

130014

PUREX SITE at MITCHEL FIELD
GROUNDWATER REMEDIATION

DEPARTMENT OF PUBLIC WORKS

Nassau County

Long Island, New York



**ANNUAL
OPERATIONS AND ENVIRONMENTAL
MONITORING SUMMARY**



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COMMISSIONER**

2003

**Purex Site at Mitchel Field Groundwater Remediation
Annual Operations and Environmental
Monitoring Summary
For Year 2003**

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1.0 2003 Treatment Plant Operations

1.1 2003 Treatment Systems Configuration

Nassau County took over operation of the Mitchel Field Purex Groundwater Remediation Facility (MFPGRF) from Purex Corporation on January 1, 2003. Purex Corporation had operated the facility for nearly thirteen (13) years at the time of the transfer to the County.

The MFPGRF was constructed to extract contaminated groundwater from two separate locations, a highly contaminated or "source" area and a more diffuse "plume" area, treat the water to meet the State's required standards, and discharge the treated water to a County recharge basin. For Operating Year (OY) 2003 (January 1, 2003 to December 31, 2003) there were two (2) source area recovery wells and three (3) plume area recovery wells that were active for the MFPGRF, both the source area and plume area recovery well systems were operated in OY 2003.

Recovered water from both source area and plume area well locations was pumped via force mains to the MFPGRF located at the intersection of Oak Street and Commercial Avenue in East Garden City, New York. Once within the treatment facility, recovered water under went air stripping treatment, with a typical air to water ratio of 50 to 1. After air stripping, treated water was pumped from the facility's effluent wet well to a County recharge basin.

1.2 Significant 2003 Operations Events

The most significant operations event in 2003 was the successful transfer of the MFPGRF to the County from Purex Corporation's operations contractor Woodward and Curran (Portland, Maine).

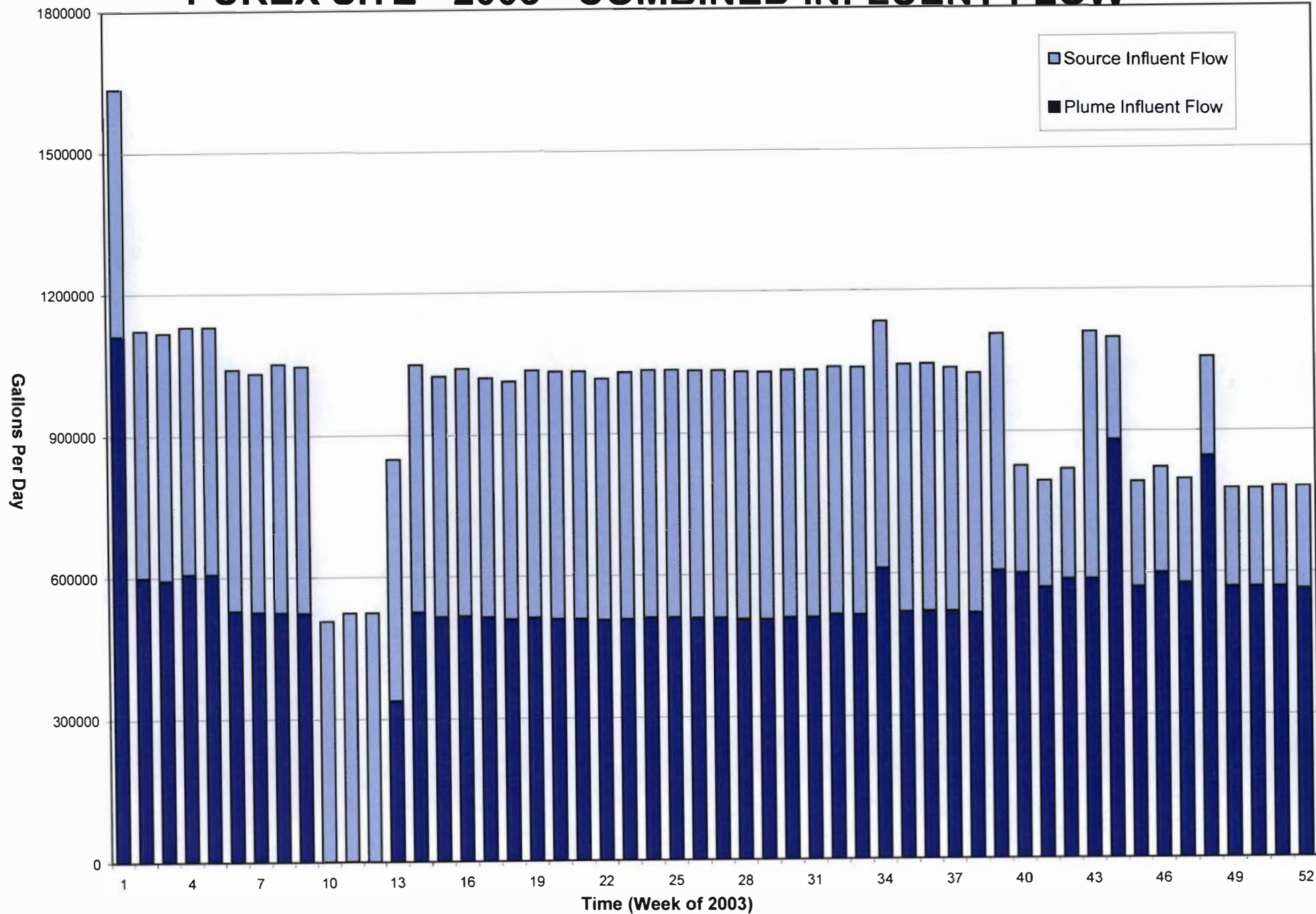
2.0 Treatment Plant Operations Monitoring Results

2.1 Total Flow and On-Line Performance

The MFPGRF pumped and treated a total of 317,850,300 gallons of contaminated groundwater in OY 2003. A total of 150,013,020 gallons was recovered from the source area system and a total of 167,837,280 gallons from the plume area system. Figure 1 shows typical daily flow rates for each week of OY 2003. Detailed monthly summaries of flow are presented below:

Figure 1

PUREX SITE - 2003 - COMBINED INFLUENT FLOW



2003

MONTH	SOURCE	PLUME	TOTAL
JANUARY	15,370,440	14,385,510	29,755,950
FEBRUARY	13,838,580	13,789,260	27,627,840
MARCH	13,553,960	338,520	13,872,480
APRIL	15,344,640	15,399,360	30,744,000
MAY	14,183,160	13,951,920	28,135,080
JUNE	14,807,040	14,387,040	29,194,080
JULY	16,248,960	15,660,000	31,908,960
AUGUST	12,645,360	12,359,400	25,004,760
SEPTEMBER	13,595,400	15,944,670	29,540,070
OCTOBER	7,643,040	16,613,280	24,256,320
NOVEMBER	6,369,960	17,470,560	23,840,520
DECEMBER	6,432,480	17,537,760	23,970,240
TOTAL	150,013,020	167,837,280	317,850,300

The MFPGTF operated a total of 8275.5 hours out of a possible 8760 hours for the 12 months covered in this report's operating year. This resulted in an overall on-line performance of 94.47 % during OY 2003. The three (3) events that accounted for the majority of the system's downtime in OY 2003, in order of significance, were as follows: power related problems (205 hours), including 88 hours attributed to the east coast blackout in August, pump related problems (111 hours) and manual acid washing of the stripper towers (54 hours). Detailed monthly summaries of on-line performance are presented in Appendix A.

2.2 Influent Water Quality Results

2.2.1 Source Influent Water Quality Results

Source influent water quality samples were collected on a weekly basis. The samples were analyzed for the presence of volatile organic compounds (VOC's). Detailed monthly data summaries are presented in Appendix B.

In OY 2003 influent TVOC levels for source area groundwater ranged from 453.7 parts per billion (ppb) to 2602.5 ppb (Figure 2). The wide range of concentrations observed was directly related to the pumping configuration of the source area's recovery wells. TVOCs of 1000 to 1500 ppb, and greater, occurred when both source area recovery wells W-3 and W-4D were in operation. Lower levels of TVOCs (>500 ppb) were observed when W-4D was operated alone.

Tetrachloroethene, Trichloroethene and Cis-1,2-Dichloroethene were the three (3) compounds that accounted for 90 % of the source area influent VOCs in OY 2003 (Figure 3).

Figure 2
PUREX SITE - 2003 - SOURCE INFLUENT - TVOCs

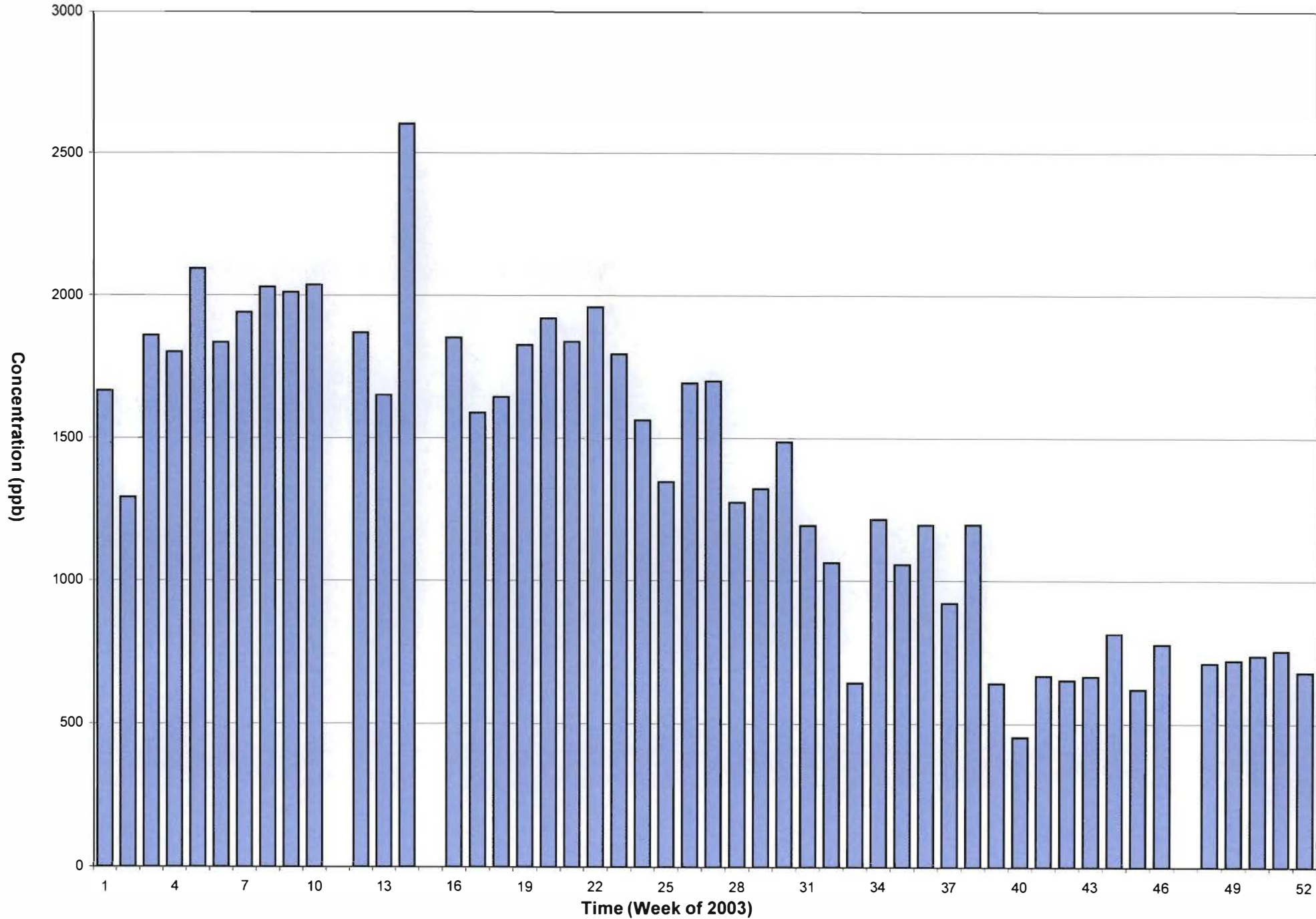
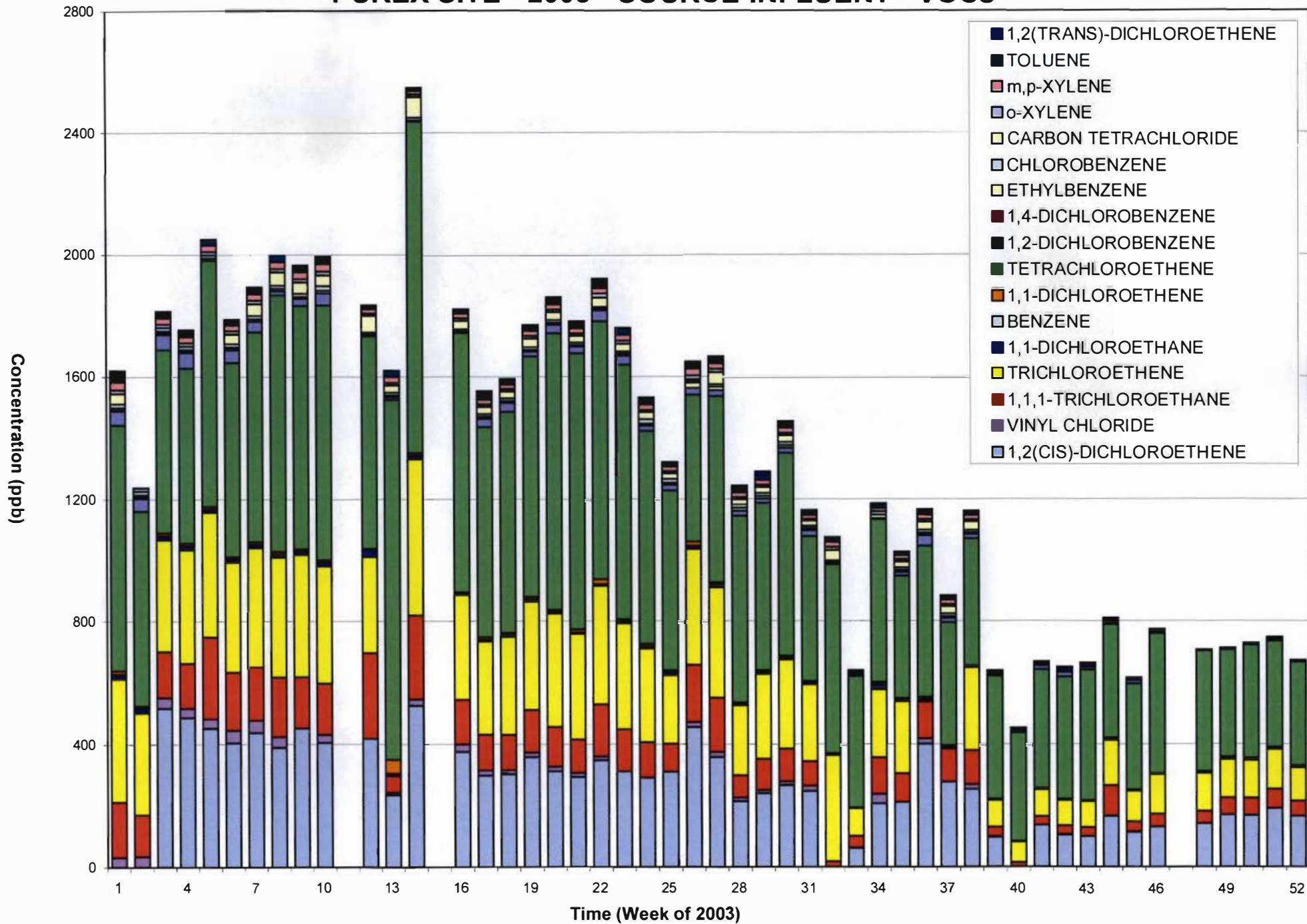


Figure 3
PUREX SITE - 2003 - SOURCE INFLUENT - VOCs



2.2.2 Plume Influent Quality Results

Plume influent water quality samples were collected on a weekly basis. The samples were analyzed for VOC's. Detailed monthly summaries of the off-site influent quality results are presented in Appendix B.

The plume influent TVOCs ranged from 45 ppb to 466.8 ppb in OY 2003 (Figure 4). Following the first 13 weeks of operation, where TVOCs were observed at higher concentrations, the plume influent TVOC concentrations leveled off and remained constant for the rest of OY 2003 at concentrations between 100 ppb and 200 ppb. As observed with the source area influent, the bulk of the plume influent contamination was comprised of three (3) compounds, Tetrachloroethene, Trichloroethene and Cis-1,2-Dichloroethene (Figure 5).

2.3 Recovery Well Data

Both the source area and plume area recovery well systems were operated in OY 2003. Table 1 shows which recovery wells were on each week. No weekly recovery well water quality samples have been collected at the well head since the start of the remediation in 1990 due to confined space entry requirements.

2.4 Effluent Water Quality Results

Effluent water quality samples were collected on a weekly basis. The samples were analyzed for VOC's and pH. Detailed monthly summaries of the effluent water quality results are presented in Appendix C.

There were nineteen (19) weeks in OY 2003 where one or more effluent discharge limitations were exceeded. Tetrachloroethene, Trichloroethene and Cis-1,2-Dichloroethene were the only compounds to exceed their individual discharge limitations.

2.5 Air Emissions Monitoring Results

Two (2) compounds: Tetrachloroethene and Vinyl Chloride were identified as significant potential air contaminant sources resulting from the operation of the MFPGRF. No direct air emissions sampling is required at the MFPGRF; instead, air emissions rates are calculated based on a specific day's influent contaminant concentration and its associated fluid flow rate. The calculation assumes that 100% of the measured compound is removed by the air strippers and discharged to the atmosphere.

During OY 2003 the highest calculated emission rates for Tetrachloroethene and Vinyl Chloride were 5.30 lbs/d and 0.61 lbs/d, respectively. The highest emission rate for Tetrachloroethene represents 92 % of the compound's maximum allowable rate of 5.76 lbs/d. The highest emission rate for Vinyl Chloride represents 39 % of the compound's maximum allowable rate of 1.56 lbs/d. The weekly air emissions data for these parameters are presented graphically in Figures 6 and 7.

Figure 4

PUREX SITE - 2003 - PLUME INFLUENT - TVOCs

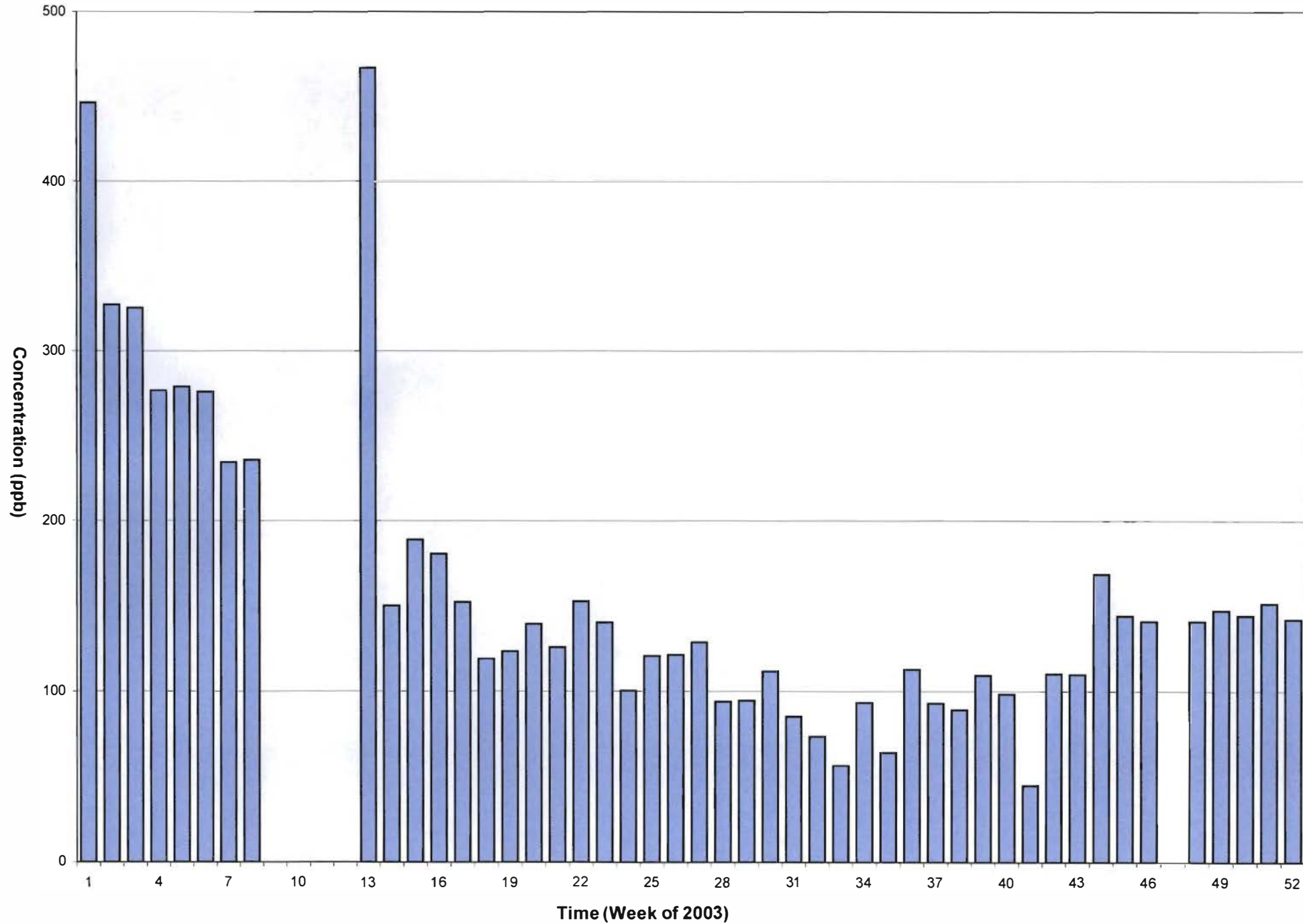


Figure 5
PUREX SITE - 2003 - PLUME INFLUENT - VOCs

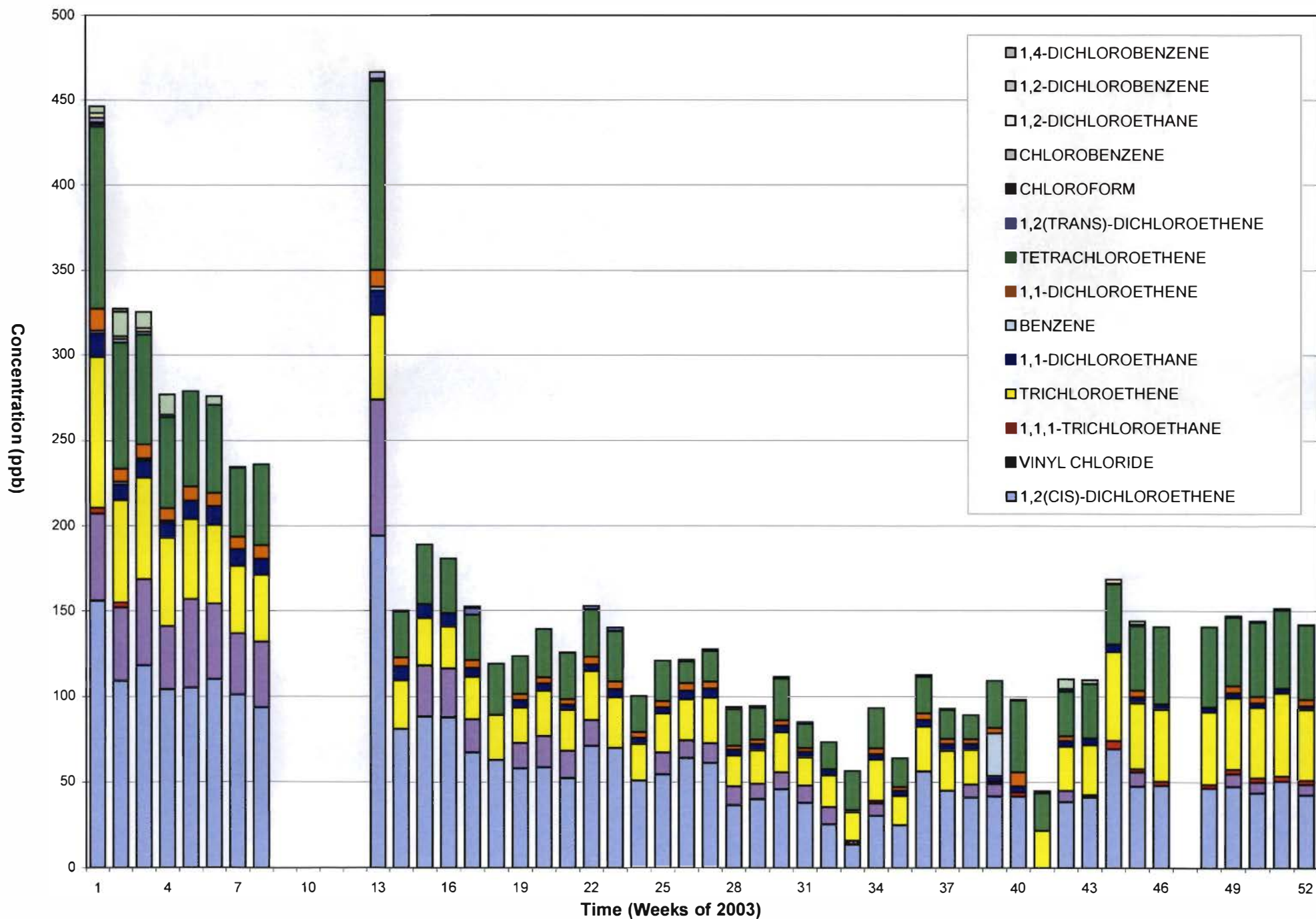


Table 1

2003 Recovery Well Operation

WEEK (STARTING MONDAY)	SOURCE WELLS	PLUME WELLS	COMMENTS
	W-3, W-4D	W-183, W-184, W-187	Assumed control of plant - 1/1/03
1/6/03	W-3, W-4D	W-183, W-184, W-187	
1/13/03	W-3, W-4D	W-183, W-184, W-187	
1/20/03	W-3, W-4D	W-183, W-184, W-187	
1/27/03	W-3, W-4D	W-183, W-184, W-187	
2/3/03	W-3, W-4D	W-184, W-187	
2/10/03	W-3, W-4D	W-184, W-187	
2/17/03	W-3, W-4D	W-184, W-187	
2/24/03	W-3, W-4D	W-184, W-187	W-184, W-187 offline 2/26/03
3/3/03	W-3, W-4D		
3/10/03	W-3, W-4D		
3/17/03	W-3, W-4D		
3/24/03	W-3, W-4D		
3/31/03	W-3, W-4D	W-184, W-187	
4/7/03	W-3, W-4D	W-184, W-187	
4/14/03	W-3, W-4D	W-184, W-187	
4/21/03	W-3, W-4D	W-184, W-187	
4/28/03	W-3, W-4D	W-184, W-187	
5/5/03	W-3, W-4D	W-184, W-187	
5/12/03	W-3, W-4D	W-184, W-187	
5/19/03	W-3, W-4D	W-184, W-187	
5/26/03	W-3, W-4D	W-184, W-187	
6/2/03	W-3, W-4D	W-184, W-187	
6/9/03	W-3, W-4D	W-184, W-187	
6/16/03	W-3, W-4D	W-184, W-187	
6/23/03	W-3, W-4D	W-184, W-187	
6/30/03	W-3, W-4D	W-184, W-187	
7/7/03	W-3, W-4D	W-184, W-187	
7/14/03	W-3, W-4D	W-184, W-187	
7/21/03	W-3, W-4D	W-184, W-187	
7/28/03	W-3, W-4D	W-184, W-187	
8/4/03	W-3, W-4D	W-184, W-187	
8/11/03	W-3, W-4D	W-184, W-187	
8/18/03	W-3, W-4D	W-184, W-187	
8/25/03	W-3, W-4D	W-184, W-187	
9/1/03	W-3, W-4D	W-184, W-187	
9/8/03	W-3, W-4D	W-184, W-187	
9/15/03	W-3, W-4D	W-184, W-187	
9/22/03	W-3, W-4D	W-184, W-187	W-3 offline - 9/26
9/29/03	W-4D	W-184, W-187	W-383 online - 10/1
10/6/03	W-4D	W-184, W-187, W-383	W-283 offline - 10/10
10/13/03	W-4D	W-184, W-187	W-183 online - 10/14
10/20/03	W-4D	W-183, W-184, W-187	
10/27/03	W-4D	W-183, W-184, W-187	
11/3/03	W-4D	W-183, W-184, W-187	
11/10/03	W-4D	W-183, W-184, W-187	
11/17/03	W-4D	W-183, W-184, W-187	
11/24/03	W-4D	W-183, W-184, W-187	
12/1/03	W-4D	W-183, W-184, W-187	
12/8/03	W-4D	W-183, W-184, W-187	
12/15/03	W-4D	W-183, W-184, W-187	
12/22/03	W-4D	W-183, W-184, W-187	
12/29/03	W-4D	W-183, W-184, W-187	

Figure 6
PUREX SITE - 2003 - COMBINED AIR DISCHARGE
Tetrachloroethene

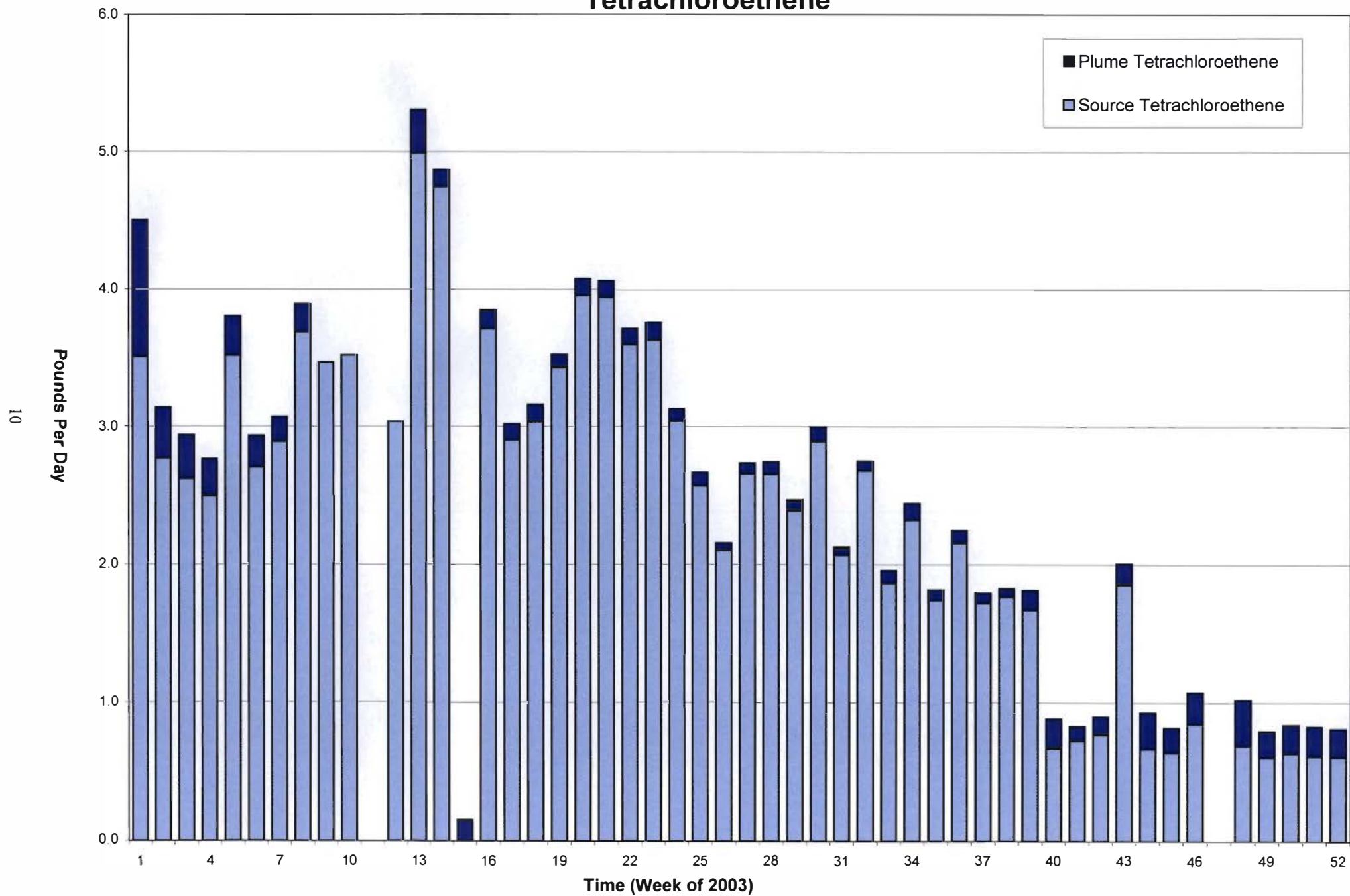
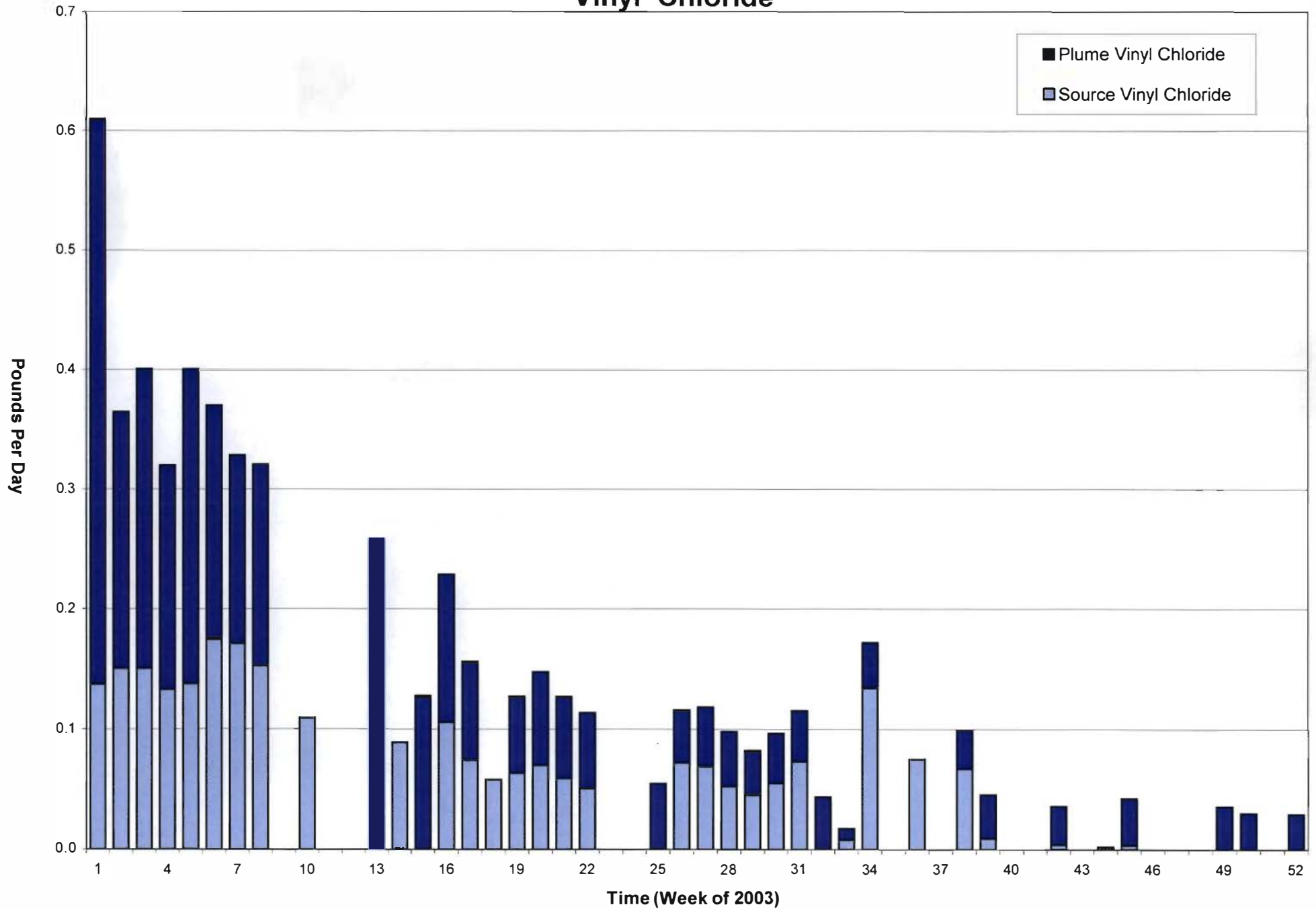


Figure 7
PUREX SITE - 2003 - COMBINED AIR DISCHARGE
Vinyl Chloride



3.0 2003 Environmental Monitoring Program

3.1 2003 Environmental Monitoring Dates, Wells and Parameters

In compliance with the Mitchel Field-Purex Groundwater Remediation Project's (MFPGRP) Remediation Monitoring Plan (RMP), the County conducted a baseline sampling event in Monitoring Year (MY) 2003 (January 1, 2003 to December 31, 2003). The sampling event was conducted by NCDPW personnel in September. Groundwater collected during the sampling event was analyzed for volatile organic compounds (VOC's). The monitoring network consists of 24 wells (Figure 8). All monitoring wells are equipped with dedicated sampling devices (Grundfos Redi-flo 2 submersible pump) (Appendix D).

3.1.1 2003 Environmental Monitoring Special Notes

Only one (1) monitoring well sampling round was completed in MY 2003. However, the September 2003 sampling event was more comprehensive than past events, see section 4.1.1 for more details.

4.0 Environmental Monitoring Results

4.1 Semi-Annual Sampling Results

4.1.1 Volatile Organic Sampling Results

Groundwater samples were collected from thirty-one (31) monitoring and recovery wells during the September sampling event. 2003 was the first year for the County to operate and monitor the MFPGRF, therefore to gain a better understanding of the nature and extent of the area's groundwater contamination the County decided to perform an expanded monitoring well sampling round. For this comprehensive round the County added five (5) monitoring and two (2) recovery wells to the usual twenty-four (24) monitoring wells examined during the semi-annual well sampling program. The results of the September 2003 sampling analyses are presented in Tables 2 and 3. These tables list only those compounds which have been detected historically at the Purex site. If a specific compound listed in the List of Analytes groundwater clean-up criteria (Table 1 & 2 in Appendix D) does not appear in the tables it has never been detected in groundwater at the site.

Figure 8 presents an aerial site map showing TVOC concentration contours in groundwater, using the September 2003 monitoring well sampling results. Of the twenty-nine (29) monitoring wells sampled, fourteen (14) wells had TVOCs less than 10 ppb, twelve (12) wells had TVOCs greater than 10 ppb but less than 100 ppb and three (3) wells had TVOCs greater than 100 ppb.

Figure 8



Legend

- Upper Magothy Monitoring Wells With TVOC(ppb) Reading for 10/03 (36)
- ▲ Plume Recovery Wells
- ▲ Source Area Recovery Wells
- Containment Area
- Pipe Recovery

- Purex TVOC(ppb) Contour Oct., 2003
- >50ppb
- >350ppb
- NO DATA (Inferred extent of Plume)



Site Location

**PUREX SITE & VICINITY
PUREX TVOC (ppb)
Sept./Oct., 2003**

Mitchel Field, NY
Prepared By: - NCDPW - Water Resources Engineering Unit



1 Inch equals 500 Feet

Nassau County



Geographic Information System

Copyright 1993-2002
County of Nassau, New York

Date: 09/26/2005

Table 2a

PUREX SITE

N9702 SEMI-ANNUAL GROUNDWATER SAMPLING RESULTS ✓ ✓ ✓ ✓

WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL
X-156	X-157	W-234	W-251	W-291	W-402	W-405	W-435	W-461	W-302	W-305	W-311R	W-361	W-363
DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED
9/16/2003	9/16/2003	9/25/2003	9/16/2003	9/11/2003	9/18/2003	9/18/2003	9/25/2003	9/25/2003	9/15/2003	9/16/2003	9/23/2003	9/15/2003	9/12/03
VOLATILE ORGANICS COMPOUNDS (ppb)													
Vinyl Chloride	5.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	4.8	BDL	BDL	BDL	BDL
1,1-Dichloroethene	21.1	271.0	BDL	BDL	BDL	1.4	BDL	BDL	2.1	50.3	BDL	BDL	BDL
1,2-Dichloroethene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	4.6	BDL	BDL	BDL	BDL
1,1-Dichloroethane	2.9	2.7	BDL	BDL	BDL	1.8	BDL	BDL	1.1	16.9	BDL	2.6	BDL
c-1,2-Dichloroethylene	BDL	BDL	2.2	1.1	BDL	BDL	BDL	BDL	BDL	BDL	47.3	BDL	BDL
Chloroform	BDL	1.7	BDL	BDL	BDL	BDL	BDL	BDL	6.1	BDL	BDL	BDL	1.6
1,1,1-Trichloroethane	44.6	61.2	BDL	BDL	BDL	BDL	BDL	BDL	3.2	47.5	BDL	BDL	BDL
1,2-Dichloroethane	BDL	3.3	BDL	BDL	BDL	BDL	BDL	BDL	2.3	BDL	0.9	BDL	BDL
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5.4	BDL	1.2	BDL	BDL
Trichloroethylene	2.0	6.6	BDL	2.7	BDL	3.3	2.3	5.5	32.9	335.0	BDL	12.3	BDL
1,1,2-Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethylene	6.0	BDL	39.5	3.7	1.3	6.9	5.4	5.7	11.9	239.0	2.2	13.1	BDL
Chlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	10.4	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
m,p-Xylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
o-Xylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isopropylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.5	BDL	BDL	BDL
n-Propylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,3,5-Trimethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,4-Trimethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
sec-Butyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
tert-Butyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
p-Isopropyltoluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.5	BDL	BDL	BDL
1,3-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	20.7	BDL	BDL	BDL
Hexachlorobutadiene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,3-Trichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,3-Trichloropropane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl t-Butylether (MTBE)	BDL	BDL	BDL	BDL	4.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
	79.8	374.0	43.7	7.5	5.5	13.4	7.7	11.2	51.2	746.0	2.2	17.4	6.6
SEMI-VOLATILE ORGANIC COMPOUNDS (ppb)													
1,2-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.6	BDL	BDL	BDL
1,3-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	45.7	BDL	BDL	BDL
1,4-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.0	BDL	BDL
Diethyl Phthalate	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5.6	BDL	BDL
	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.3	5.6	2.0	0.0
INORGANIC PARAMETERS (mg/l)													
ph	5.94	5.4	6.59	6.24	6.01	5.62	5.32	6.04	4.79	6.04	5.7	5.6	5.73
Specific Conductance (micromhos)	214	132	673	200	630	135	121	186	217	769	154	448	200
Alkalinity as Calcium Carbonate	25	6	48	16	67	11	8	16	BDL	32	16	19	30
Chemical Oxygen Demand	BDL	BDL	BDL	BDL	BDL	16.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hardness, Total	44.7	25.5	87.7	43.1	116	BDL	11.7	23.4	29.9	106	26.1	36.3	59.4
Nitrate as N	1.69	3.23	1.19	0.65	4.88	BDL	BDL	BDL	BDL	0.58	BDL	BDL	2.36
Total Phosphorus as P	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sodium, Total	22.3	12.2	67.4	37	69.1	17.5	17.7	20.1	25.5	105	19.7	66.6	15.4
Total Kjeldahl	0.54	0.13	0.13	BDL	0.35	0.12	BDL	BDL	BDL	0.2	0.11	BDL	0.16
Ammonia as N	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sulfate	19	6.3	28.3	20.2	32.9	BDL	BDL	25.7	20.8	41.2	15.2	23.2	15.3
Chloride	32.5	37.5	140	65	110	27.5	30	27.5	45	185	27.5	105	27.5
Total Dissolved Solids	168	127	362	205	362	77	81	116	129	458	108	266	145
Total Suspended Solids	6	5	BDL	1	BDL	3	1	4	1	BDL	BDL	2	BDL
Arsenic	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.006	BDL	BDL	BDL	BDL	BDL
Iron, Total	3.07	2.81	4.76	0.654	0.011	3.04	0.346	5.34	0.02	0.742	0.144	0.194	0.01
Manganese, Total	0.088	0.037	0.581	0.018	0.022	0.013	0.003	0.059	0.01	0.981	0.026	0.03	0.755
Nickel, Total	0.001	0.007	BDL	0.001	0.003	BDL	0.001	BDL	0.003	BDL	BDL	BDL	BDL
Chromium, Total	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.001	BDL

LEGEND

BDL = Below Detection Limit
NA = Not Analyzed1A
2/26/2004

Table 2b
PUREX SITE
SEMI-ANNUAL GROUNDWATER SAMPLING RESULTS

WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL	WELL
W-366	W-367	W-368	W-369	W-370	W-371	W-372	W-373	W-375	W-377	W-378	W-380	W-381	W-382	W-383	W-384
DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED
9/11/03	10/2/03	9/12/03	9/26/03	9/26/03	9/22/03	9/22/03	9/22/03	9/22/03	9/22/03	9/22/03	9/24/03	9/24/03	9/24/03	9/24/03	9/23/03

VOLATILE ORGANICS COMPOUNDS (ppb)

Vinyl Chloride	BDL	BDL	BDL	BDL	BDL	17.2	BDL	BDL	BDL	BDL	BDL	29.3	BDL	BDL	BDL
1,1-Dichloroethane	BDL	4.6	7.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.9	BDL	BDL	BDL
1,2-T-Dichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	BDL	BDL	1.5	BDL	BDL	4.3	BDL	BDL	BDL	BDL	BDL	6.1	BDL	BDL	1.1
c-1,2-Dichloroethylene	BDL	6.7	18.2	BDL	BDL	24.2	2.0	BDL	BDL	BDL	BDL	57.4	BDL	BDL	10.9
Chloroform	BDL	3.9	8.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	BDL	3.0	4.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	BDL	BDL	BDL	BDL	BDL	0.8	BDL	BDL	BDL	BDL	BDL	1.8	BDL	BDL	BDL
Trichloroethylene	11.2	11.6	29.6	3.2	BDL	10.9	BDL	BDL	BDL	5.2	BDL	7.2	BDL	BDL	6.0
1,1,2-Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethylene	2.2	6.6	12.3	2.1	1.2	12.3	1.5	BDL	BDL	3.9	1.8	8.4	BDL	BDL	3.5
Chlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3.3	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
m,p-Xylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
o-Xylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isopropylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
n-Propylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,3,5-Trimethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,4-Trimethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
sec-Butyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
tert-Butyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
p-Isopropyltoluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5.8	BDL	BDL	BDL
1,3-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.1	BDL	BDL	BDL
1,2-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	66.9	8.4	1.1	BDL
Hexachlorobutadiene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,3-Trichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,3-Trichloropropane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl t-Butylether (MTBE)	BDL	BDL	BDL	BDL	BDL	2.9	BDL	2.3	33.7	BDL	BDL	26.2	BDL	BDL	BDL
	13.4	36.4	82.6	5.1	1.2	72.6	3.5	2.1	33.7	9.1	1.8	214.4	8.4	1.1	21.5

SEMI-VOLATILE ORGANIC COMPOUNDS (ppb)

1,2-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5.8	1.7	BDL	BDL
1,3-Dichlorobenzene	BDL	BDL	BDL	1.2	4.0	BDL	BDL	BDL	1.2	BDL	BDL	63.1	38.0	BDL	2.6
1,4-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.6	1.5	9.2	BDL
Diethyl Phthalate	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
	6.0	0.6	0.0	1.2	4.0	0.0	0.0	0.0	1.2	0.0	0.0	64.7	45.7	10.9	2.6

INORGANIC PARAMETERS (mg/l)

pH	5.62	5.62	5.57	6.37	6.33	6.39	5.94	6.32	6.38	5.99	5.96	6.37	6.52	6.73	5.72
Specific Conductance (micro mhos/cm)	334	422	619	630	469	424	326	258	417	862	1060	432	382	315	378
Alkalinity as Calcium Carbonate	17	17	14	68	23	54	17	24	45	36	37	97	61	76	18
Chemical Oxygen Demand	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	198	BDL	BDL	BDL
Hardness, Total	67.5	64.2	85.8	69.9	64.4	95.3	46.6	29.5	50.9	45.8	32.7	BDL	79.4	80.2	50.1
Nitrate as N	2.63	2.08	2.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total Phosphorus as P	BDL	0.05	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.42	BDL	BDL	BDL
Sodium, Total	36.4	53	76.6	79.7	31.8	44.2	41.2	37.7	45.1	139	180	37	32.5	23	48.1
Total Kjeldahl	0.36	0.1	0.23	0.35	0.27	0.14	BDL	BDL	BDL	BDL	BDL	0.64	0.26	0.46	BDL
Ammonia as N	BDL	BDL	BDL	0.25	0.23	0.26	BDL	BDL	BDL	BDL	BDL	0.46	0.23	0.37	BDL
Sulfate	36.2	28.6	31.2	39.8	24.3	25	28.5	20.7	25.9	89.1	99.9	21.6	22.5	20.5	23.5
Chloride	55	90	145	108	95	80	65	45	77.5	178	235	75	57.5	35	80
Total Dissolved Solids	226	236	373	330	237	229	178	174	215	513	590	265	206	187	218
Total Suspended Solids	BDL	1	3	50	25	2	5	31	34	32	24	105	34	12	2
Arsenic	BDL	BDL	BDL	BDL	0.01	BDL	BDL	BDL	BDL	0.009	0.014	BDL	BDL	BDL	BDL
Iron, Total	0.01	0.159	0.096	36.4	38.3	0.68	2.07	3.24	29.7	1.25	3.85	16.4	23.4	17.7	0.254
Manganese, Total	0.058	0.007	0.824	5.26	8.88	1.49	0.645	0.123	0.897	0.008	0.038	1.95	6.28	4.11	0.588
Nickel, Total	BDL	0.001	BDL	0.001	0.001	BDL	BDL	0.003	BDL	0.002	BDL	0.006	BDL	BDL	BDL
Chromium, Total	BDL	BDL	0.001	0.001	0.001	BDL	BDL	0.001	BDL	0.001	BDL	BDL	BDL	BDL	BDL

LEGEND

BDL = Below Detection Limit
NA = Not Analyzed

Table 3
PUREX SITE
2003 RECOVERY WELL SAMPLING RESULTS
VOLATILE ORGANICS COMPOUNDS (ppb)

	WELL W-187 DATE SAMPLED		WELL W-383D DATE SAMPLED	
		9/18/03		10/2/03
Dichlorodifluoromethane		BDL		BDL
Vinyl Chloride		19.9		BDL
Chloroethane		BDL		BDL
1,1-Dichloroethene		BDL		BDL
1,2-T-Dichloroethene		BDL		BDL
1,1-Dichloroethane		5.7		2.6
c-1,2-Dichloroethylene		62.0		13.4
Chloroform		BDL		2.5
1,1,1-Trichloroethane		BDL		19.7
Carbon Tetrachloride		BDL		BDL
1,2-Dichloroethane		1.2		1.1
Benzene		0.9		BDL
Trichloroethylene		26.3		392
1,1,2-Trichloroethane		BDL		BDL
Toluene		BDL		BDL
Tetrachloroethylene		24.2		89.8
Chlorobenzene		BDL		BDL
1,1,1,2-Tetrachloroethane		BDL		BDL
Ethyl Benzene		BDL		BDL
m,p-Xylene		BDL		BDL
o-Xylene		BDL		BDL
Styrene		BDL		BDL
Isopropylbenzene		BDL		BDL
n-Propylbenzene		BDL		BDL
1,3,5-Trimethylbenzene		BDL		BDL
1,2,4-Trimethylbenzene		BDL		BDL
sec-Butyl Benzene		BDL		BDL
tert-Butyl Benzene		BDL		BDL
p-Isopropyltoluene		BDL		BDL
1,4-Dichlorobenzene		BDL		BDL
1,3-Dichlorobenzene		6.5		BDL
1,2-Dichlorobenzene		BDL		BDL
Hexachlorobutadiene		BDL		BDL
Naphthalene		BDL		BDL
1,2,3-Trichlorobenzene		BDL		BDL
1,2,3-Trichloropropane		BDL		BDL
Methyl t-Butylether (MTBE)		BDL		BDL
TVOC		146.7		521.1

The figure derived from the September 2003 monitoring well sampling results shows a long and narrow plume, approximately 2500 ft. long and 200 ft. wide. The plume of contamination emanates from beneath the former Purex site. Downgradient TVOC concentrations within the plume range from 52 ppb to 214 ppb in the vicinity of plume recovery well W-183. The leading edge of the plume has “forked” in response to pumping effects created by recovery wells W-383D and W-187 (western prong) and W-184 (eastern prong). Both prongs appear to be under hydraulic control allowing for efficient recovery of contaminated groundwater from the former Purex site.

Further review of TVOC concentrations in the Upper Magothy formation indicates that two additional sources of groundwater contamination not attributable to the Purex site may be present in the study area. The first is observed upgradient and northeast of the former Purex site. County network monitoring wells N-9703 (X-156) and N9713 (X-157) located on Quentin Roosevelt Boulevard exhibit TVOC concentrations of 79 ppb and 374 ppb respectively. These wells may be impacted by activities at the former Roosevelt Field site. The second source of volatile organic contamination is located in the vicinity of monitoring wells MW-367 and 368. These wells had TVOC concentrations of 36 and 83 ppb respectively. The contamination is believed to be associated with the operation of a closed loop cooling system in the vicinity of 60 Charles Lindbergh Blvd.

Review of the monitoring well data collected during MY 03 indicates that the location of the operating recovery wells is correct and provides hydraulic control and allows for efficient recovery of contaminated groundwater from the MFGRP’s plume.

In MY 2003, the MFGRP was in its thirteenth (13th) year of the remediation. To better understand the progress made over the thirteen (13) years of operation, historical plots of the sampling results from specific wells that still exhibit measurable levels of contamination in MY 2003 are presented in Figures 9 through 15. A summary of these plots is as follows:

Historical High TVOC

<u>Monitoring Well</u>	<u>Concentration</u>	<u>Date</u>	<u>MY 2003 Concentration</u>
302	23,000 ppb	5/22/90	731.4 ppb
311R	34,600 ppb	7/20/89	77.4 ppb
371	22,756 ppb	1/5/95	74.6 ppb
380	32,780 ppb	10/26/95	213.3 ppb
381	7870 ppb	10/25/95	8.4 ppb
383	23,814 ppb	10/26/95	21.5 ppb
234	11,411 ppb	7/29/93	41.7 ppb

Figure 9
W-302
VOC CONCENTRATIONS
1988 to 2003

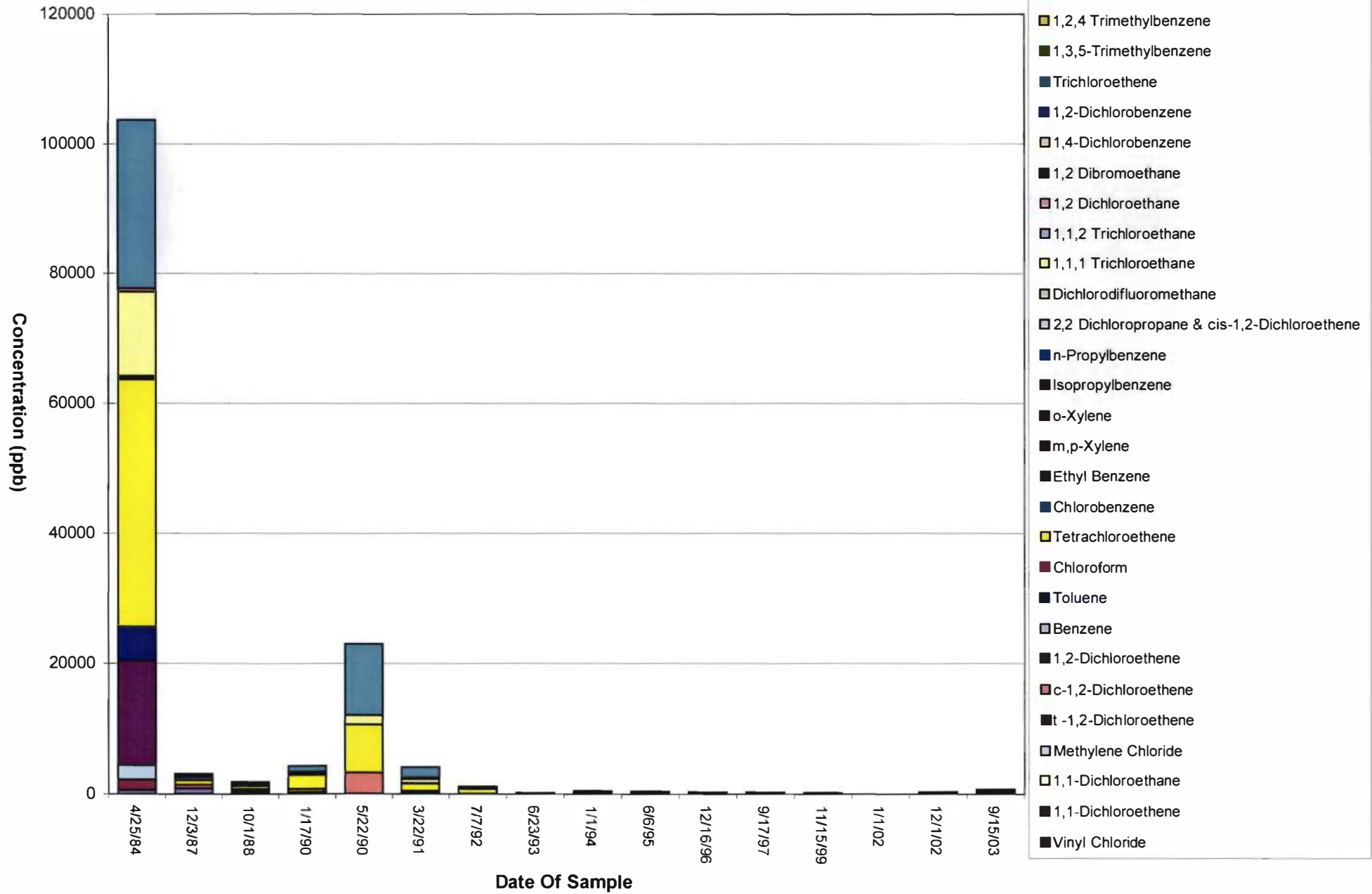


Figure 10
W-311R
VOC CONCENTRATIONS
1988 to 2003

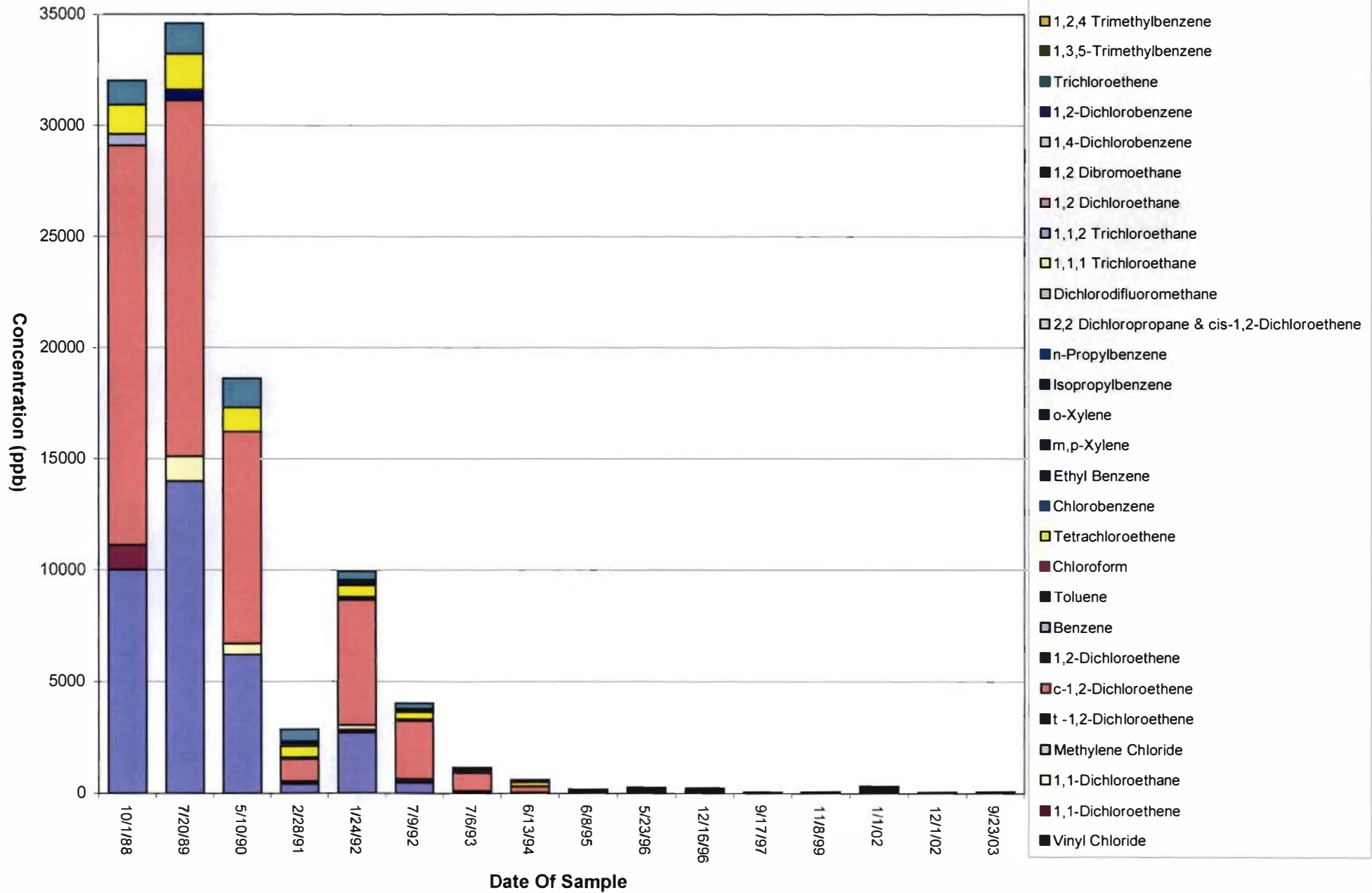


Figure 11
W-371
VOC CONCENTRATIONS
1995 to 2003

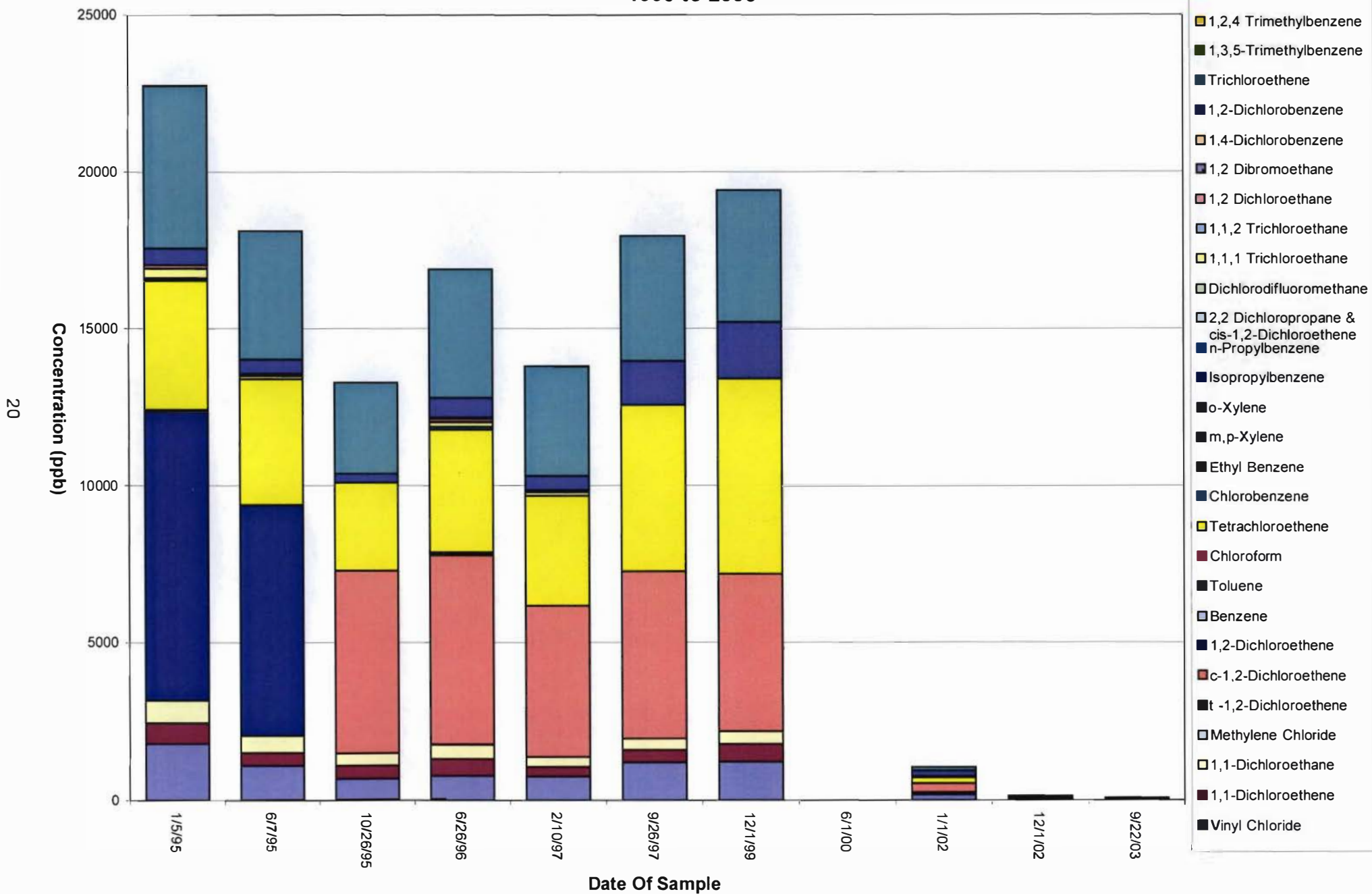


Figure 12
W-380
VOC CONCENTRATIONS
1995 to 2003

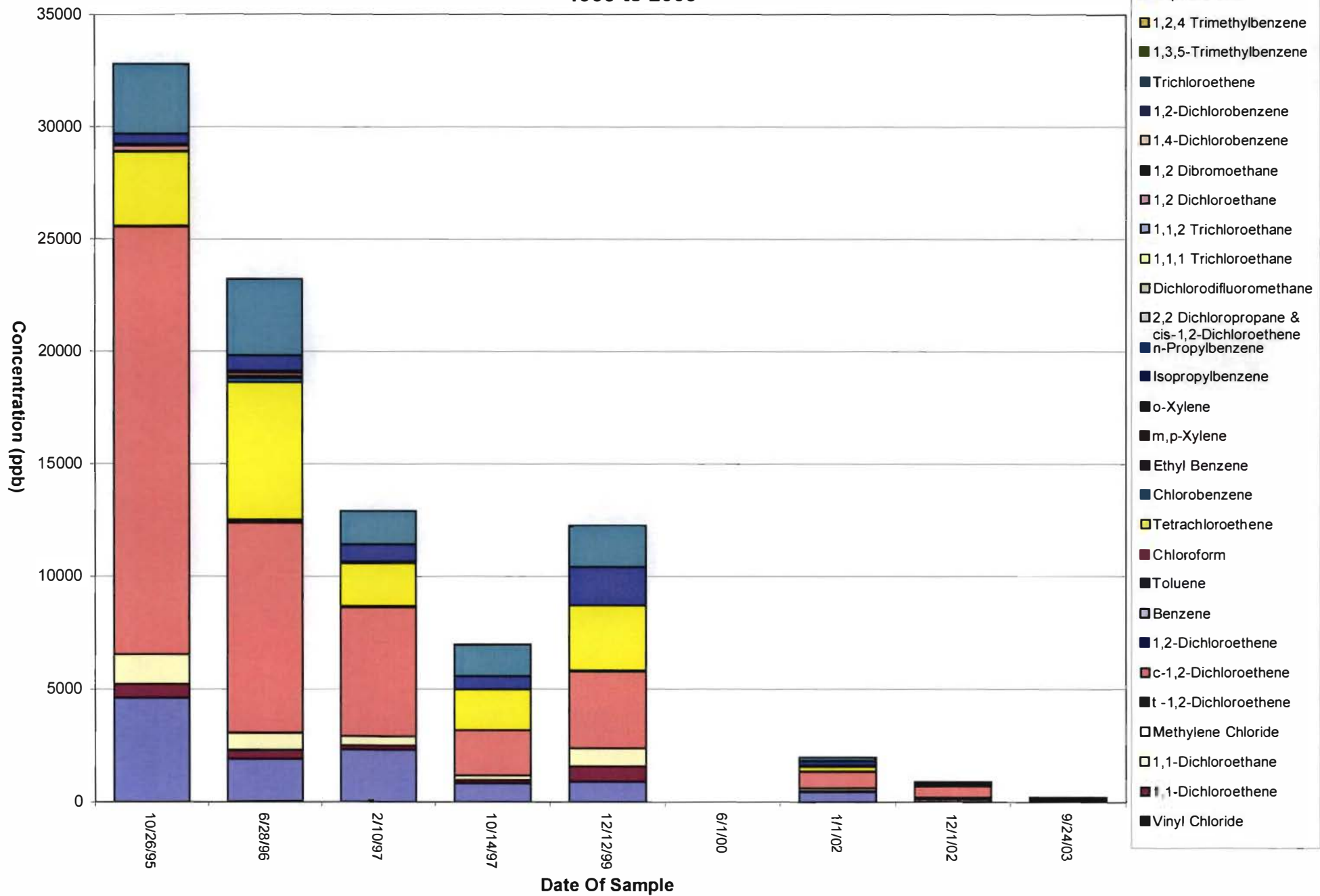


Figure 13
W-381
VOC CONCENTRATIONS
1995 to 2003

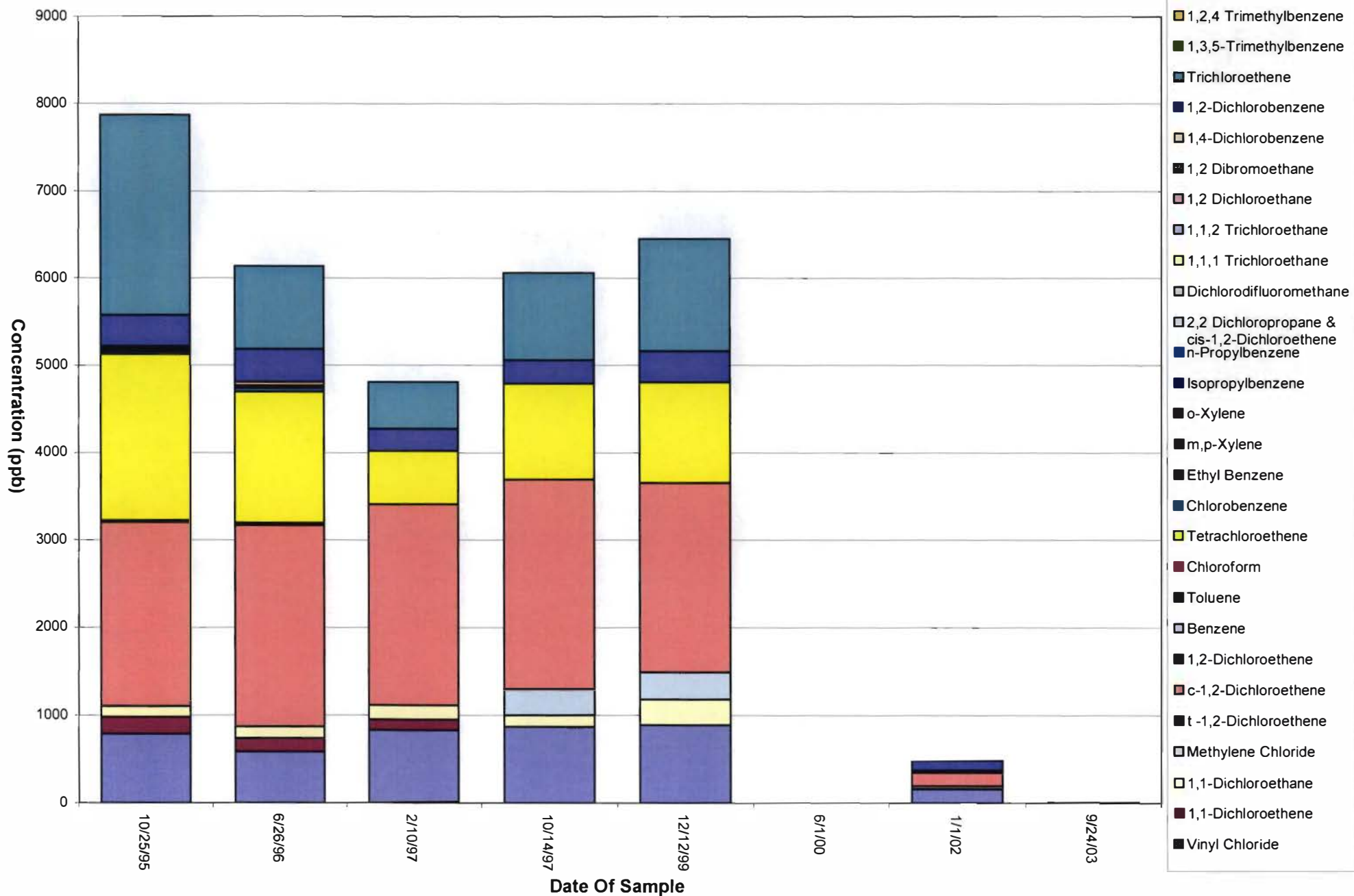


Figure 14
W-383
VOC CONCENTRATIONS
1995 to 2003

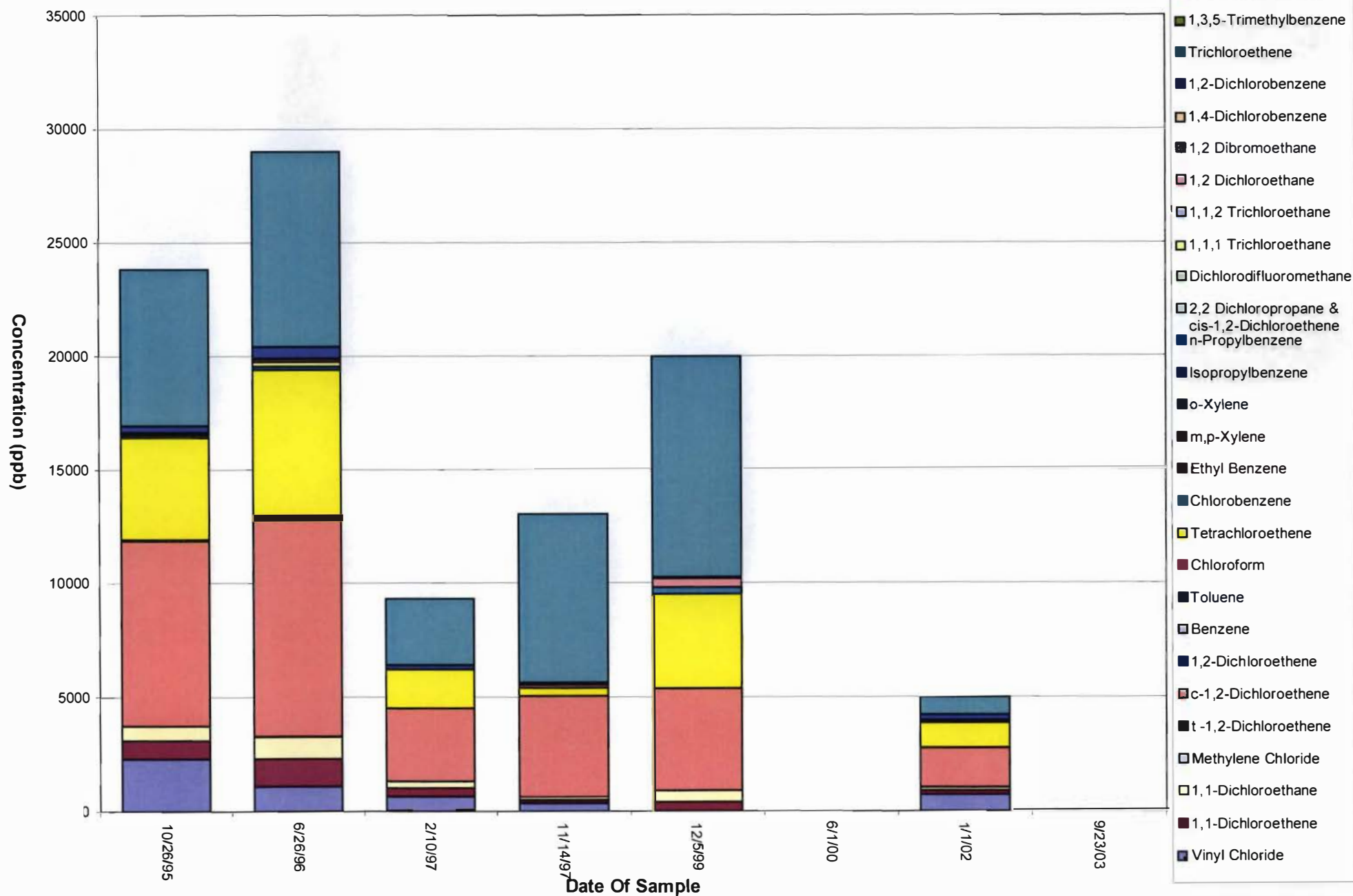
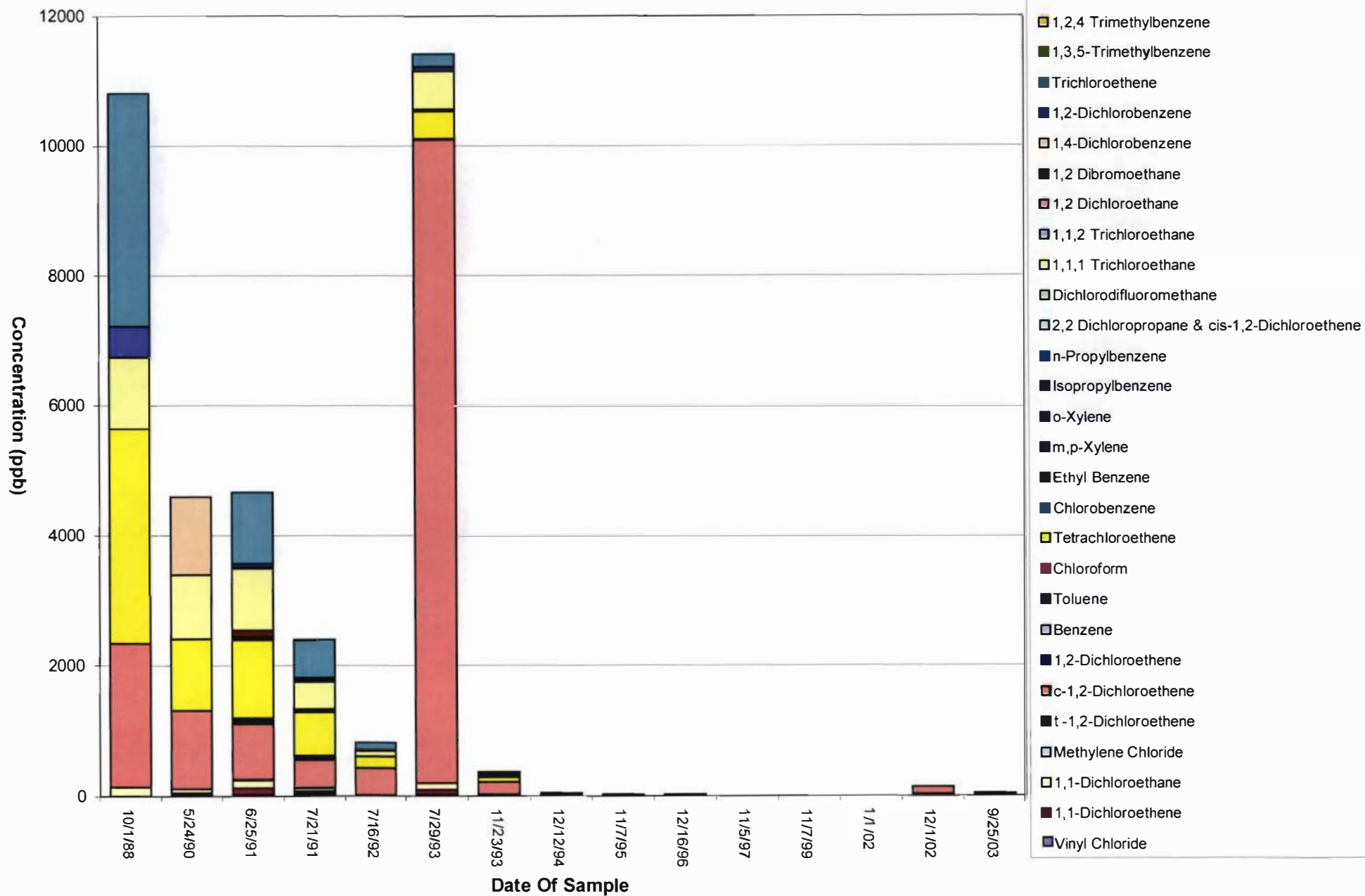


Figure 15
W-234
VOC CONCENTRATIONS
1988 to 2003



Review of the data presented indicates that the bulk of the remediation, from a contaminant mass standpoint, has been completed at the MFGRP site. The current aerial extent and the remaining levels of contamination reflect a low concentration asymptotic condition which is characteristic of long term pump and treat remediations.

4.2 Semi-Annual Hydraulic Monitoring

4.2.1 Hydraulic Effects

Hydraulic conditions are monitored on a semi-annual basis to ensure that all operating recovery wells are effectively treating plume contamination. All available monitoring wells were measured by County hydrogeologists on September 11, 2003. The results of this survey are presented in table 3.

The depth to water measurements collected during the survey were converted to water elevations. These elevations were then plotted to produce a potentiometric surface map for the Upper Magothy formation. The contoured elevation data is presented in figure 16.

Review of figure 16 indicates that regional contour elevations range from 51 ft. above mean sea level in the vicinity of County well N-9713 (X-157) to approximately 33 ft. above mean sea level near plume recovery well, W-187. Local groundwater flow in the upper portion of the Magothy formation is from the northwest to the southeast. All contours have been modified by groundwater recovery operations. A large depression is formed just south of the UPS building insuring hydraulic control of the “lead edge” of volatile organic contamination.

Table 4
PUREX GROUNDWATER REMEDIATION
WATER LEVEL MEASUREMENTS

September 11, 2003

M. Flaherty & J. Kardos

WELL	MEASURING POINT ELEV.	D.T.W.	W.T.E.
GLACIAL WELL			
W-234	79.69	29.57	50.12
UPPER MAGOTHY WELLS			
W-302	81.74	37.45	44.29
W-305	79.73	30.67	49.06
W-311R	81.70	41.42	40.28
W-361	76.53	27.13	49.40
W-363		32.41	
W-366	71.08	21.95	49.13
W-367	81.71	36.00	45.71
W-368	78.63	33.04	45.59
W-369	76.01	26.82	49.19
W-370	77.43	29.07	48.36
W-371	76.66	35.62	41.04
W-372	76.44	33.50	42.94
W-373	76.26	31.30	44.96
W-375	76.78	29.57	47.21
W-377	77.79	32.00	45.79
W-378	77.81	34.85	42.96
W-380	77.14	32.83	44.31
W-381	76.92	29.92	47.00
W-382	77.16	30.05	47.11
W-383	75.76	42.91	32.85
LOWER MAGOTHY WELLS			
W-402	81.67	38.05	43.62
W-405	80.72	31.95	48.77
W-435	77.96	29.43	48.53
W-461	76.02	28.34	47.68
UPGRADIENT WELLS			
X-156	87.12	35.48	51.64
X-157	87.15	36.33	50.82

LEGEND

D.T.W. = DEPTH TO WATER
W.T.E. = WATER TABLE ELEVATION
NR = NO READING

FIGURE 16



Legend

Contour Map Sept-03

Monitoring Wells



Site Location

PUREX POTENTIOMETRIC SURFACE SEPTEMBER, 2003

Prepared By: - NCDPW - Water Resources
Engineering Unit



1 Inch equals 600 Feet

Nassau County



Geographic Information System

Copyright 1993, 2002
County of Nassau, New York

Date: 2/09/2006

APPENDIX A
PLANT EFFICIENCY REPORTS
2003

PLANT EFFICIENCY

JANUARY 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	24	100.0%	
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	10	41.7%	Clogged Sand Filter
12	15	62.5%	Clogged Sand Filter
13	24	100.0%	
14	24	100.0%	
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	24	100.0%	
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	18.5	77.1%	Power Outage
31	16	66.7%	Power Outage
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
744	707.5	95.1%	

PLANT EFFICIENCY

FEBRUARY 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	23.75	99.0%	Power Outage
5	24	100.0%	
6	24	100.0%	
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	24	100.0%	
12	24	100.0%	
13	24	100.0%	
14	24	100.0%	
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	24	100.0%	
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	16.5	68.8%	Power Outage
27	16	66.7%	Power Outage
28	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
672	656.25	97.7%	

PLANT EFFICIENCY

MARCH 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	16	66.7%	Power outage
7	15	62.5%	Power outage
8	8	33.3%	Power outage
9	15	62.5%	Power outage
10	15	62.5%	Power outage
11	24	100.0%	
12	24	100.0%	
13	24	100.0%	
14	24	100.0%	
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	24	100.0%	
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	16	66.7%	Unknown Failure
29	0	0.0%	Unknown Failure
30	0	0.0%	Unknown Failure
31	15.5	64.6%	Unknown Failure
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
744	628.5	84.5%	

PLANT EFFICIENCY

APRIL 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	24	100.0%	
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	24	100.0%	
12	24	100.0%	
13	24	100.0%	
14	24	100.0%	
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	24	100.0%	
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
720	720	100.0%	

PLANT EFFICIENCY

MAY 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	18	75.0%	Acid Washing
3	24	100.0%	
4	24	100.0%	
5	18	75.0%	Acid Washing
6	18	75.0%	Acid Washing
7	10	41.7%	Malfunctioning source pump (P-104) Solenoid
8	10	41.7%	Malfunctioning source pump (P-104) Solenoid
9	18	75.0%	Acid Washing
10	24	100.0%	
11	24	100.0%	
12	18	75.0%	Acid Washing
13	24	100.0%	
14	24	100.0%	
15	24	100.0%	
16	18	75.0%	Acid Washing
17	24	100.0%	
18	24	100.0%	
19	18	75.0%	Acid Washing
20	18	75.0%	Acid Washing
21	24	100.0%	
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	24	100.0%	
31	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
744	668	89.8%	

PLANT EFFICIENCY

JUNE 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	24	100.0%	
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	24	100.0%	
12	24	100.0%	
13	24	100.0%	
14	24	100.0%	
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	16	66.7%	Power outage
22	0	0.0%	Power outage
23	18	75.0%	Power outage
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
720	682	94.7%	

PLANT EFFICIENCY

JULY 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	24	100.0%	
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	24	100.0%	
12	24	100.0%	
13	24	100.0%	
14	24	100.0%	
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	24	100.0%	
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	24	100.0%	
31	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
744	744	100.0%	

PLANT EFFICIENCY

AUGUST 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	24	100.0%	
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	24	100.0%	
12	24	100.0%	
13	24	100.0%	
14	16	66.7%	Power Outage
15	0	0.0%	Power Outage
16	0	0.0%	Power Outage
17	0	0.0%	Power Outage
18	16	66.7%	Power Outage
19	14	58.3%	Pumps Cycling
20	24	100.0%	
21	24	100.0%	
22	15	62.5%	Pumps Cycling
23	0	0.0%	Offline - Pump Cycling Problem
24	0	0.0%	Offline - Pump Cycling Problem
25	16	66.7%	Pump Cycling Problem
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	24	100.0%	
31	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
744	581	78.1%	

PLANT EFFICIENCY

SEPTEMBER 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	24	100.0%	
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	24	100.0%	
12	24	100.0%	
13	24	100.0%	
14	24	100.0%	
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	22.5	93.8%	Power Outage
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
720	718.5	99.8%	

PLANT EFFICIENCY

OCTOBER 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	24	100.0%	
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	24	100.0%	
12	24	100.0%	
13	8	33.3%	Leaking Plume Stripper Tower - At air Line
14	16	66.7%	Leaking Plume Stripper Tower - At air Line
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	24	100.0%	
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	24	100.0%	
31	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
744	720	96.8%	

PLANT EFFICIENCY

NOVEMBER 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	18	75.0%	Acid Washing NW Plume Stripper Tower
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	24	100.0%	
12	24	100.0%	
13	24	100.0%	
14	16	66.7%	Pumps Cycling - Low well Level
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	24	100.0%	
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	
720	706	98.1%	

PLANT EFFICIENCY

DECEMBER 2003

DATE	HOURS OF OPERATION	EFFICIENCY OF OPERATION	REASON FOR OUTAGE
1	24	100.0%	
2	24	100.0%	
3	24	100.0%	
4	24	100.0%	
5	24	100.0%	
6	24	100.0%	
7	24	100.0%	
8	24	100.0%	
9	24	100.0%	
10	24	100.0%	
11	24	100.0%	
12	24	100.0%	
13	24	100.0%	
14	24	100.0%	
15	24	100.0%	
16	24	100.0%	
17	24	100.0%	
18	24	100.0%	
19	24	100.0%	
20	24	100.0%	
21	24	100.0%	
22	24	100.0%	
23	24	100.0%	
24	24	100.0%	
25	24	100.0%	
26	24	100.0%	
27	24	100.0%	
28	24	100.0%	
29	24	100.0%	
30	24	100.0%	
31	24	100.0%	
TOTAL HOURS IN THE MONTH	TOTAL HOURS OF OPERATION	EFFICIENCY OF MONTHLY OPERATION	YEARLY TOTALS
744	744	100.0%	

TOTAL HOURS IN THE YEAR	8760
TOTAL HOURS OF OPERATION	8276
EFFICIENCY OF YEARLY OPERATION	94.5%

APPENDIX B
MONTHLY INFLUENT MONITORING REPORTS
2003

PUREX SITE GROUNDWATER REMEDIATION FACILITY MONTHLY INFLUENT MONITORING REPORT

JANUARY 2003

[illegible]

**PUREX SITE
GROUNDWATER REMEDIATION FACILITY
MONTHLY INFLUENT MONITORING REPORT**

FEBRUARY 2003

INFLUENT PARAMETER	UNITS	Plume SP-101 02/03/05	Plume SP-101 02/10/03	Plume SP-101 02/17/03	Plume SP-101 02/24/03	Source SP-102 02/03/03	Source SP-102 02/10/03	Source SP-102 02/17/03	Source SP-102 02/24/03
FLOW, DAILY AVG	GPD	543176	525806	524777	524160	475149	508114	504206	517577
FLOW, DAILY MAX	GPD	606240	528480	525600	524160	524160	511200	505440	527040
VINYL CHLORIDE	µ g/l	52.0	44.3	35.9	38.5	31.5	41.0	40.6	34.7
1,1-DICHLOROETHANE	µ g/l	10.7	10.9	9.9	9.3	11.7	10.8	11.2	10.1
1,2(TRANS)-DICHLOROETHYLENE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2(CIS)-DICHLOROETHYLENE	µ g/l	105.0	110.0	101.0	93.4	450.0	403.0	436.0	388.0
1,1,1-TRICHLOROETHANE	µ g/l	BDL	BDL	BDL	BDL	267.0	189.0	174.0	194.0
TRICHLOROETHYLENE	µ g/l	46.7	46.0	39.3	39.2	407.0	359.0	390.0	393.0
BENZENE	µ g/l	BDL	BDL	BDL	BDL	BDL	0.9	BDL	0.7
TETRACHLOROETHYLENE	µ g/l	56.1	51.5	41.1	47.4	805.0	635.0	686.0	839.0
TOLUENE	µ g/l	BDL	BDL	BDL	BDL	56.3	57.0	59.8	54.7
m,p-XYLENE	µ g/l	BDL	BDL	BDL	BDL	21.0	19.1	22.7	22.2
o-XYLENE	µ g/l	BDL	BDL	BDL	BDL	11.4	10.8	11.8	11.2
1,1-DICHLOROETHENE	µ g/l	8.5	8.0	7.3	8.1	9.0	7.2	8.1	8.4
CARBON TETRACHLORIDE	µ g/l	BDL	BDL	BDL	BDL	BDL	31.2	37.8	42.7
BROMOFORM	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CHLOROFORM	µ g/l	BDL	BDL	BDL	BDL	7.6	5.1	6.1	BDL
DICHLOROBROMOMETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CHLOROBENZENE	µ g/l	BDL	BDL	BDL	BDL	9.8	11.1	11.3	10.3
ETHYLBENZENE	µ g/l	BDL	BDL	BDL	BDL	7.3	6.8	7.3	7.4
METHYL CHLORIDE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TRICHLOROFLUOROETHYANE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2-TRICHLOROETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2,2-TETRACHLOROETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-DICHLOROBENZENE	µ g/l	BDL	5.2	BDL	BDL	BDL	40.9	35.4	14.1
1,2-DICHLOROPROPANE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,3-DICHLOROBENZENE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-DICHLOROBENZENE	µ g/l	BDL	BDL	BDL	BDL	BDL	3.6	BDL	BDL
TRANS 1,3-DICHLOROPROPENE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CIS 1,3-DICHLOROPROPENE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
BROMOMETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,3-TRICHLORO-1,2,2-TRIFLUORO CHLOROETHANE	µ g/l	NA	NA	NA	NA	NA	NA	BDL	NA
	µ g/l	BDL	BDL	BDL	BDL	BDL	2.8	2.4	BDL

**PUREX SITE
GROUNDWATER REMEDIATION FACILITY
MONTHLY INFLUENT MONITORING REPORT**

MARCH 2003

INFLUENT PARAMETER	UNITS	Plume SP-101 03/03/04	Plume SP-101 03/10/03	Plume SP-101 03/17/03	Plume SP-101 03/24/03	Plume SP-101 03/31/03	Source SP-102 03/03/04	Source SP-102 03/10/03	Source SP-102 03/17/03	Source SP-102 03/24/03	Source SP-102 03/31/03
FLOW, DAILY AVG	GPD	148500	0	0	0	48360	448689	358457	524160	514080	314966
FLOW, DAILY MAX	GPD	522720	0	0	0	338520	522720	506880	524160	524160	509760
VINYL CHLORIDE	μ g/l					79.9	BDL	25.8		BDL	7.8
1,1-DICHLOROETHANE	μ g/l					14	10.5	12.2		22.9	6.7
1,2(TRANS)-DICHLOROETHYLENE	μ g/l					1.4	BDL	BDL		BDL	1.3
1,2(CIS)-DICHLOROETHYLENE	μ g/l					194	451	404		417	234
1,1,1-TRICHLOROETHANE	μ g/l					BDL	167	167		280	54.7
TRICHLOROETHYLENE	μ g/l					49.9	400	383		314	BDL
BENZENE	μ g/l					2.3	BDL	0.8		BDL	BDL
TETRACHLOROETHYLENE	μ g/l					111	796	833		695	1174
TOLUENE	μ g/l					BDL	61.8	62		44	43.7
m,p-XYLENE	μ g/l					BDL	22.5	24.6		13.8	19.6
o-XYLENE	μ g/l					BDL	11.1	12.7		8.1	8.4
1,1-DICHLOROETHENE	μ g/l					10	8	7.7		3.9	46.5
CARBON TETRACHLORIDE	μ g/l					BDL	36.4	34.3		53.8	23.2
BROMOFORM	μ g/l					BDL	BDL	BDL		BDL	BDL
CHLOROFORM	μ g/l					BDL	5.8	6.5		4.9	5.3
DICHLOROBROMOMETHANE	μ g/l					BDL	BDL	BDL		BDL	BDL
DIBROMOCHLOROMETHANE	μ g/l					BDL	BDL	BDL		BDL	BDL
CHLOROBENZENE	μ g/l					4.3	11	14.9		7.7	9.4
ETHYLBENZENE	μ g/l					BDL	6.6	8.4		4.9	6
METHYL CHLORIDE	μ g/l					BDL	BDL	BDL		BDL	BDL
TRICHLOROFLUOROETHYANE	μ g/l					BDL	BDL	BDL		BDL	BDL
1,1,2-TRICHLOROETHANE	μ g/l					BDL	BDL	BDL		BDL	BDL
1,1,2,2-TETRACHLOROETHANE	μ g/l					BDL	BDL	BDL		BDL	BDL
1,2-DICHLOROETHANE	μ g/l					BDL	BDL	BDL		BDL	BDL
1,2-DICHLOROBENZENE	μ g/l					BDL	23.4	41.5		BDL	9.5
1,2-DICHLOROPROPANE	μ g/l					BDL	BDL	BDL		BDL	BDL
1,3-DICHLOROBENZENE	μ g/l					BDL	BDL	BDL		BDL	BDL
1,4-DICHLOROBENZENE	μ g/l					BDL	BDL	BDL		BDL	BDL
TRANS 1,3-DICHLOROPROPENE	μ g/l					BDL	BDL	BDL		BDL	BDL
CIS 1,3-DICHLOROPROPENE	μ g/l					BDL	BDL	BDL		BDL	BDL
BROMOMETHANE	μ g/l					BDL	BDL	BDL		BDL	BDL
1,1,3-TRICHLORO-1,2,2-TRIFLUORO CHLOROETHANE	μ g/l					NA BDL	NA BDL	NA BDL		NA BDL	NA BDL

**PUREX SITE
GROUNDWATER REMEDIATION FACILITY
MONTHLY INFLUENT MONITORING REPORT**

APRIL 2003

INFLUENT PARAMETER	UNITS	Plume SP-101 04/07/03	Plume SP-101 04/14/03	Plume SP-101 04/21/03	Plume SP-101 04/28/03	Source SP-102 04/07/03	Source SP-102 04/14/03	Source SP-102 04/21/03	Source SP-102 04/28/03
FLOW, DAILY AVG	GPD	522514	512023	512023	508526	523954	507703	514697	502560
FLOW, DAILY MAX	GPD	524160	514080	515520	512640	524160	509760	524160	506880
VINYL CHLORIDE	µ g/l	BDL	29.9	28.6	19.2	20.4		24.2	17.5
1,1-DICHLOROETHANE	µ g/l	8.1	8.2	7.8	5.1	12.1		8.1	6
1,2(TRANS)-DICHLOROETHYLENE	µ g/l	BDL	BDL	BDL	3.8	BDL		BDL	15.2
1,2(CIS)-DICHLOROETHYLENE	µ g/l	81	88.2	87.7	67.4	525		375	297
1,1,1-TRICHLOROETHANE	µ g/l	BDL	BDL	BDL	BDL	273		145	116
TRICHLOROETHYLENE	µ g/l	28.3	27.5	24.4	24.8	511		342	303
BENZENE	µ g/l	BDL	BDL	BDL	BDL	1		BDL	BDL
TETRACHLOROETHYLENE	µ g/l	27.5	35.2	32.1	26.7	1086		849	687
TOLUENE	µ g/l	BDL	BDL	BDL	BDL	61.1		45.5	45.2
m,p-XYLENE	µ g/l	BDL	BDL	BDL	BDL	11.1		15.1	15.2
o-XYLENE	µ g/l	BDL	BDL	BDL	BDL	8.7		9.3	8.3
1,1-DICHLOROETHENE	µ g/l	5.1	BDL	BDL	4.5	8		BDL	8.4
CARBON TETRACHLORIDE	µ g/l	BDL	BDL	BDL	BDL	66.7		27.4	23.2
BROMOFORM	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
CHLOROFORM	µ g/l	BDL	BDL	BDL	BDL	5.8		BDL	3.6
DICHLOROBROMOMETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
DIBROMOCHLOROMETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
CHLOROBENZENE	µ g/l	BDL	BDL	BDL	BDL	9		7.3	8.3
ETHYLBENZENE	µ g/l	BDL	BDL	BDL	BDL	3.6		4.5	5.4
METHYL CHLORIDE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
TRICHLOROFLUOROETHYANE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
1,1,2-TRICHLOROETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
1,1,2,2-TETRACHLOROETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
1,2-DICHLOROETHANE	µ g/l	BDL	BDL	BDL	1	BDL		BDL	BDL
1,2-DICHLOROBENZENE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	26.8
1,2-DICHLOROPROPANE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
1,3-DICHLOROBENZENE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
1,4-DICHLOROBENZENE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	1.7
TRANS 1,3-DICHLOROPROPENE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
CIS 1,3-DICHLOROPROPENE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
BROMOMETHANE	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL
1,1,3-TRICHLORO-1,2,2-TRIFLUORO CHLOROETHANE	µ g/l	NA	NA	NA	NA	NA		NA	NA
	µ g/l	BDL	BDL	BDL	BDL	BDL		BDL	BDL

PUREX SITE GROUNDWATER REMEDIATION FACILITY MONTHLY INFLUENT MONITORING REPORT

MAY 2003

[illegible]

JUNE 2003

[illegible]

PUREX SITE GROUNDWATER REMEDIATION FACILITY MONTHLY INFLUENT MONITORING REPORT

JULY 2003

[illegible]

PUREX SITE GROUNDWATER REMEDIATION FACILITY MONTHLY INFLUENT MONITORING REPORT

AUGUST 2003

[illegible]

PUREX SITE GROUNDWATER REMEDIATION FACILITY MONTHLY INFLUENT MONITORING REPORT

SEPTEMBER 2003[illegible]

PUREX SITE GROUNDWATER REMEDIATION FACILITY MONTHLY INFLUENT MONITORING REPORT

OCTOBER 2003

[illegible]

**PUREX SITE
GROUNDWATER REMEDIATION FACILITY
MONTHLY INFLUENT MONITORING REPORT
NOVEMBER 2003**

INFLUENT PARAMETER	UNITS	Plume SP-101 11/03/03	Plume SP-101 11/10/03	Plume SP-101 11/17/03	Plume SP-101 11/24/03	Source SP-102 11/03/03	Source SP-102 11/10/03	Source SP-102 11/17/03	Source SP-102 11/24/03
FLOW, DAILY AVG	GPD	668160	543703	555909	575177	217200	212554	209691	214560
FLOW, DAILY MAX	GPD	879840	568800	599040	577440	217440	223200	223200	220320
VINYL CHLORIDE	µ g/l	BDL	8.3	BDL		1.3	1.8	BDL	
1,1-DICHLOROETHANE	µ g/l	4.4	3.7	3.4		3.1	2.5	2.7	
1,2(TRANS)-DICHLOROETHYLENE	µ g/l	BDL	BDL	BDL		BDL	2.8	BDL	
1,2(CIS)-DICHLOROETHYLENE	µ g/l	69.5	47.5	48.1		165.0	112.0	129.0	
1,1,1-TRICHLOROETHANE	µ g/l	4.7	1.9	2.3		98.1	32.5	43.0	
TRICHLOROETHYLENE	µ g/l	52.0	38.5	41.9		147.0	99.7	128.0	
BENZENE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
TETRACHLOROETHYLENE	µ g/l	35.6	37.5	45.2		369.0	345.0	456.0	
TOLUENE	µ g/l	BDL	BDL	BDL		3.8	3.3	4.4	
m,p-XYLENE	µ g/l	BDL	BDL	BDL		4.5	BDL	3.3	
o-XYLENE	µ g/l	BDL	BDL	BDL		2.6	3.0	2.2	
1,1-DICHLOROETHENE	µ g/l	BDL	3.7	BDL		4.9	2.0	BDL	
CARBON TETRACHLORIDE	µ g/l	BDL	BDL	BDL		7.7	2.7	3.2	
BROMOFORM	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
CHLOROFORM	µ g/l	BDL	BDL	BDL		4.7	2.3	3.1	
DICHLOROBROMOMETHANE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
DIBROMOCHLOROMETHANE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
CHLOROBENZENE	µ g/l	BDL	BDL	BDL		1.9	BDL	2.6	
ETHYLBENZENE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
METHYL CHLORIDE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
TRICHLOROFLUOROETHYANE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
1,1,2-TRICHLOROETHANE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
1,1,2,2-TETRACHLOROETHANE	µ g/l	BDL	BDL	BDL		BB	BDL	BDL	
1,2-DICHLOROETHANE	µ g/l	2.4	0.9	BDL		BDL	BDL	BDL	
1,2-DICHLOROBENZENE	µ g/l	BDL	2.1	BDL		BDL	11.3	BDL	
1,2-DICHLOROPROPANE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
1,3-DICHLOROBENZENE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
1,4-DICHLOROBENZENE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
TRANS 1,3-DICHLOROPROPENE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
CIS 1,3-DICHLOROPROPENE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
BROMOMETHANE	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	
1,1,3-TRICHLORO-1,2,2-TRIFLUORO CHLOROETHANE	µ g/l	NA	NA	NA		NA	NA	NA	
	µ g/l	BDL	BDL	BDL		BDL	BDL	BDL	

PUREX SITE GROUNDWATER REMEDIATION FACILITY MONTHLY INFLUENT MONITORING REPORT

DECEMBER 2003[illegible]

APPENDIX C
MONTHLY EFFLUENT MONITORING REPORTS
2003

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
JANUARY 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 01/07/03	WEEK 2 01/13/03	WEEK 3 01/20/03	WEEK 4 01/27/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.5-8.5	SU					
TOTAL AGG CONC #1	4.7	µ g/l		0	0	0	0
TOTAL AGG CONC #2	2	µ g/l		0	0	0	0
TOTAL AGG CONC #3	50	µ g/l		0	0	0	0
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	BDL	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	BDL	BDL	BDL
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	BDL	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	BDL	BDL	BDL	BDL
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		BDL	BDL	BDL	BDL
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	0.0	0.0	0.0	0.0

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
FEBRUARY 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 02/03/03	WEEK 2 02/10/03	WEEK 3 02/17/03	WEEK 4 02/25/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.5-8.5	SU					
TOTAL AGG CONC #1	4.7	µ g/l		0	0	0	0
TOTAL AGG CONC #2	2	µ g/l		0			0
TOTAL AGG CONC #3	50	µ g/l		0			0
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	BDL	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	BDL	BDL	BDL
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	BDL	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	BDL	BDL	BDL	BDL
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	BDL	1.8	1.3	BDL
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		BDL	BDL	BDL	BDL
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	0.0	1.8	1.3	0.0

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
MARCH 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 03/03/03	WEEK 2 03/10/03	WEEK 3 03/17/03	WEEK 4 03/24/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.5-8.5	su					
TOTAL AGG CONC #1	4.7	µ g/l		0	0	0	0
TOTAL AGG CONC #2	2	µ g/l					
TOTAL AGG CONC #3	50	µ g/l					
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	BDL	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	BDL	BDL	BDL
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	BDL	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	BDL	BDL	BDL	BDL
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	6.5	9.7	8.9	6.8
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		BDL	BDL	BDL	BDL
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	6.5	9.7	8.9	6.8

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
APRIL 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 04/07/03	WEEK 2 04/14/03	WEEK 3 04/21/03	WEEK 4 04/28/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.5-8.5	SU					
TOTAL AGG CONC #1	4.7	µ g/l		0	0	0	0
TOTAL AGG CONC #2	2	µ g/l		0	0	0	
TOTAL AGG CONC #3	50	µ g/l		0	0	0	
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	BDL	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	BDL	BDL	BDL
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	BDL	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	BDL	BDL	BDL	BDL
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	BDL	BDL	BDL	1.7
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		BDL	BDL	BDL	BDL
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	0.0	0.0	0.0	1.7

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
MAY 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 05/05/03	WEEK 2 05/12/03	WEEK 3 05/19/03	WEEK 4 05/26/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.5-8.5	SU					
TOTAL AGG CONC #1	4.7	µ g/l		0	0	0	0
TOTAL AGG CONC #2	2	µ g/l		0	0	0	0
TOTAL AGG CONC #3	50	µ g/l		0	0	0	0
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	8.2	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	1.1	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	BDL	BDL	BDL
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	BDL	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	2.5	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	6.4	BDL	BDL	BDL
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	14.4	8.1	6.0	BDL
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		BDL	BDL	BDL	BDL
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	32.6	8.1	6.0	0.0

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
JUNE 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 06/03/03	WEEK 2 06/09/03	WEEK 3 06/16/03	WEEK 4 06/23/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.5-8.5	SU					
TOTAL AGG CONC #1	4.7	µ g/l		0	0	0	0
TOTAL AGG CONC #2	2	µ g/l		0	0	0	0
TOTAL AGG CONC #3	50	µ g/l		0	0	0	0
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	BDL	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	BDL	BDL	BDL
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	BDL	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	BDL	BDL	BDL	BDL
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	BDL	1.7	BDL	BDL
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		BDL	BDL	BDL	BDL
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	0.0	1.7	0.0	0.0

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
JULY 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 07/07/03	WEEK 2 07/14/03	WEEK 3 07/21/03	WEEK 4 07/29/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.5-8.5	su					
TOTAL AGG CONC #1	4.7	µ g/l		0	3	0	0
TOTAL AGG CONC #2	2	µ g/l		0	0	0	0
TOTAL AGG CONC #3	50	µ g/l		0	0	0	0
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	BDL	2.7	1.9	1.9
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	4.0	4.0	BDL	20.8
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	4.2	BDL	2.7
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	2.7	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	19.3	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	6.1	10.4	BDL	12.5
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	19.3	23.9	8.8	15.9
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		BDL	BDL	BDL	BDL
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	29.4	69.9	10.7	53.8

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
AUGUST 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 08/04/03	WEEK 2 08/11/03	WEEK 3 08/18/03	WEEK 4 08/25/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.5-8.5	SU					
TOTAL AGG CONC #1	4.7	µ g/l		3	0	0	0
TOTAL AGG CONC #2	2	µ g/l		0	0	0	0
TOTAL AGG CONC #3	50	µ g/l		0	0	0	0
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL		BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL		BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL		BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL		BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL		BDL
TOLUENE	5	µ g/l	1.2	3.5	1.4		1.5
BENZENE	0.7	µ g/l	0.7	BDL	BDL		BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL		BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL		BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL		BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	26.8	10.8		4.3
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL		BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL		BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL		BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	4.2	BDL		BDL
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL		BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL		BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL		BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	2.7	BDL		BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL		BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL		BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL		BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL		BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL		BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL		BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL		BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL		BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL		BDL
TRICHLOROETHENE	10	µ g/l	1.7	22.6	7.2		5.7
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	38.7	7.4		14.8
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		BDL	BDL		BDL
o-XYLENE	5	µ g/l	1.3	BDL	BDL		BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL		BDL
TOTAL VOCs	100	µ g/l	0.0	101.2	26.8	0.0	26.3

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
SEPTEMBER 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 09/02/03	WEEK 2 09/08/03	WEEK 3 09/15/03	WEEK 4 09/22/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.50-8.50	SU	NA	7.29	7.15	6.91	6.73
TOTAL AGG CONC #1	4.7	µ g/l	NA	1.1	0.0	0.0	0.0
TOTAL AGG CONC #2	2	µ g/l	NA	0.0	0.0	0.0	0.0
TOTAL AGG CONC #3	50	µ g/l	NA	0.0	0.0	0.0	0.0
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	2.3	2.3	2.5	2.6
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	12.3	26.8	26.0	26.8
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	1.9	5.5	5.4	6.6
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	1.1	BDL	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	11.1	18.1	18.6	21.3
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	18.0	33.8	24.5	28.4
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		NA	NA	NA	NA
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	46.7	86.5	77.0	85.7

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
OCTOBER 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 10/06/03	WEEK 2 10/13/03	WEEK 3 10/20/03	WEEK 4 10/28/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.50-8.50	SU	NA	6.80	5.89	6.99	6.88
TOTAL AGG CONC #1	4.7	µ g/l	NA	0.0	0.0	0.0	0.0
TOTAL AGG CONC #2	2	µ g/l	NA	0.0	0.0	0.0	0.0
TOTAL AGG CONC #3	50	µ g/l	NA	0.0	0.0	0.0	0.0
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	BDL	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	BDL	BDL	BDL
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	BDL	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	BDL	BDL	BDL	BDL
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l	NA	NA	NA	NA	NA
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	0.0	0.0	0.0	0.0

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
NOVEMBER 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMP'T MDL	WEEK 1 11/03/03	WEEK 2 11/10/03	WEEK 3 11/17/03	WEEK 4 11/24/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.50-8.50	SU	NA	6.75	6.72	6.77	
TOTAL AGG CONC #1	4.7	µ g/l	NA	0.0	0.0	0.0	
TOTAL AGG CONC #2	2	µ g/l	NA	0.0	0.0	0.0	
TOTAL AGG CONC #3	50	µ g/l	NA	0.0	0.0	0.0	
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	
TOLUENE	5	µ g/l	1.2	BDL	BDL	BDL	
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	
TETRACHLOROETHENE	2.2	µ g/l	1.2	BDL	BDL	BDL	
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	BDL	BDL	
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	BDL	BDL	
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	
TRICHLOROETHENE	10	µ g/l	1.7	BDL	BDL	BDL	
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	BDL	BDL	BDL	
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l	NA	NA	NA	NA	
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	
TOTAL VOCs	100	µ g/l	0.0	0.0	0.0	0.0	

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

**NASSAU COUNTY MITCHEL FIELD REMEDIAL ACTION
MONTHLY EFFLUENT MONITORING REPORT**

**OUTFALL 001G
DECEMBER 2003**

EFFLUENT PARAMETER	DISCHARGE LIMITATIONS	UNITS	COMPT MDL	WEEK 1 12/01/03	WEEK 2 12/08/03	WEEK 3 12/15/03	WEEK 4 12/22/03
FLOW, DAILY MAX	MONITOR	GPD	NA				
pH	6.50-8.50	SU	NA	6.87	7.04	6.88	7.05
TOTAL AGG CONC #1	4.7	µ g/l	NA	0.0	0.0	0.0	0.0
TOTAL AGG CONC #2	2	µ g/l	NA	0.0	0.0	0.0	0.0
TOTAL AGG CONC #3	50	µ g/l	NA	0.0	0.0	0.0	0.0
DICHLOROBROMOMETHANE	50	µ g/l	0.9	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
BROMOFORM	50	µ g/l	0.7	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	50	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROFORM	0.2	µ g/l	1.1	BDL	BDL	BDL	BDL
TOLUENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
BENZENE	0.7	µ g/l	0.7	BDL	BDL	BDL	BDL
CHLOROBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
ETHYLBENZENE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
METHYL CHLORIDE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
TETRACHLOROETHENE	2.2	µ g/l	1.2	BDL	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	5	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,1-DICHLOROETHENE	0.9	µ g/l	1.2	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	5	µ g/l	1.4	BDL	BDL	BDL	BDL
1,1,2-TRICHLOROETHANE	0.5	µ g/l	0.9	BDL	BDL	BDL	BDL
1,1,2,2 TETRACHLOROETHANE	0.3	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	1	µ g/l	0.8	BDL	BDL	BDL	BDL
1,2 DICHLOROBENZENE	4.7	µ g/l	0.9	BDL	BDL	BDL	BDL
1,2 DICHLOROPROPANE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,2(TRANS)-DICHLOROETHENE	2	µ g/l	1.1	BDL	BDL	BDL	BDL
1,3 DICHLOROBENZENE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
1,4 DICHLOROBENZENE	4.7	µ g/l	1.0	BDL	BDL	BDL	BDL
TRANS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
CIS 1,3 DICHLOROPROPENE	2	µ g/l	0.9	BDL	BDL	BDL	BDL
m,p-XYLENE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
BROMOMETHANE	5	µ g/l	2.4	BDL	BDL	BDL	BDL
VINYL CHLORIDE	5	µ g/l	1.1	BDL	BDL	BDL	BDL
TRICHLOROETHENE	10	µ g/l	1.7	BDL	BDL	BDL	BDL
1,2(CIS)-DICHLOROETHENE	5	µ g/l	1.0	BDL	BDL	BDL	BDL
1,1,2 TRICHLORO 1,2,2 TRIFLUOROETHANE	5	µ g/l		NA	NA	NA	NA
o-XYLENE	5	µ g/l	1.3	BDL	BDL	BDL	BDL
CHLOROETHANE	5	µ g/l	1.6	BDL	BDL	BDL	BDL
TOTAL VOCs	100	µ g/l	0.0	0.0	0.0	0.0	0.0

AGG CONC #1 = SUM OF 1,2 DICHLOROBENZENE & 1,4 DICHLOROBENZENE

AGG CONC #2 = SUM

AGG CONC #3 = SUM

APPENDIX D
GROUNDWATER MONITORING REQUIREMENTS
2003

Appendix D

GROUNDWATER MONITORING REQUIREMENTS

1.0 Semi-Annual Groundwater Monitoring Well Sampling and Testing Procedures

1.1 Sampling Equipment:

- Grundfos Redi-flo Variable Performance Pump installed in well.
- BMI/MP1 - 115V Converter with a motor lead extension cable.
- Generator or power source that provides 115 volts
- Solinst water level meter
- Discharge hose stored in the port opening of the well cap
- Discharge hose stand
- Stop watch and a bucket with a known volume.
- Disposable latex or vinyl sampling gloves.
- Cooler with ice packs.
- Sample containers with labels.
- Field book and pen.

1.2 Sampling Procedures:

- Open the well cover, unscrew and remove the discharge hose from the port opening. Confirm the well number on the metal tag or label.
- Take the depth to water reading through the port opening. Measure from the top edge of the well cover. Use well records to obtain the total depth of the well and calculate the fluid volume in the casing.
- Start the generator and allow it to idle until it runs smoothly. Connect the converter to power source.
- Connect the converter to the well cover receptacle using the motor lead extension cable. Connect the discharge hose to the well cover and position it in the desired direction of flow using the discharge hose stand.
- Select RF2M with the mode selection knob on the converter. The frequency display should read 0.0 (zero). Set the VFD speed dial to the midpoint (12 O'clock position) or approximately 220 Hz.
- Start the pump by moving the start/stop switch to the start position.

- Adjust the flow rate by turning the speed dial until the desired performance is attained. (48 Hz for minimum pumping to 400 Hz for maximum pumping)
- Use a stopwatch and a bucket of known volume to measure the rate of discharge in gallons per minute.
- Calculate the minimum pumping time by multiplying the fluid volume in the casing by three to obtain the volume to be purged and dividing by the flow rate. While purging continues measure the flow rate several times to insure the discharge rate is stable. All pertinent information must be recorded in the field book.
- Once the required volume is purged, label the sample containers. Decrease the flow rate to an appropriate sampling flow. Put on disposal latex or vinyl sampling gloves and fill the containers as per laboratory requirements. Place the samples in a cooler with ice packs.
- To stop the pump move the start/stop switch on the converter box to stop. Unplug all connections and then stop the generator. Return the discharge hose to the port, recap the connections and lock the well cover in place.

1.3 Semi-Annual Analytical Tests and Methodologies

All laboratory analyses to monitor the groundwater conditions for the Purex remediation project were conducted at the Nassau County Department of Public Works, Special Projects Laboratory located at Cedar Creek Waste Water Treatment Facility in Wantagh, New York (NCDPW-Lab). The NCDPW-Lab is a New York State Department of Health, Environmental Laboratory Approval Program (ELAP) certified laboratory for all of the analytical tests performed for the monitoring program.

Analysis of collected groundwater samples for the groundwater monitoring program included:

- VOCs (EPA 601/602); detailed list of parameters found in Table 1
- Semi-VOCs (625); detailed list of parameters found in Table 1
- Metals (EPA 200.7, 206.2, 239.2)
- Field parameters (pH, conductivity and temperature)
- Water quality parameters (alkalinity, biochemical oxygen demand [BOD], chemical oxygen demand [COD], hardness, nitrite, nitrate, phosphorus, sodium, total kjeldahl nitrogen [TKN], ammonia sulfate, chlorides, total organic carbon [TOC], total dissolved solids [TDS], and total suspended solids [TSS]).

1.4 Semi-Annual Hydraulic Control Monitoring

In addition to the recovery of volatile organic contamination within the Purex plume, an equally important factor is the hydraulic containment of the site's plume. In order to monitor the hydraulic containment of the Purex plume, the measurements of water levels are necessary to establish the groundwater flow direction(s) and gradient(s). From this information, the remediation's recovery well system can be monitored to confirm the effectiveness of the hydraulic containment under various conditions and to adjust and modify the recovery well system pumping to maintain hydraulic plume containment until remediation termination criteria are met.

Water levels were measured using a steel tape and chalk or with an electronic water level meter. All water level measurements are referenced to msl, as an elevation in feet (ft). The water level elevations are plotted on a site base map, according to depth. Contour lines, indicating areas of equal elevation are then drawn, from which groundwater flow direction(s) and gradient(s) can be established.

Table 1
Volatile Organic Compound Analysis
(EPA Method 524)
List Of Analytes

Dichlorodifluoromethane	1,2-Dibromoethane
Chloromethane	Chlorobenzene
Vinyl Chloride	1,1,1,2-Tetrachloroethane
Bromomethane	Ethyl Benzene
Chloroethane	m,p-Xylene
Trichlorofluoromethane	o-Xylene
1,1-Dichloroethene	Styrene
Methylene Chloride	Isopropylbenzene
t-1,2-Dichloroethene	Bromoform
1,1-Dichloroethane	1,1,2,2-Tetrachloroethane
2,2-Dichloropropane	1,2,3-Trichloropropane
c-1,2-Dichloroethene	n-Propylbenzene
Chloroform	Bromobenzene
Bromochloromethane	1,3,5-Trimethylbenzene
1,1,1-Trichloroethane	2-Chlorotoluene
1,1-Dichloropropene	4-Chlorotoluene
Carbon Tetrachloride	t-Butylbenzene
1,2-Dichloroethane	1,2,4-Trimethylbenzene
Benzene	sec-Butylbenzene
Trichloroethene	p-Isopropyltoluene
1,2-Dichloropropane	1,3-Dichlorobenzene
Bromodichloromethane	1,4-Dichlorobenzene
Dibromomethane	n-Butylbenzene
c-1,3-Dichloropropene	1,2-Dichlorobenzene
Toluene	1,2-Dibromo-3-Chloropropane
t-1,3-Dichloropropene	1,2,4-Trichlorobenzene
1,1,2-Trichloroethane	Hexachlorobutadiene
1,3-Dichloropropane	Naphthalene
Tetrachloroethene	1,2,3-Trichlorobenzene
Dibromochloromethane	Methyl tertiary-Butyl-Ether (MTBE)
Acrylonitrile	Pentachloroethane
Allyl Chloride	Propionitrile
Butyl Chloride	Tetrahydrofuran
Carbon Disulfide	Trans-1,4-Dichloro-2-Butene
Chloroacetonitrile	2 - Nitropropane
Ethyl Ether	Acetone
Ethyl Methacrylate	1,1-dichloro-2-propanone
Hexachloroethane	2-Butanone
Methacrylonitrile	2-Hexanone
Methyl Acrylate	4-Methyl-2-Pentanone
Methyl Methacrylate	Nitrobenzene

Table 2
Semi-Volatile Organic Compound Analysis
(EPA Method 525)
List of Analytes

4--Chloro-3-methylphenol	Benzo(s) pyrene
2-Chlorophenol	Bis (2-chloroethoxy) methane
2,4-Dichlorophenol	Bis (2-chloroethyl) ether
2,4-Dimethylphenol	Bis (2-ethylhexy) phthalate
4,6-Dinitro-2-methylphenol	Bis (2-chloroisopropyl) ether
2,4-Dinitrophenol	4-Bromophenyl (phenyl) ether
2-Nitrophenol	Butyl benzyl phthalate
4-Nitrophenol	2-Chloronaphthalene
Pentachlorophenol	4-Chlorophenyl (phenyl) ether
Phenol	Chrysene
2,4,6-Trichlorophenol	Dibenz (g,h) anthracene
Aldrin	Di-n-butyl phthalate
a-BHC	1,2-Dichlorobenzene
b-BHC	1,3-Dichlorobenzene
d-BHC	1,4-Dichlorobenzene
g-BHC	Diethyl phthalate
Chlordane	Dimethyl phthalate
4,4'-DDD	2,4-Dinitrotoluene
4,4'-DDE	2,6-Dinitrotoluene
4,4'-DDT	Di-n-octyl phthalate
Dieldrin	Fluoranthene
Endosulfan I	Fluorene
Endosulfan II	Hexachlorobenzene
Endosulfan sulfate	Hexachlorobutadiene
Endrin	Hexachlorocyclopentadiene
Endrin aldehyde	Hexachloroethane
Heptachlor	Indeno (1,2,3-cd) pyrene
Heptachlor epoxide(B)	Isophorone
Acenaphthene	Naphthalene
Acenaphthylene	Nitrobenzene
Anthracene	N-Nitrosodimethylamine
Azobenzene	N-Nitrosodi-n-propylamine
Benz(s) anthracene	N-Nitrosodiphenylamine
Benzo(b) fluoranthene	Phenanthrene
Benzo(k) fluoranthene	Pyrene
Benzo (g,h,i) perylene	1,2,4-Trichlorobenzene