25-Feb-99
 DATE RECEIVED: 09-Feb-99
 SAMPLE TEMP (C): Rec On Ice
 PROJECT ID:
 PROJECT NAME:

Test	Result	Units	RQ	LOD	LOQ	Method	Analyst	Date Anal	QC#	Comments
Nova Sample Number: 14006										
Client ID: 990208WA01P										
							Collection: 2/8/99	Time: 13:00		
Sample Description:										
Arsenic - Furnace AA	<9.9	ug/l	J RJ	9.9	31	206.2	dmd	2/17/99	990287	
Barium - ICAP	0.13	mg/l	RJ	0.003	0.010	200.7	dmd	2/17/99	990277	
Cadmium - Furnace AA	<0.7	ug/l	J TTR	0.7	2.2	213.2	dmd	2/17/99	990285	
Chromium, Total - ICAP	<0.01	mg/l	J RJ	0.01	0.03	200.7	dmd	2/17/99	990277	
Copper - ICAP	0.013	mg/l	J RJ	0.008	0.03	200.7	dmd	2/17/99	990277	
Iron - ICAP	0.86	mg/l	RJ	0.071	0.2	200.7	dmd	2/17/99	990277	
Lead - Furnace AA	<1.1	ug/l	J RJ	1.1	3.5	239.2	dmd	2/17/99	990280	
Manganese - ICAP	0.20	mg/l	RJ	0.009	0.03	200.7	dmd	2/17/99	990277	
Mercury CV	<0.0002	mg/l	J RJ	0.0002	0.0006	245.1	dmd	2/11/99	990244	
Nickel - ICAP	47	ug/l	RJ	11	35	200.7	dmd	2/17/99	990277	
Selenium - Furnace AA	<7.8	ug/l	J RJ	7.8	25	270.2	dmd	2/17/99	990288	
Silver - ICAP	<0.006	mg/l	J RJ	0.006	0.02	200.7	dmd	2/17/99	990277	
Thallium - Furnace AA	<5.0	ug/l	J RJ	5	16	279.2	dmd	2/10/99	990223	
Zinc - ICAP	<0.021	mg/l	J RJ	0.021	0.07	200.7	dmd	2/17/99	990277	
Chromium, Hexavalent	<10	ug/l	J	10	32	SM 3500D	12830	2/9/99	990224	
Cyanide, Amenable	<0.018	mg/l	J	0.018	0.06	335.2	van	2/19/99	990298	
Cyanide, Total	<0.018	mg/l	J	0.018	0.06	335.2	van	2/19/99	990297	
pH (water)	7.2	s.u.	#			150.1	dmd	2/8/99	990246	analyzed at ogtp

Nova Sample Number: 14007

Client ID: 990208WA09R

Collection: 2/8/99

Time: 13:25

Sample Description:

Arsenic - Furnace AA	<9.9	ug/l	J RJ	9.9	31	206.2	dmd	2/17/99	990287	
Barium - ICAP	0.016	mg/l	RJ	0.003	0.010	200.7	dmd	2/17/99	990277	
Cadmium - Furnace AA	<0.7	ug/l	J TTR	0.7	2.2	213.2	dmd	2/17/99	990285	
Chromium, Total - ICAP	<0.01	mg/l	J RJ	0.01	0.03	200.7	dmd	2/17/99	990277	
Copper - ICAP	0.019	mg/l	J RJ	0.008	0.03	200.7	dmd	2/17/99	990277	
Iron - ICAP	0.45	mg/l	RJ	0.071	0.2	200.7	dmd	2/17/99	990277	
Lead - Furnace AA	<1.1	ug/l	J RJ	1.1	3.5	239.2	dmd	2/17/99	990280	
Manganese - ICAP	<0.009	mg/l	J RJ	0.009	0.03	200.7	dmd	2/17/99	990277	
Mercury CV	<0.0002	mg/l	J RJ	0.0002	0.0006	245.1	dmd	2/11/99	990244	
Nickel - ICAP	<11	ug/l	J RJ	11	35	200.7	dmd	2/17/99	990277	

APL Environmental

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INORGANIC REPORT

WDNR# 241340550

INVOICE NUMBER 990095
 DATE REPORTED: 25-Feb-99
 DATE RECEIVED: 09-Feb-99
 SAMPLE TEMP (C): Rec On Ice
 PROJECT ID:
 PROJECT NAME:

James Chang
 Oconomowoc Groundwater Treatment Plant
 2572 Oak St.
 Ashippun, WI 53003

Test	Result	Units	RQ	LOD	LOQ	Method	Analyst	Date Anal	QC#	Comments
Selenium - Furnace AA	<7.8	ug/l	J RJ	7.8	25	270.2	dmd	2/17/99	990288	
Silver - ICAP	<0.006	mg/l	J RJ	0.006	0.02	200.7	dmd	2/17/99	990277	
Thallium - Furnace AA	<5.0	ug/l	J RJ	5	16	279.2	drnd	2/10/99	990223	
Zinc - ICAP	0.023	mg/l	J RJ	0.021	0.07	200.7	dmd	2/17/99	990277	

Nova Sample Number: 14008

Client ID: 990208WA02P

pH (water) 9.9 s.u. # 150.1

Collection: 2/8/99 Time: 13:10
 Sample Description:

dmd 2/8/99 990246 analyzed at ogtp

Nova Sample Number: 14009

Client ID: 990208WA03P

pH (water) 11.1 s.u. # 150.1

Collection: 2/8/99 Time: 13:15
 Sample Description:

dmd 2/8/99 990246 analyzed at ogtp

Nova Sample Number: 14010

Client ID: 990208WA05P

pH (water) 7.1 s.u. # 150.1

Collection: 2/8/99 Time: 13:20
 Sample Description:

dmd 2/8/99 990246 analyzed at ogtp

Nova Sample Number: 14011

Client ID: 990208WA09P

Chromium, Hexavalent <10 ug/l J 10 32 SM 3500D 12830 2/9/99 990224
 Cyanide, Amenable <0.018 mg/l J 0.018 0.06 335.2 van 2/19/99 990298
 Cyanide, Total <0.018 mg/l J 0.018 0.06 335.2 van 2/19/99 990297
 pH (water) 7.9 s.u. # 150.1 dmd 2/8/99 990246

Collection: 2/8/99 Time: 13:35
 Sample Description:

analyzed at ogtp

APL Environmental

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INORGANIC REPORT

WDNR# 241340550

James Chang
Oconomowoc Groundwater Treatment Plant
2572 Oak St.
Ashippun, WI 53003

INVOICE NUMBER 990095
DATE REPORTED: 25-Feb-99
DATE RECEIVED: 09-Feb-99
SAMPLE TEMP (C): Rec On Ice
PROJECT ID:
PROJECT NAME:

Test	Result	Units	RQ	LOD	LOQ	Method	Analyst	Date Anal	QC#	Comments
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Approved By: James Chang /out Date: 2/25/99
James Chang, Ph.D., Lab Director

RJ Result expressed as Total.

TTR Result expressed as total and total recoverable.

MDL: Method Detection Limit determined by 40CFR Part 136 Appendix B

LOQ = 10 (S) x Dilution Factor, where "S" is the Standard Deviation from the MDL Study

LOD = 3.143 (S) x Dilution Factor, where "S" is the Standard Deviation from the MDL Study

*Rounding Rules: Three significant figures were used for concentrations above 99 ug/L, two significant figures for concentrations between 1-99 ug/L, and one significant figure for lower concentrations.
DNR Analytical Detection Limit Guidance, April 1995.*

APL Environmental

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James Chang
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ORGANIC REPORT

WDNR# 241340550

BATCH NUMBER: 990095
DATE REPORTED: 11-Feb-99
DATE RECEIVED: 09-Feb-99
SAMPLE TEMP (C): Rec On Ice
PROJECT ID:
PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
Sample Number: 14006 QC Prep Batch Number: 990239 Sample analyzed within 1 Day(s) from collection. Client ID: 990208WA01P Sample Description: Collection: 2/8/99 Time: 13:00										
1,1,1,2-Tetrachloroethane	< 2	ug/l	2	6.4	ns	10		8260	srh	2/9/99
1,1,1-Trichloroethane	339	ug/l	2.3	7.3	40	10		8260	srh	2/9/99
1,1,2,2-Tetrachloroethane	< 2.9	ug/l	2.9	9.2	0.02	10		8260	srh	2/9/99
1,1,2-Trichloroethane	< 2.9	ug/l	2.9	9.2	0.5	10		8260	srh	2/9/99
1,1-Dichloroethane	33	ug/l	1.5	4.8	85	10		8260	srh	2/9/99
1,1-Dichloroethene	58	ug/l	3.6	11	0.7	10		8260	srh	2/9/99
1,1-Dichloropropene	< 4.9	ug/l	4.9	16	ns	10		8260	srh	2/9/99
1,2,3-Trichlorobenzene	< 2.2	ug/l	2.2	7	ns	10		8260	srh	2/9/99
1,2,3-Trichloropropane	< 6	ug/l	6	19	ns	10		8260	srh	2/9/99
1,2,4-Trichlorobenzene	< 1.6	ug/l	1.6	5.1	14	10		8260	srh	2/9/99
1,2,4-Trimethylbenzene	< 2.9	ug/l	2.9	9.2	ns	10		8260	srh	2/9/99
1,2-Dibromoethane	< 2.4	ug/l	2.4	7.6	0.005	10		8260	srh	2/9/99
1,2-Dichlorobenzene	< 2	ug/l	2	6.4	60	10		8260	srh	2/9/99
1,2-Dichloroethane	< 1.9	ug/l	1.9	6	0.5	10		8260	srh	2/9/99
1,2-Dichloropropane	< 2.3	ug/l	2.3	7.3	0.5	10		8260	srh	2/9/99
1,3,5-Trimethylbenzene	< 2.3	ug/l	2.3	7.3	ns	10		8260	srh	2/9/99
1,3-Dichlorobenzene	< 1.9	ug/l	1.9	6	125	10		8260	srh	2/9/99
1,3-Dichloropropane	< 2.1	ug/l	2.1	6.7	ns	10		8260	srh	2/9/99
1,4-Dichlorobenzene	< 1.5	ug/l	1.5	4.8	15	10		8260	srh	2/9/99
1,2-Dibromo-3-chloropropan	< 5.9	ug/l	5.9	19	0.02	10		8260	srh	2/9/99
2,2-Dichloropropane	< 4	ug/l	4	13	ns	10		8260	srh	2/9/99
2-Butanone (MEK)	< 14	ug/l	14	44	90	10		8260	srh	2/9/99
2-Chloroethyl Vinyl Ether	< 2.9	ug/l	2.9	9.2	ns	10		8260	srh	2/9/99
2-Chlorotoluene	< 1.5	ug/l	1.5	4.8	ns	10		8260	srh	2/9/99
4-Chlorotoluene	< 2.5	ug/l	2.5	8	ns	10		8260	srh	2/9/99
4-Methyl-2-Pentanone	< 8.4	ug/l	8.4	27	50	10		8260	srh	2/9/99
Acetone	< 16	ug/l	16	49	200	10		8260	srh	2/9/99
Benzene	< 1.9	ug/l	1.9	6	0.5	10		8260	srh	2/9/99
Bromobenzene	< 1.9	ug/l	1.9	6	ns	10		8260	srh	2/9/99
Bromochloromethane	< 3.4	ug/l	3.4	11	ns	10		8260	srh	2/9/99
Bromodichloromethane	< 2.6	ug/l	2.6	8.3	0.06	10		8260	srh	2/9/99
Bromoform	< 4.7	ug/l	4.7	15	0.44	10		8260	srh	2/9/99
Bromomethane	< 2.1	ug/l	2.1	6.7	1	10		8260	srh	2/9/99
Carbon tetrachloride	< 2.2	ug/l	2.2	7	0.5	10		8260	srh	2/9/99
Chlorobenzene	< 2	ug/l	2	6.4	20	10		8260	srh	2/9/99
Chloroethane	< 12	ug/l	12	37	80	10		8260	srh	2/9/99
Chloroform	< 2.7	ug/l	2.7	8.6	0.6	10		8260	srh	2/9/99
Chloromethane	< 7.7	ug/l	7.7	24	0.3	10		8260	srh	2/9/99
cis-1,2-Dichloroethene	69	ug/l	2	6.4	7	10		8260	srh	2/9/99
cis-1,3-Dichloropropene	< 2.4	ug/l	2.4	7.6	0.02	10		8260	srh	2/9/99

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James Chang
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ORGANIC REPORT

WDNR# 241340550

BATCH NUMBER: 990095
DATE REPORTED: 11-Feb-99
DATE RECEIVED: 09-Feb-99
SAMPLE TEMP (C): Rec On Ice
PROJECT ID:
PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
Dibromochloromethane	< 2.1	ug/l	2.1	6.7	6	10		8260	srh	2/9/99
Dibromomethane	< 3.5	ug/l	3.5	11	ns	10		8260	srh	2/9/99
Dichlorodifluoromethane	< 3.6	ug/l	3.6	11	200	10		8260	srh	2/9/99
Ethylbenzene	< 1.6	ug/l	1.6	5.1	140	10		8260	srh	2/9/99
Hexachlorobutadiene	< 2.2	ug/l	2.2	7	ns	10		8260	srh	2/9/99
Isopropyl Ether	< 3.2	ug/l	3.2	10	ns	10		8260	srh	2/9/99
Isopropylbenzene	< 1.6	ug/l	1.6	5.1	ns	10		8260	srh	2/9/99
m&p-xylene	< 3.6	ug/l	3.6	11	124	10		8260	srh	2/9/99
Methyl-t-butyl ether	< 2.1	ug/l	2.1	6.7	12	10		8260	srh	2/9/99
Methylene chloride	< 7.6	ug/l	7.6	24	0.5	10		8260	srh	2/9/99
n-Butylbenzene	< 2.3	ug/l	2.3	7.3	ns	10		8260	srh	2/9/99
n-Propylbenzene	< 2.5	ug/l	2.5	8	ns	10		8260	srh	2/9/99
Naphthalene	< 4.6	ug/l	4.6	15	8	10		8260	srh	2/9/99
o-xylene	< 1.8	ug/l	1.8	5.7	124	10		8260	srh	2/9/99
p-Isopropyltoluene	< 1.8	ug/l	1.8	5.7	ns	10		8260	srh	2/9/99
sec-Butylbenzene	< 3	ug/l	3	9.5	ns	10		8260	srh	2/9/99
Styrene	< 2.1	ug/l	2.1	6.7	10	10		8260	srh	2/9/99
tert-Butylbenzene	< 2	ug/l	2	6.4	ns	10		8260	srh	2/9/99
Tetrachloroethene	12	ug/l	2.9	9.2	0.5	10		8260	srh	2/9/99
Toluene	< 3.3	ug/l	3.3	10	68.6	10		8260	srh	2/9/99
trans-1,2-Dichloroethene	22	ug/l	1.6	5.1	20	10		8260	srh	2/9/99
trans-1,3-Dichloropropene	< 2	ug/l	2	6.4	0.02	10		8260	srh	2/9/99
Trichloroethene	834	ug/l	1.6	5.1	0.5	10		8260	srh	2/9/99
Trichlorofluoromethane	< 3.4	ug/l	3.4	11	ns	10		8260	srh	2/9/99
Vinyl chloride	< 2.1	ug/l	2.1	6.7	0.02	10		8260	srh	2/9/99

Sample Number: 14011 QC Prep Batch Number: 990239 Sample analyzed within 1 Day(s) from collection

Client ID: 990208WA09P Sample Description: Collection: 2/8/99 Time: 13:35

1,1,1,2-Tetrachloroethane	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	2/9/99
1,1,1-Trichloroethane	1.2	ug/l	0.2	0.7	40	1		8260	srh	2/9/99
1,1,2,2-Tetrachloroethane	< 0.3	ug/l	0.3	0.9	0.02	1		8260	srh	2/9/99
1,1,2-Trichloroethane	< 0.3	ug/l	0.3	0.9	0.5	1		8260	srh	2/9/99
1,1-Dichloroethane	< 0.2	ug/l	0.2	0.5	85	1		8260	srh	2/9/99
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.1	0.7	1		8260	srh	2/9/99
1,1-Dichloropropene	< 0.5	ug/l	0.5	1.6	ns	1		8260	srh	2/9/99
1,2,3-Trichlorobenzene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
1,2,3-Trichloropropane	< 0.6	ug/l	0.6	1.9	ns	1		8260	srh	2/9/99
1,2,4-Trichlorobenzene	< 0.2	ug/l	0.2	0.5	14	1		8260	srh	2/9/99
1,2,4-Trimethylbenzene	< 0.3	ug/l	0.3	0.9	ns	1		8260	srh	2/9/99
1,2-Dibromoethane	< 0.2	ug/l	0.2	0.8	0.005	1		8260	srh	2/9/99
1,2-Dichlorobenzene	< 0.2	ug/l	0.2	0.6	60	1		8260	srh	2/9/99
1,2-Dichloroethane	< 0.2	ug/l	0.2	0.6	0.5	1		8260	srh	2/9/99

James Chang
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WDNR# 241340550

BATCH NUMBER: 990095
 DATE REPORTED: 11-Feb-99
 DATE RECEIVED: 09-Feb-99
 SAMPLE TEMP (C): Rec On Ice
 PROJECT ID:
 PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
1,2-Dichloropropane	< 0.2	ug/l	0.2	0.7	0.5	1		8260	srh	2/9/99
1,3,5-Trimethylbenzene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
1,3-Dichlorobenzene	< 0.2	ug/l	0.2	0.6	125	1		8260	srh	2/9/99
1,3-Dichloropropane	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
1,4-Dichlorobenzene	< 0.2	ug/l	0.2	0.5	15	1		8260	srh	2/9/99
12Dibromo-3-chloropropan	< 0.6	ug/l	0.6	1.9	0.02	1		8260	srh	2/9/99
2,2-Dichloropropane	< 0.4	ug/l	0.4	1.3	ns	1		8260	srh	2/9/99
2-Butanone (MEK)	< 1.4	ug/l	1.4	4.4	90	1		8260	srh	2/9/99
2-Chloroethyl Vinyl Ether	< 0.3	ug/l	0.3	0.9	ns	1		8260	srh	2/9/99
2-Chlorotoluene	< 0.2	ug/l	0.2	0.5	ns	1		8260	srh	2/9/99
4-Chlorotoluene	< 0.3	ug/l	0.3	0.8	ns	1		8260	srh	2/9/99
4-Methyl-2-Pentanone	< 0.8	ug/l	0.8	2.7	50	1		8260	srh	2/9/99
Acetone	< 1.6	ug/l	1.6	4.9	200	1		8260	srh	2/9/99
Benzene	< 0.2	ug/l	0.2	0.6	0.5	1		8260	srh	2/9/99
Bromobenzene	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	2/9/99
Bromochloromethane	< 0.3	ug/l	0.3	1.1	ns	1		8260	srh	2/9/99
Bromodichloromethane	2.9	ug/l	0.3	0.8	0.06	1		8260	srh	2/9/99
Bromoform	< 0.5	ug/l	0.5	1.5	0.44	1		8260	srh	2/9/99
Bromomethane	< 0.2	ug/l	0.2	0.7	1	1		8260	srh	2/9/99
Carbon tetrachloride	< 0.2	ug/l	0.2	0.7	0.5	1		8260	srh	2/9/99
Chlorobenzene	< 0.2	ug/l	0.2	0.6	20	1		8260	srh	2/9/99
Chloroethane	< 1.2	ug/l	1.2	3.7	80	1		8260	srh	2/9/99
Chloroform	5.9	ug/l	0.3	0.9	0.6	1		8260	srh	2/9/99
Chloromethane	< 0.8	ug/l	0.8	2.4	0.3	1		8260	srh	2/9/99
cis-1,2-Dichloroethene	0.5	ug/l	0.2	0.6	7	1	J	8260	srh	2/9/99
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.8	0.02	1		8260	srh	2/9/99
Dibromochloromethane	1.7	ug/l	0.2	0.7	6	1		8260	srh	2/9/99
Dibromomethane	< 0.4	ug/l	0.4	1.1	ns	1		8260	srh	2/9/99
Dichlorodifluoromethane	< 0.4	ug/l	0.4	1.1	200	1		8260	srh	2/9/99
Ethylbenzene	< 0.2	ug/l	0.2	0.5	140	1		8260	srh	2/9/99
Hexachlorobutadiene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
Isopropyl Ether	< 0.3	ug/l	0.3	1	ns	1		8260	srh	2/9/99
Isopropylbenzene	< 0.2	ug/l	0.2	0.5	ns	1		8260	srh	2/9/99
m&p-xylene	< 0.4	ug/l	0.4	1.1	124	1		8260	srh	2/9/99
Methyl-t-butyl ether	< 0.2	ug/l	0.2	0.7	12	1		8260	srh	2/9/99
Methylene chloride	< 0.8	ug/l	0.8	2.4	0.5	1		8260	srh	2/9/99
n-Butylbenzene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
n-Propylbenzene	< 0.3	ug/l	0.3	0.8	ns	1		8260	srh	2/9/99
Naphthalene	< 0.5	ug/l	0.5	1.5	8	1		8260	srh	2/9/99
o-xylene	< 0.2	ug/l	0.2	0.6	124	1		8260	srh	2/9/99
p-Isopropyltoluene	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	2/9/99
sec-Butylbenzene	< 0.3	ug/l	0.3	1	ns	1		8260	srh	2/9/99
Styrene	< 0.2	ug/l	0.2	0.7	10	1		8260	srh	2/9/99

APL Environmental

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James Chang
Oconomowoc Groundwater Treatment Plant
2572 Oak St.
Ashippun, WI 53003

ORGANIC REPORT

WDNR# 241340550

BATCH NUMBER: 990095
DATE REPORTED: 11-Feb-99
DATE RECEIVED: 09-Feb-99
SAMPLE TEMP (C): Rec On Ice
PROJECT ID:
PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
tert-Butylbenzene	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	2/9/99
Tetrachloroethene	< 0.3	ug/l	0.3	0.9	0.5	1		8260	srh	2/9/99
Toluene	< 0.3	ug/l	0.3	1	68.6	1		8260	srh	2/9/99
trans-1,2-Dichloroethene	< 0.2	ug/l	0.2	0.5	20	1		8260	srh	2/9/99
trans-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.6	0.02	1		8260	srh	2/9/99
Trichloroethene	1.1	ug/l	0.2	0.5	0.5	1		8260	srh	2/9/99
Trichlorofluoromethane	< 0.3	ug/l	0.3	1.1	ns	1		8260	srh	2/9/99
Vinyl chloride	< 0.2	ug/l	0.2	0.7	0.02	1		8260	srh	2/9/99

Sample Number: 14012

QC Prep Batch Number: 990239

Sample analyzed within 1 Day(s) from collection.

Client ID: trip blank

Sample Description:

Collection: 2/8/99 Time:

1,1,1,2-Tetrachloroethane	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	2/9/99
1,1,1-Trichloroethane	< 0.2	ug/l	0.2	0.7	40	1		8260	srh	2/9/99
1,1,2,2-Tetrachloroethane	< 0.3	ug/l	0.3	0.9	0.02	1		8260	srh	2/9/99
1,1,2-Trichloroethane	< 0.3	ug/l	0.3	0.9	0.5	1		8260	srh	2/9/99
1,1-Dichloroethane	< 0.2	ug/l	0.2	0.5	85	1		8260	srh	2/9/99
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.1	0.7	1		8260	srh	2/9/99
1,1-Dichloropropene	< 0.5	ug/l	0.5	1.6	ns	1		8260	srh	2/9/99
1,2,3-Trichlorobenzene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
1,2,3-Trichloropropane	< 0.6	ug/l	0.6	1.9	ns	1		8260	srh	2/9/99
1,2,4-Trichlorobenzene	< 0.2	ug/l	0.2	0.5	14	1		8260	srh	2/9/99
1,2,4-Trimethylbenzene	< 0.3	ug/l	0.3	0.9	ns	1		8260	srh	2/9/99
1,2-Dibromoethane	< 0.2	ug/l	0.2	0.8	0.005	1		8260	srh	2/9/99
1,2-Dichlorobenzene	< 0.2	ug/l	0.2	0.6	60	1		8260	srh	2/9/99
1,2-Dichloroethane	< 0.2	ug/l	0.2	0.6	0.5	1		8260	srh	2/9/99
1,2-Dichloropropane	< 0.2	ug/l	0.2	0.7	0.5	1		8260	srh	2/9/99
1,3,5-Trimethylbenzene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
1,3-Dichlorobenzene	< 0.2	ug/l	0.2	0.6	125	1		8260	srh	2/9/99
1,3-Dichloropropane	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
1,4-Dichlorobenzene	< 0.2	ug/l	0.2	0.5	15	1		8260	srh	2/9/99
1,2-Dibromo-3-chloropropan	< 0.6	ug/l	0.6	1.9	0.02	1		8260	srh	2/9/99
2,2-Dichloropropane	< 0.4	ug/l	0.4	1.3	ns	1		8260	srh	2/9/99
2-Butanone (MEK)	< 1.4	ug/l	1.4	4.4	90	1		8260	srh	2/9/99
2-Chloroethyl Vinyl Ether	< 0.3	ug/l	0.3	0.9	ns	1		8260	srh	2/9/99
2-Chlorotoluene	< 0.2	ug/l	0.2	0.5	ns	1		8260	srh	2/9/99
4-Chlorotoluene	< 0.3	ug/l	0.3	0.8	ns	1		8260	srh	2/9/99
4-Methyl-2-Pentanone	< 0.8	ug/l	0.8	2.7	50	1		8260	srh	2/9/99
Acetone	< 1.6	ug/l	1.6	4.9	200	1		8260	srh	2/9/99
Benzene	< 0.2	ug/l	0.2	0.6	0.5	1		8260	srh	2/9/99
Bromobenzene	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	2/9/99
Bromochloromethane	< 0.3	ug/l	0.3	1.1	ns	1		8260	srh	2/9/99
Bromodichloromethane	< 0.3	ug/l	0.3	0.8	0.06	1		8260	srh	2/9/99

James Chang
 Oconomowoc Groundwater Treatment Plant
 2572 Oak St.
 Ashippun, WI 53003

ORGANIC REPORT

WDNR# 241340550

BATCH NUMBER: 990095
 DATE REPORTED: 11-Feb-99
 DATE RECEIVED: 09-Feb-99
 SAMPLE TEMP (C): Rec On Ice
 PROJECT ID:
 PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
Bromoform	< 0.5	ug/l	0.5	1.5	0.44	1		8260	srh	2/9/99
Bromomethane	< 0.2	ug/l	0.2	0.7	1	1		8260	srh	2/9/99
Carbon tetrachloride	< 0.2	ug/l	0.2	0.7	0.5	1		8260	srh	2/9/99
Chlorobenzene	< 0.2	ug/l	0.2	0.6	20	1		8260	srh	2/9/99
Chloroethane	< 1.2	ug/l	1.2	3.7	80	1		8260	srh	2/9/99
Chloroform	< 0.3	ug/l	0.3	0.9	0.6	1		8260	srh	2/9/99
Chloromethane	< 0.8	ug/l	0.8	2.4	0.3	1		8260	srh	2/9/99
cis-1,2-Dichloroethene	< 0.2	ug/l	0.2	0.6	7	1		8260	srh	2/9/99
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.8	0.02	1		8260	srh	2/9/99
Dibromochloromethane	< 0.2	ug/l	0.2	0.7	6	1		8260	srh	2/9/99
Dibromomethane	< 0.4	ug/l	0.4	1.1	ns	1		8260	srh	2/9/99
Dichlorodifluoromethane	< 0.4	ug/l	0.4	1.1	200	1		8260	srh	2/9/99
Ethylbenzene	< 0.2	ug/l	0.2	0.5	140	1		8260	srh	2/9/99
Hexachlorobutadiene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
Isopropyl Ether	< 0.3	ug/l	0.3	1	ns	1		8260	srh	2/9/99
Isopropylbenzene	< 0.2	ug/l	0.2	0.5	ns	1		8260	srh	2/9/99
m&p-xylene	< 0.4	ug/l	0.4	1.1	124	1		8260	srh	2/9/99
Methyl-t-butyl ether	< 0.2	ug/l	0.2	0.7	12	1		8260	srh	2/9/99
Methylene chloride	< 0.8	ug/l	0.8	2.4	0.5	1		8260	srh	2/9/99
n-Butylbenzene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	2/9/99
n-Propylbenzene	< 0.3	ug/l	0.3	0.8	ns	1		8260	srh	2/9/99
Naphthalene	< 0.5	ug/l	0.5	1.5	8	1		8260	srh	2/9/99
o-xylene	< 0.2	ug/l	0.2	0.6	124	1		8260	srh	2/9/99
p-Isopropyltoluene	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	2/9/99
sec-Butylbenzene	< 0.3	ug/l	0.3	1	ns	1		8260	srh	2/9/99
Styrene	< 0.2	ug/l	0.2	0.7	10	1		8260	srh	2/9/99
tert-Butylbenzene	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	2/9/99
Tetrachloroethene	< 0.3	ug/l	0.3	0.9	0.5	1		8260	srh	2/9/99
Toluene	< 0.3	ug/l	0.3	1	68.6	1		8260	srh	2/9/99
trans-1,2-Dichloroethene	< 0.2	ug/l	0.2	0.5	20	1		8260	srh	2/9/99
trans-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.6	0.02	1		8260	srh	2/9/99
Trichloroethene	< 0.2	ug/l	0.2	0.5	0.5	1		8260	srh	2/9/99
Trichlorofluoromethane	< 0.3	ug/l	0.3	1.1	ns	1		8260	srh	2/9/99
Vinyl chloride	< 0.2	ug/l	0.2	0.7	0.02	1		8260	srh	2/9/99

APL Environmental

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James Chang
Oconomowoc Groundwater Treatment Plant
2572 Oak St.
Ashippun, WI 53003

ORGANIC REPORT

WDNR# 241340550

BATCH NUMBER: 990095
DATE REPORTED: 11-Feb-99
DATE RECEIVED: 09-Feb-99
SAMPLE TEMP (C): Rec On Ice
PROJECT ID:
PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
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Approved By: James Chang (sm) Date: 2/11/99
James Chang, Ph.D., Lab Director

MDL: Method Detection Limit determined by 40CFR Part 136 Appendix B "e" = Estimate value, over calibration range.

LOQ = $10 (S) \times \text{Dilution Factor}$, where "S" is the Standard Deviation from the MDL Study

LOD = $3.143 (S) \times \text{Dilution Factor}$, where "S" is the Standard Deviation from the MDL Study

PAL: Preventive Action Limit, NR 140.10 Public health related groundwater standards. "ns" = not specified

RQ: Run Qualifier; "J" = Results between LOD and LOQ. "RR" = Re-extract Rerun sample, "B" = Showed in Blank sample.

Rounding Rules: Three significant figures were used for concentrations above 99 ug/L, two significant figures for concentrations between 1-99 ug/L, and one significant figure for lower concentrations.
DNR Analytical Detection Limit Guidance, April 1995.

WDNR# 241340550

James Chang
 Oconomowoc Groundwater Treatment Plant
 2572 Oak St.
 Ashippun, WI 53003

BATCH NUMBER: 990142
 DATE REPORTED: 06-Mar-99
 DATE RECEIVED: 26-Feb-99
 SAMPLE TEMP (C): Rec On Ice
 PROJECT ID:
 PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
Sample Number: 14224		QC Prep Batch Number: 990339		Sample analyzed within 8 Day(s) from collection.						
Client ID: 990225WA01P		Sample Description:		Collection: 2/25/99 Time:						
1,1,1,2-Tetrachloroethane	< 4	ug/l	4	13	ns	20		8260	srh	3/5/99
1,1,1-Trichloroethane	574	ug/l	4.6	15	40	20		8260	srh	3/5/99
1,1,2,2-Tetrachloroethane	< 5.8	ug/l	5.8	18	0.02	20		8260	srh	3/5/99
1,1,2-Trichloroethane	< 5.8	ug/l	5.8	18	0.5	20		8260	srh	3/5/99
1,1-Dichloroethane	46	ug/l	3	9.5	85	20		8260	srh	3/5/99
1,1-Dichloroethene	30	ug/l	7.2	23	0.7	20		8260	srh	3/5/99
1,1-Dichloropropene	< 9.8	ug/l	9.8	31	ns	20		8260	srh	3/5/99
1,2,3-Trichlorobenzene	< 4.4	ug/l	4.4	14	ns	20		8260	srh	3/5/99
1,2,3-Trichloropropane	< 12	ug/l	12	38	ns	20		8260	srh	3/5/99
1,2,4-Trichlorobenzene	< 3.2	ug/l	3.2	10	14	20		8260	srh	3/5/99
1,2,4-Trimethylbenzene	< 5.8	ug/l	5.8	18	ns	20		8260	srh	3/5/99
1,2-Dibromoethane	< 4.8	ug/l	4.8	15	0.005	20		8260	srh	3/5/99
1,2-Dichlorobenzene	< 4	ug/l	4	13	60	20		8260	srh	3/5/99
1,2-Dichloroethane	< 3.8	ug/l	3.8	12	0.5	20		8260	srh	3/5/99
1,2-Dichloropropane	< 4.6	ug/l	4.6	15	0.5	20		8260	srh	3/5/99
1,3,5-Trimethylbenzene	< 4.6	ug/l	4.6	15	ns	20		8260	srh	3/5/99
1,3-Dichlorobenzene	< 3.8	ug/l	3.8	12	125	20		8260	srh	3/5/99
1,3-Dichloropropane	< 4.2	ug/l	4.2	13	ns	20		8260	srh	3/5/99
1,4-Dichlorobenzene	< 3	ug/l	3	9.5	15	20		8260	srh	3/5/99
1,2-Dibromo-3-chloropropan	< 12	ug/l	12	38	0.02	20		8260	srh	3/5/99
2,2-Dichloropropane	< 8	ug/l	8	25	ns	20		8260	srh	3/5/99
2-Butanone (MEK)	< 28	ug/l	28	88	90	20		8260	srh	3/5/99
2-Chloroethyl Vinyl Ether	< 5.8	ug/l	5.8	18	ns	20		8260	srh	3/5/99
2-Chlorotoluene	< 3	ug/l	3	9.5	ns	20		8260	srh	3/5/99
4-Chlorotoluene	< 5	ug/l	5	16	ns	20		8260	srh	3/5/99
4-Methyl-2-Pentanone	< 17	ug/l	17	53	50	20		8260	srh	3/5/99
Acetone	< 31	ug/l	31	99	200	20		8260	srh	3/5/99
Benzene	< 3.8	ug/l	3.8	12	0.5	20		8260	srh	3/5/99
Bromobenzene	< 3.8	ug/l	3.8	12	ns	20		8260	srh	3/5/99
Bromochloromethane	< 6.8	ug/l	6.8	22	ns	20		8260	srh	3/5/99
Bromodichloromethane	< 5.2	ug/l	5.2	17	0.06	20		8260	srh	3/5/99
Bromoform	< 9.4	ug/l	9.4	30	0.44	20		8260	srh	3/5/99
Bromomethane	< 4.2	ug/l	4.2	13	1	20		8260	srh	3/5/99
Carbon tetrachloride	< 4.4	ug/l	4.4	14	0.5	20		8260	srh	3/5/99
Chlorobenzene	< 4	ug/l	4	13	20	20		8260	srh	3/5/99
Chloroethane	< 23	ug/l	23	74	80	20		8260	srh	3/5/99
Chloroform	< 5.4	ug/l	5.4	17	0.6	20		8260	srh	3/5/99
Chloromethane	< 15	ug/l	15	49	0.3	20		8260	srh	3/5/99
cis-1,2-Dichloroethene	928	ug/l	4	13	7	20		8260	srh	3/5/99
cis-1,3-Dichloropropene	< 4.8	ug/l	4.8	15	0.02	20		8260	srh	3/5/99

APL Environmental

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James Chang
Oconomowoc Groundwater Treatment Plant
2572 Oak St.
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ORGANIC REPORT

WDNR# 241340550

BATCH NUMBER: 990142
DATE REPORTED: 06-Mar-99
DATE RECEIVED: 26-Feb-99
SAMPLE TEMP (C): Rec On Ice
PROJECT ID:
PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
Dibromochloromethane	< 4.2	ug/l	4.2	13	6	20		8260	srh	3/5/99
Dibromomethane	< 7	ug/l	7	22	ns	20		8260	srh	3/5/99
Dichlorodifluoromethane	< 7.2	ug/l	7.2	23	200	20		8260	srh	3/5/99
Ethylbenzene	< 3.2	ug/l	3.2	10	140	20		8260	srh	3/5/99
Hexachlorobutadiene	< 4.4	ug/l	4.4	14	ns	20		8260	srh	3/5/99
Isopropyl Ether	< 6.4	ug/l	6.4	20	ns	20		8260	srh	3/5/99
Isopropylbenzene	< 3.2	ug/l	3.2	10	ns	20		8260	srh	3/5/99
m&p-xylene	< 7.2	ug/l	7.2	23	124	20		8260	srh	3/5/99
Methyl-t-butyl ether	< 4.2	ug/l	4.2	13	12	20		8260	srh	3/5/99
Methylene chloride	< 15	ug/l	15	48	0.5	20		8260	srh	3/5/99
n-Butylbenzene	< 4.6	ug/l	4.6	15	ns	20		8260	srh	3/5/99
n-Propylbenzene	< 5	ug/l	5	16	ns	20		8260	srh	3/5/99
Naphthalene	< 9.2	ug/l	9.2	29	8	20		8260	srh	3/5/99
o-xylene	< 3.6	ug/l	3.6	11	124	20		8260	srh	3/5/99
p-Isopropyltoluene	< 3.6	ug/l	3.6	11	ns	20		8260	srh	3/5/99
sec-Butylbenzene	< 6	ug/l	6	19	ns	20		8260	srh	3/5/99
Styrene	< 4.2	ug/l	4.2	13	10	20		8260	srh	3/5/99
tert-Butylbenzene	< 4	ug/l	4	13	ns	20		8260	srh	3/5/99
Tetrachloroethene	10	ug/l	5.8	18	0.5	20	J	8260	srh	3/5/99
Toluene	< 6.6	ug/l	6.6	21	68.6	20		8260	srh	3/5/99
trans-1,2-Dichloroethene	26	ug/l	3.2	10	20	20		8260	srh	3/5/99
trans-1,3-Dichloropropene	< 4	ug/l	4	13	0.02	20		8260	srh	3/5/99
Trichloroethene	1290	ug/l	3.2	10	0.5	20		8260	srh	3/5/99
Trichlorofluoromethane	< 6.8	ug/l	6.8	22	ns	20		8260	srh	3/5/99
Vinyl chloride	< 4.2	ug/l	4.2	13	0.02	20		8260	srh	3/5/99

Sample Number: 14229 QC Prep Batch Number: 990339 Sample analyzed within 5 Day(s) from collection
Client ID: 990225WA09P Sample Description: Collection: 2/25/99 Time:

1,1,1,2-Tetrachloroethane	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	3/2/99
1,1,1-Trichloroethane	< 0.2	ug/l	0.2	0.7	40	1		8260	srh	3/2/99
1,1,2,2-Tetrachloroethane	< 0.3	ug/l	0.3	0.9	0.02	1		8260	srh	3/2/99
1,1,2-Trichloroethane	< 0.3	ug/l	0.3	0.9	0.5	1		8260	srh	3/2/99
1,1-Dichloroethane	< 0.2	ug/l	0.2	0.5	85	1		8260	srh	3/2/99
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.1	0.7	1		8260	srh	3/2/99
1,1-Dichloropropene	< 0.5	ug/l	0.5	1.6	ns	1		8260	srh	3/2/99
1,2,3-Trichlorobenzene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
1,2,3-Trichloropropane	< 0.6	ug/l	0.6	1.9	ns	1		8260	srh	3/2/99
1,2,4-Trichlorobenzene	< 0.2	ug/l	0.2	0.5	14	1		8260	srh	3/2/99
1,2,4-Trimethylbenzene	< 0.3	ug/l	0.3	0.9	ns	1		8260	srh	3/2/99
1,2-Dibromoethane	< 0.2	ug/l	0.2	0.8	0.005	1		8260	srh	3/2/99
1,2-Dichlorobenzene	< 0.2	ug/l	0.2	0.6	60	1		8260	srh	3/2/99
1,2-Dichloroethane	< 0.2	ug/l	0.2	0.6	0.5	1		8260	srh	3/2/99

James Chang
 Oconomowoc Groundwater Treatment Plant
 2572 Oak St.
 Ashippun, WI 53003

WDNR# 241340550

BATCH NUMBER: 990142
 DATE REPORTED: 06-Mar-99
 DATE RECEIVED: 26-Feb-99
 SAMPLE TEMP (C): Rec On Ice
 PROJECT ID:
 PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
1,2-Dichloropropane	<0.2	ug/l	0.2	0.7	0.5	1		8260	srh	3/2/99
1,3,5-Trimethylbenzene	<0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
1,3-Dichlorobenzene	<0.2	ug/l	0.2	0.6	125	1		8260	srh	3/2/99
1,3-Dichloropropane	<0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
1,4-Dichlorobenzene	<0.2	ug/l	0.2	0.5	15	1		8260	srh	3/2/99
12Dibromo-3-chloropropan	<0.6	ug/l	0.6	1.9	0.02	1		8260	srh	3/2/99
2,2-Dichloropropane	<0.4	ug/l	0.4	1.3	ns	1		8260	srh	3/2/99
2-Butanone (MEK)	<1.4	ug/l	1.4	4.4	90	1		8260	srh	3/2/99
2-Chloroethyl Vinyl Ether	<0.3	ug/l	0.3	0.9	ns	1		8260	srh	3/2/99
2-Chlorotoluene	<0.2	ug/l	0.2	0.5	ns	1		8260	srh	3/2/99
4-Chlorotoluene	<0.3	ug/l	0.3	0.8	ns	1		8260	srh	3/2/99
4-Methyl-2-Pentanone	<0.8	ug/l	0.8	2.7	50	1		8260	srh	3/2/99
Acetone	<1.6	ug/l	1.6	4.9	200	1		8260	srh	3/2/99
Benzene	<0.2	ug/l	0.2	0.6	0.5	1		8260	srh	3/2/99
Bromobenzene	<0.2	ug/l	0.2	0.6	ns	1		8260	srh	3/2/99
Bromochloromethane	<0.3	ug/l	0.3	1.1	ns	1		8260	srh	3/2/99
Bromodichloromethane	<0.3	ug/l	0.3	0.8	0.06	1		8260	srh	3/2/99
Bromoform	<0.5	ug/l	0.5	1.5	0.44	1		8260	srh	3/2/99
Bromomethane	<0.2	ug/l	0.2	0.7	1	1		8260	srh	3/2/99
Carbon tetrachloride	<0.2	ug/l	0.2	0.7	0.5	1		8260	srh	3/2/99
Chlorobenzene	<0.2	ug/l	0.2	0.6	20	1		8260	srh	3/2/99
Chloroethane	<1.2	ug/l	1.2	3.7	80	1		8260	srh	3/2/99
Chloroform	0.6	ug/l	0.3	0.9	0.6	1	J	8260	srh	3/2/99
Chloromethane	<0.8	ug/l	0.8	2.4	0.3	1		8260	srh	3/2/99
cis-1,2-Dichloroethene	<0.2	ug/l	0.2	0.6	7	1		8260	srh	3/2/99
cis-1,3-Dichloropropene	<0.2	ug/l	0.2	0.8	0.02	1		8260	srh	3/2/99
Dibromochloromethane	<0.2	ug/l	0.2	0.7	6	1		8260	srh	3/2/99
Dibromomethane	<0.4	ug/l	0.4	1.1	ns	1		8260	srh	3/2/99
Dichlorodifluoromethane	<0.4	ug/l	0.4	1.1	200	1		8260	srh	3/2/99
Ethylbenzene	<0.2	ug/l	0.2	0.5	140	1		8260	srh	3/2/99
Hexachlorobutadiene	<0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
Isopropyl Ether	<0.3	ug/l	0.3	1	ns	1		8260	srh	3/2/99
Isopropylbenzene	<0.2	ug/l	0.2	0.5	ns	1		8260	srh	3/2/99
m&p-xylene	<0.4	ug/l	0.4	1.1	124	1		8260	srh	3/2/99
Methyl-t-butyl ether	<0.2	ug/l	0.2	0.7	12	1		8260	srh	3/2/99
Methylene chloride	<0.8	ug/l	0.8	2.4	0.5	1		8260	srh	3/2/99
n-Butylbenzene	<0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
n-Propylbenzene	<0.3	ug/l	0.3	0.8	ns	1		8260	srh	3/2/99
Naphthalene	<0.5	ug/l	0.5	1.5	8	1		8260	srh	3/2/99
o-xylene	<0.2	ug/l	0.2	0.6	124	1		8260	srh	3/2/99
p-Isopropyltoluene	<0.2	ug/l	0.2	0.6	ns	1		8260	srh	3/2/99
sec-Butylbenzene	<0.3	ug/l	0.3	1	ns	1		8260	srh	3/2/99
Styrene	<0.2	ug/l	0.2	0.7	10	1		8260	srh	3/2/99

James Chang
 Oconomowoc Groundwater Treatment Plant
 2572 Oak St.
 Ashippun, WI 53003

ORGANIC REPORT

WDNR# 241340550

BATCH NUMBER: 990142
 DATE REPORTED: 06-Mar-99
 DATE RECEIVED: 26-Feb-99
 SAMPLE TEMP (C): Rec On Ice
 PROJECT ID:
 PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
tert-Butylbenzene	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	3/2/99
Tetrachloroethene	< 0.3	ug/l	0.3	0.9	0.5	1		8260	srh	3/2/99
Toluene	< 0.3	ug/l	0.3	1	68.6	1		8260	srh	3/2/99
trans-1,2-Dichloroethene	< 0.2	ug/l	0.2	0.5	20	1		8260	srh	3/2/99
trans-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.6	0.02	1		8260	srh	3/2/99
Trichloroethene	0.4	ug/l	0.2	0.5	0.5	1	J	8260	srh	3/2/99
Trichlorofluoromethane	< 0.3	ug/l	0.3	1.1	ns	1		8260	srh	3/2/99
Vinyl chloride	< 0.2	ug/l	0.2	0.7	0.02	1		8260	srh	3/2/99

Sample Number: 14230

QC Prep Batch Number: 990339

Sample analyzed within 5 Day(s) from collection

Client ID: TRIP BLANK

Sample Description:

Collection: 2/25/99 Time:

1,1,1,2-Tetrachloroethane	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	3/2/99
1,1,1-Trichloroethane	< 0.2	ug/l	0.2	0.7	40	1		8260	srh	3/2/99
1,1,2,2-Tetrachloroethane	< 0.3	ug/l	0.3	0.9	0.02	1		8260	srh	3/2/99
1,1,2-Trichloroethane	< 0.3	ug/l	0.3	0.9	0.5	1		8260	srh	3/2/99
1,1-Dichloroethane	< 0.2	ug/l	0.2	0.5	85	1		8260	srh	3/2/99
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.1	0.7	1		8260	srh	3/2/99
1,1-Dichloropropene	< 0.5	ug/l	0.5	1.6	ns	1		8260	srh	3/2/99
1,2,3-Trichlorobenzene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
1,2,3-Trichloropropane	< 0.6	ug/l	0.6	1.9	ns	1		8260	srh	3/2/99
1,2,4-Trichlorobenzene	< 0.2	ug/l	0.2	0.5	14	1		8260	srh	3/2/99
1,2,4-Trimethylbenzene	< 0.3	ug/l	0.3	0.9	ns	1		8260	srh	3/2/99
1,2-Dibromoethane	< 0.2	ug/l	0.2	0.8	0.005	1		8260	srh	3/2/99
1,2-Dichlorobenzene	< 0.2	ug/l	0.2	0.6	60	1		8260	srh	3/2/99
1,2-Dichloroethane	< 0.2	ug/l	0.2	0.6	0.5	1		8260	srh	3/2/99
1,2-Dichloropropane	< 0.2	ug/l	0.2	0.7	0.5	1		8260	srh	3/2/99
1,3,5-Trimethylbenzene	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
1,3-Dichlorobenzene	< 0.2	ug/l	0.2	0.6	125	1		8260	srh	3/2/99
1,3-Dichloropropane	< 0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
1,4-Dichlorobenzene	< 0.2	ug/l	0.2	0.5	15	1		8260	srh	3/2/99
1,2-Dibromo-3-chloropropane	< 0.6	ug/l	0.6	1.9	0.02	1		8260	srh	3/2/99
2,2-Dichloropropane	< 0.4	ug/l	0.4	1.3	ns	1		8260	srh	3/2/99
2-Butanone (MEK)	< 1.4	ug/l	1.4	4.4	90	1		8260	srh	3/2/99
2-Chloroethyl Vinyl Ether	< 0.3	ug/l	0.3	0.9	ns	1		8260	srh	3/2/99
2-Chlorotoluene	< 0.2	ug/l	0.2	0.5	ns	1		8260	srh	3/2/99
4-Chlorotoluene	< 0.3	ug/l	0.3	0.8	ns	1		8260	srh	3/2/99
4-Methyl-2-Pentanone	< 0.8	ug/l	0.8	2.7	50	1		8260	srh	3/2/99
Acetone	< 1.6	ug/l	1.6	4.9	200	1		8260	srh	3/2/99
Benzene	< 0.2	ug/l	0.2	0.6	0.5	1		8260	srh	3/2/99
Bromobenzene	< 0.2	ug/l	0.2	0.6	ns	1		8260	srh	3/2/99
Bromochloromethane	< 0.3	ug/l	0.3	1.1	ns	1		8260	srh	3/2/99
Bromodichloromethane	< 0.3	ug/l	0.3	0.8	0.06	1		8260	srh	3/2/99

James Chang
 Oconomowoc Groundwater Treatment Plant
 2572 Oak St.
 Ashippun, WI 53003

ORGANIC REPORT

WDNR# 241340550

BATCH NUMBER: 990142
 DATE REPORTED: 06-Mar-99
 DATE RECEIVED: 26-Feb-99
 SAMPLE TEMP (C): Rec On Ice
 PROJECT ID:
 PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date Anal
Bromoform	<0.5	ug/l	0.5	1.5	0.44	1		8260	srh	3/2/99
Bromomethane	<0.2	ug/l	0.2	0.7	1	1		8260	srh	3/2/99
Carbon tetrachloride	<0.2	ug/l	0.2	0.7	0.5	1		8260	srh	3/2/99
Chlorobenzene	<0.2	ug/l	0.2	0.6	20	1		8260	srh	3/2/99
Chloroethane	<1.2	ug/l	1.2	3.7	80	1		8260	srh	3/2/99
Chloroform	<0.3	ug/l	0.3	0.9	0.6	1		8260	srh	3/2/99
Chloromethane	<0.8	ug/l	0.8	2.4	0.3	1		8260	srh	3/2/99
cis-1,2-Dichloroethene	<0.2	ug/l	0.2	0.6	7	1		8260	srh	3/2/99
cis-1,3-Dichloropropene	<0.2	ug/l	0.2	0.8	0.02	1		8260	srh	3/2/99
Dibromochloromethane	<0.2	ug/l	0.2	0.7	6	1		8260	srh	3/2/99
Dibromomethane	<0.4	ug/l	0.4	1.1	ns	1		8260	srh	3/2/99
Dichlorodifluoromethane	<0.4	ug/l	0.4	1.1	200	1		8260	srh	3/2/99
Ethylbenzene	<0.2	ug/l	0.2	0.5	140	1		8260	srh	3/2/99
Hexachlorobutadiene	<0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
Isopropyl Ether	<0.3	ug/l	0.3	1	ns	1		8260	srh	3/2/99
Isopropylbenzene	<0.2	ug/l	0.2	0.5	ns	1		8260	srh	3/2/99
m&p-xylene	<0.4	ug/l	0.4	1.1	124	1		8260	srh	3/2/99
Methyl-t-butyl ether	<0.2	ug/l	0.2	0.7	12	1		8260	srh	3/2/99
Methylene chloride	<0.8	ug/l	0.8	2.4	0.5	1		8260	srh	3/2/99
n-Butylbenzene	<0.2	ug/l	0.2	0.7	ns	1		8260	srh	3/2/99
n-Propylbenzene	<0.3	ug/l	0.3	0.8	ns	1		8260	srh	3/2/99
Naphthalene	<0.5	ug/l	0.5	1.5	8	1		8260	srh	3/2/99
o-xylene	<0.2	ug/l	0.2	0.6	124	1		8260	srh	3/2/99
p-Isopropyltoluene	<0.2	ug/l	0.2	0.6	ns	1		8260	srh	3/2/99
sec-Butylbenzene	<0.3	ug/l	0.3	1	ns	1		8260	srh	3/2/99
Styrene	<0.2	ug/l	0.2	0.7	10	1		8260	srh	3/2/99
tert-Butylbenzene	<0.2	ug/l	0.2	0.6	ns	1		8260	srh	3/2/99
Tetrachloroethene	<0.3	ug/l	0.3	0.9	0.5	1		8260	srh	3/2/99
Toluene	<0.3	ug/l	0.3	1	68.6	1		8260	srh	3/2/99
trans-1,2-Dichloroethene	<0.2	ug/l	0.2	0.5	20	1		8260	srh	3/2/99
trans-1,3-Dichloropropene	<0.2	ug/l	0.2	0.6	0.02	1		8260	srh	3/2/99
Trichloroethene	<0.2	ug/l	0.2	0.5	0.5	1		8260	srh	3/2/99
Trichlorofluoromethane	<0.3	ug/l	0.3	1.1	ns	1		8260	srh	3/2/99
Vinyl chloride	<0.2	ug/l	0.2	0.7	0.02	1		8260	srh	3/2/99

APL Environmental

8222 W. Calumet Rd., Milwaukee, WI 53223
Phone: (414) 355-5800 Fax: (414) 355-3099

James Chang
Oconomowoc Groundwater Treatment Plant
2572 Oak St.
Ashippun, WI 53003

ORGANIC REPORT

WDNR# 241340550

BATCH NUMBER: 990142
DATE REPORTED: 06-Mar-99
DATE RECEIVED: 26-Feb-99
SAMPLE TEMP (C): Rec On Ice
PROJECT ID:
PROJECT NAME:

Compound	Result	Units	LOD	LOQ	PAL	Dil	RQ	Method	Analyst	Date	Anal
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Approved By: James Chang Date: 3/6/99
James Chang, Ph.D., Lab Director

MDL: Method Detection Limit determined by 40CFR Part 136 Appendix B "e" = Estimate value, over calibration range.
LOQ = $10(S) \times \text{Dilution Factor}$, where "S" is the Standard Deviation from the MDL Study
LOD = $3.143(S) \times \text{Dilution Factor}$, where "S" is the Standard Deviation from the MDL Study
PAL: Preventive Action Limit, NR 140.10 Public health related groundwater standards. "ns" = not specified
RQ: Run Qualifier; "J" = Results between LOD and LOQ. "RR" = Re-extract Rerun sample, "B" = Showed in Blank sample.
Rounding Rules: Three significant figures were used for concentrations above 99 ug/L, two significant figures for concentrations between 1-99 ug/L, and one significant figure for lower concentrations.
DNR Analytical Detection Limit Guidance, April 1995.