Enclosure

Hanford Site Solid Waste Landfill
Annual Monitoring Report

Third Quarter Calendar Year 2003 through
Second Quarter Calendar Year 2004
(July 2003 through June 2004)

Consisting of 15 pages,
including this cover page.

This report summarizes results of leachate, groundwater, and soil gas monitoring performed at the Hanford Solid Waste Landfill during the period of July 2003 through June 2004. The Hanford Solid Waste Landfill stopped receiving waste in 1996 and is in interim closure status.

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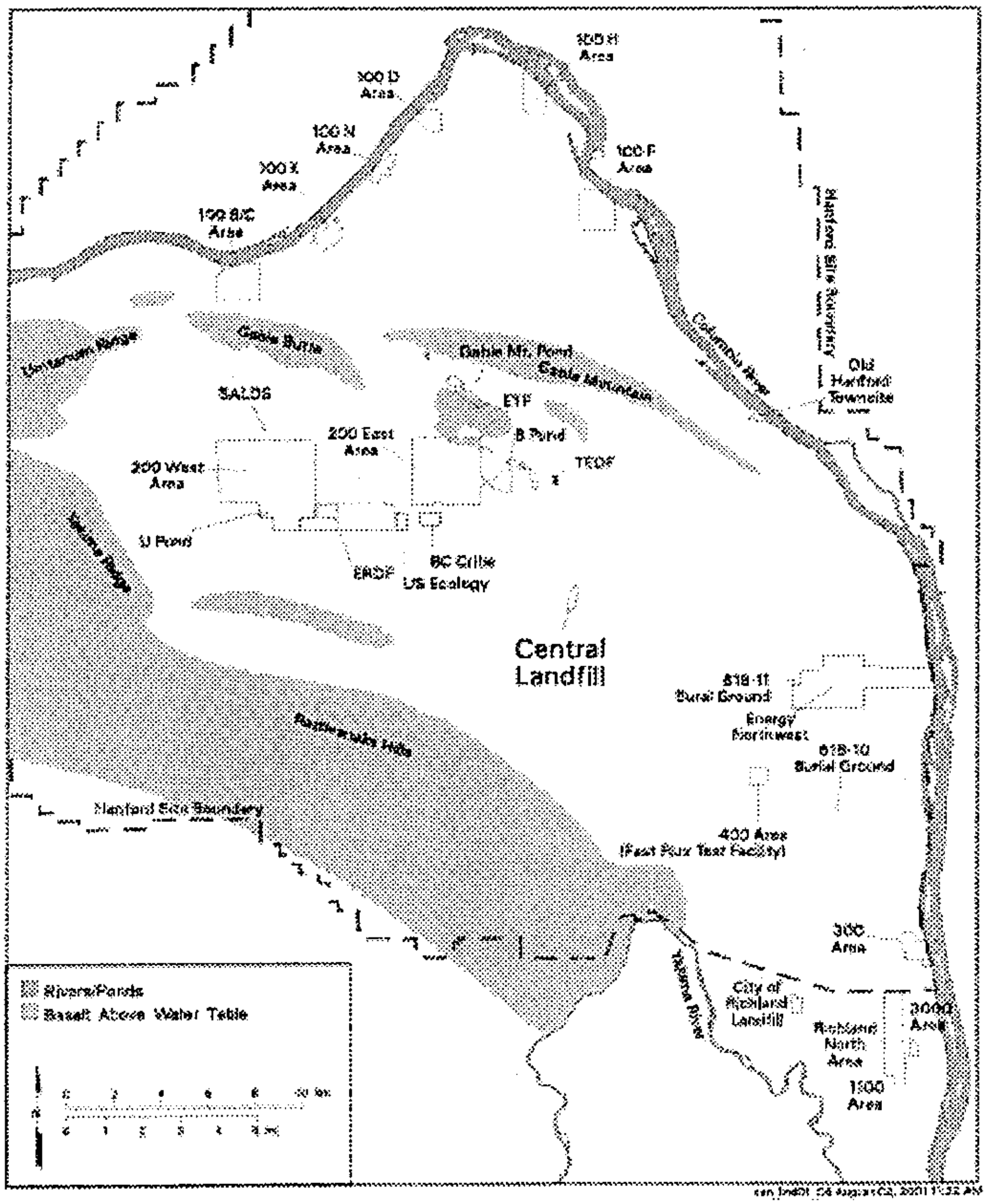
1.0 Introduction

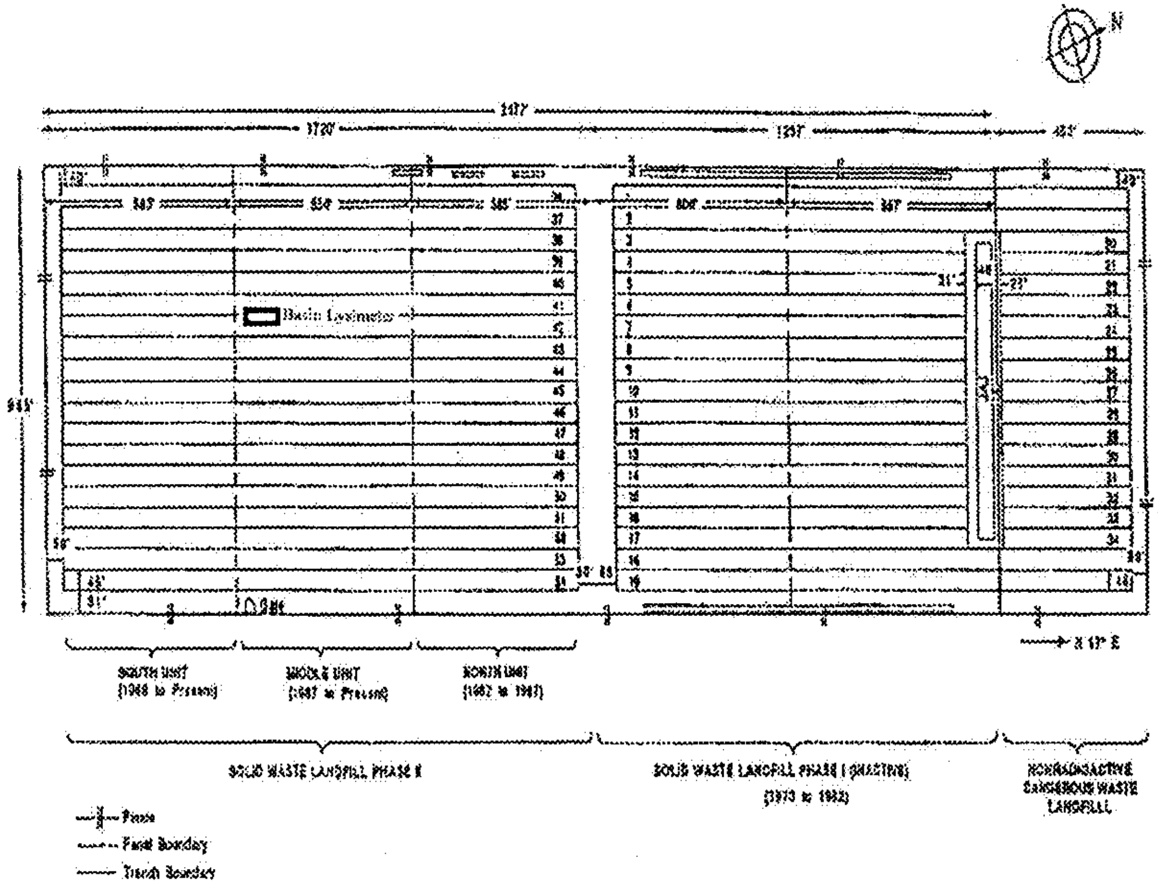
The Hanford Solid Waste Landfill (SWL) covers approximately 27 hectares (66 acres) and began operations in 1973. Figure 1 shows location of the SWL (Central Landfill) in relation to the Hanford Site.

Figure 1
Hanford Site Map



The SWL is divided into five units, each consisting of a series of parallel trenches (Figure 2). The two oldest units comprise Phase I. Phase II is comprised of three units: north, middle, and south. The SWL stopped receiving waste in 1996, and an intermediate cover was placed over all disposal trenches. Current plans call for the placement of an engineered final cover to minimize infiltration and leachate generation.

Figure 2
Location of Basin Lysimeter



Monitoring systems at the landfill have been established and provide data for evaluating changes that could indicate increased risks to human health and the environment. Current monitoring includes leachate, groundwater, and soil gas. The following sections provide information for monitoring performed from July 2003 through June 2004.

2.0 Leachate Monitoring

One of the double trenches in the landfill is provided with a liner that allows for collection of leachate in a basin lysimeter. Leachate is generated as precipitation percolates through the refuse. Figure 2 shows the location of the basin lysimeter in relation to other landfill trenches. The collected leachate is disposed through a permitted wastewater system.

Leachate monitoring provides an indication of what contaminants may be reaching the groundwater from unlined disposal cells. However, it is important to note that leachate is only collected under two of more than 90 buried trenches, and is not necessarily representative of total leachate generation throughout the landfill. Contaminants potentially leaching from trenches throughout the SWL represent a 23-year disposal period, dating back to 1973, before many of the regulations putting restrictions on land disposal were enacted. In contrast, the leachate being collected is from one of the newer disposal trenches. There are also varying amounts of vegetation growing over the intermediate cover, which has an effect on the volume of leachate generation. The older trenches have a thick vegetation cover, while some of the newer trenches are still essentially bare.

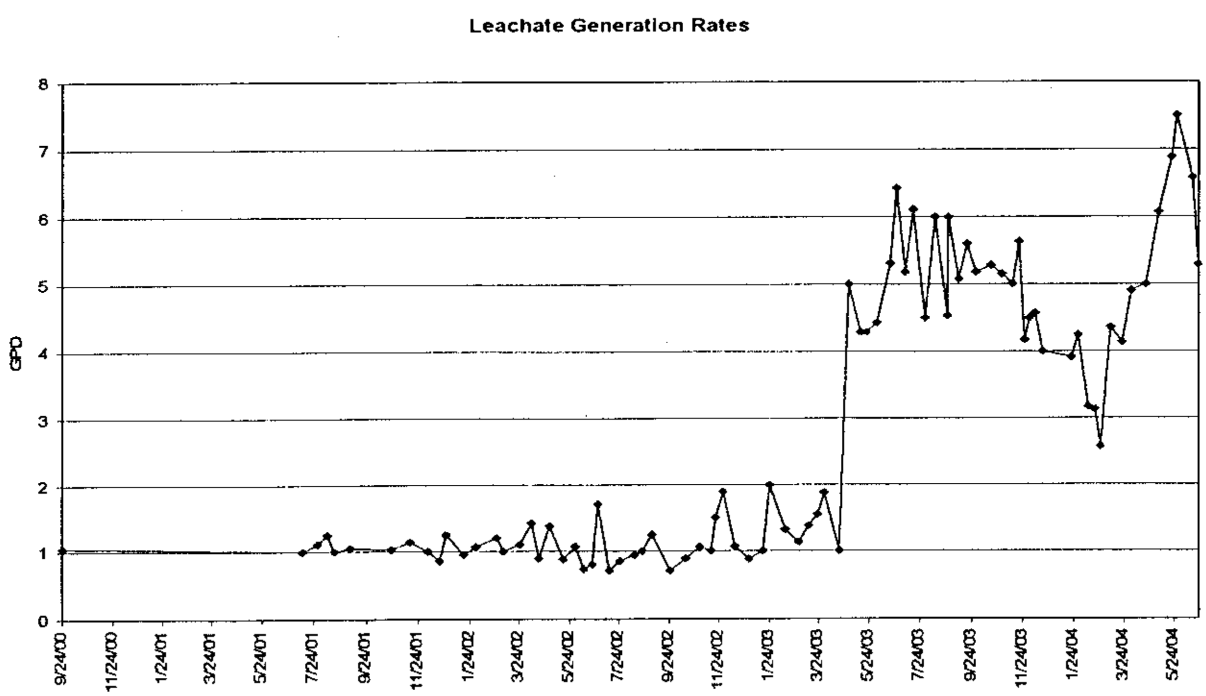
2.1 Leachate Generation

Leachate is removed from the underground lysimeter collection tank every 10 to 14 days. During the period of July 2003 through June 2004, a total of 1,788 gallons of leachate was generated, for a daily average for the year of 4.9 gallons. This is about a 168% increase in leachate generation over the previous year, when the daily average was only 1.83 gallons. This increase is mainly attributed to above average rainfall recorded at Hanford this past winter. For each of the past two years, the Hanford Meteorological Station recorded about 5 inches of rain during the December through February period – more than 90% greater than the three-month winter average of 2.61 inches dating back to 1946. Leachate generation continues to be high due to above-normal precipitation. Table 1 provides leachate volumes by month for the reporting period. A chart of generation rates over the past four years is provided in Figure 3.

Table 1
Leachate Generation Volumes

Month	Volume (gallons)	Average Rate (gallons/day)
July 2003	175	5.65
August 2003	146	4.71
September 2003	174	5.80
October 2003	162	5.23
November 2003	130	4.33
December 2003	95	3.06
January 2004	167	5.39
February 2004	81	2.79
March 2004	106	3.42
April 2004	144	4.80
May 2004	246	7.94
June 2004	162	5.40

Figure 3



2.2 Leachate Results

Table 2 shows results of several key sample parameters for the leachate. Only the indicator parameters for groundwater monitoring listed in WAC 173-304-490 are monitored on a quarterly basis. Due to an inadvertent personnel error, samples were only collected for three of the quarters covered by this report. In addition to the key sample parameters reported in Table 2, once per year the leachate is tested for a complete range of metals and organics. Laboratory report 20041054 issued July 22, 2004, provides the results of the annual testing. The values identified are similar to previous results and did not identify any areas of concern and so are not provided in this report.

As can be seen from Table 2, some of the indicator parameters and some organic constituents and metals continue to be above WAC 173-200 Groundwater Quality Criteria (GWQC) and/or Maximum Contaminant Levels (MCL) for public water supplies established in WAC 246-290. However, the point of compliance for contamination is the groundwater underlying the perimeter of the SWL boundary. The fact that these contaminants are above compliance levels in the leachate does not necessarily mean that they will be present in the same concentrations in the groundwater once they reach the point of compliance. Groundwater monitoring results are reported in Section 3.0.

Table 2
Leachate Monitoring Results—Key Constituents.

Parameter	Results by Quarter				GWQC*	MCL**
	3rd 2003	4th 2003	1st 2004	2nd 2004		
pH	7.10	6.89	NT	7.23	6.5-8.5	NA
Conductivity (uS/cm)	1950	2.11	NT	2.01	NA	700
Sulfate (mg/L)	9.24	6.33	NT	2.74	250	250
Chloride (mg/L)	265	266	NT	248	250	250
Fluoride (mg/L)	0.468	<0.115	NT	0.163	4	4
Total Dissolved Solids (mg/L)	NT	NT	NT	1.560	500	NA
Arsenic (ug/L)	NT	NT	NT	24.7	0.05	NA
Barium (ug/L)	NT	NT	NT	528	1000	2000
Manganese (ug/L)	1550	1700	NT	1110	50	50
Nickel (ug/L)	NT	NT	NT	157	NA	100
Cadmium (ug/L)	NT	NT	NT	<0.100	10	5
Copper (ug/L)	NT	NT	NT	2.05	1000	NA
Selenium ug/L)	NT	NT	NT	3.47	10	50
Zinc (ug/L)	<6.00	<52	NT	947	5000	5000
Iron (ug/L)	626	14000	NT	60.0	300	300
1,4-Dioxane (ug/L)	NT	NT	NT	77.0	7	NA
1,4-Dichlorobenzene (ug/L)	NT	NT	NT	17.0	4	NA
Methylene Chloride (ug/L)	NT	NT	NT	<1.00	5	NA
Tetrachloroethene (ug/L)	NT	NT	NT	<1.00	0.8	5

*Groundwater Quality Criteria from WAC 173-200
**Maximum Contamination Levels from WAC 246-290
NT = Not Tested
NA = Not Applicable

3.0 Groundwater Monitoring

The existing SWL groundwater-monitoring network consists of two up-gradient wells on the west side of the SWL and eight down-gradient wells along the east and south sides of the SWL. See Figure 6 for location of SWL groundwater monitoring wells. These wells are monitored quarterly as part of the overall Hanford Site groundwater-monitoring project. During the first quarter of this reporting period, the groundwater elevation dropped below the screened interval of well 699-25-34C. Consequently, only nine wells were monitored. During the next quarter, well 699-24-34C went dry so only eight wells were monitored. That well subsequently recovered to allow sampling in the next two quarters. At this time there are no plans to deepen or replace 699-25-34C because there are seven other down-gradient wells remaining in the network. The results of groundwater sampling are evaluated each quarter and statistical procedures are applied to determine if there are any significant increases in any of the constituents sampled over established background threshold values and/or the GWQC or MCL.

A complete list of constituents sampled in the groundwater over the past four quarters is provided in Table 3 below.

Table 3
Groundwater Monitoring Constituents.

1,1,1-Trichloroethane	Cadmium	M+P-Xylene	Temperature
1,1,2-Trichloroethane	Calcium	Magnesium	Tetrachloroethene
1,1-Dichloroethane	Carbon Disulfide	Manganese	Tetrahydrofuran
1,2-Dichloroethane	Carbon Tetrachloride	Methylene Chloride	Tolulene
1,4-Dichlorobenzene	Chemical Oxygen Demand	Nickel	Total Organic Carbon
1,4-Dioxane	Chloride	Nitrogen in Nitrate	Total Organic Halides
1-Butanol	Chloroform	Nitrogen as Nitrite	Total Xylenes
2-Butanone	Chromium	Nitrogen in Ammonia	Trans-1,2-Dichloroethylene
4-Methyl-2-Pentanone	Cis-1,2-Dichloroethylene	o-Xylene	Trichloroethene
Acetone	Cobalt	pH Measurement	Turbidity
Aluminum	Coliform Bacteria	Potassium	Vanadium
Antimony	Copper	Silver	Vinyl Chloride
Arsenic	Ethylbenzene	Sodium	Zinc
Barium	Ethyl Cyanide	Specific Conductivity	Gross alpha
Benzene	Fluoride	Strontium (elemental)	Gross beta
Beryllium	Iron	Sulfate	

3.1 Background Threshold Value Exceedances

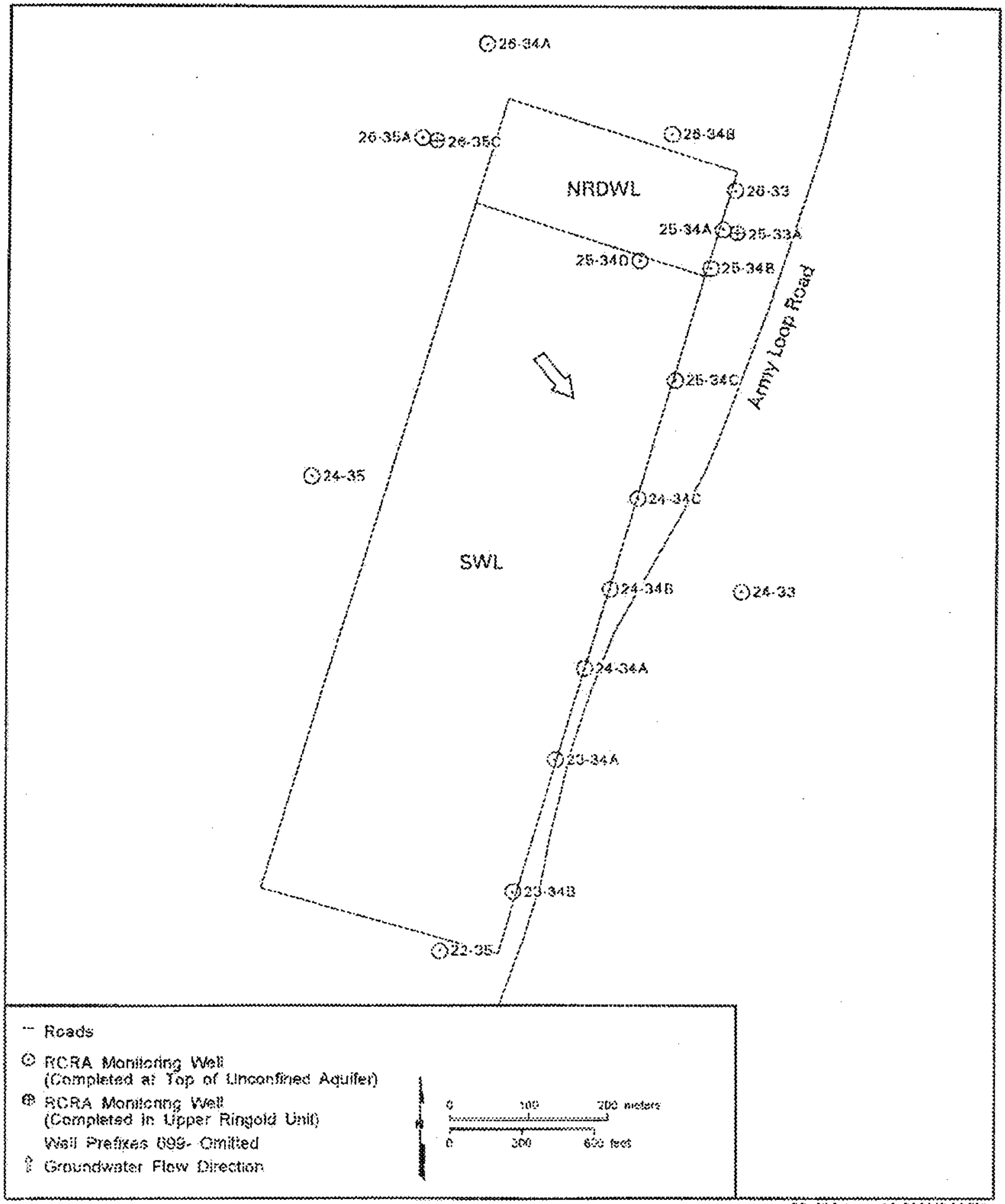
Sample results for monitoring wells for the Solid Waste Landfill are evaluated against several background threshold values for several parameters. Table 4 summarizes the exceedances during the four quarters of sampling included in this report.

Table 4
Background Threshold Value (BTV) Exceedances

Parameter and BTV	Maximum Previous Yr	July – Sept 2003	Oct – Dec 2003	Jan – Mar 2004	Apr – June 2004
Chemical Oxygen Demand 10,000 ug/L	NA	699-23-34A 17,000 ug/L 699-23-34B 15,000 ug/L 699-24-34C 11,000 ug/L			699-24-34B 16,000 ug/L
Coliform Bacteria 3.7 colonies per 100 ml	699-23-34B 72,400 colonies per 100 ml (Likely a laboratory error)	699-23-34B 517 colonies per 100 ml	699-23-34A 18.3 colonies per 100 ml 699-24-35 129 colonies per 100 ml	699-23-34A 4.1 colonies per 100 ml	
pH 6.68 – 7.84	699-23-34A 6.58 (lowest value)	699-23-34A 6.59 699-23-34B 6.67	699-23-34A 6.59	699-23-34A 6.65	699-23-34A 6.66
Specific Conductance 583 uS/cm	699-22-35 853 uS/cm	All downgradient and one upgradient. Maximum 699-22-35 822uS/cm	All downgradient and one upgradient. Maximum 699-22-35 827uS/cm	All downgradient and one upgradient. Maximum 699-22-35 829uS/cm	All downgradient and one upgradient. Maximum 699-22-35 849uS/cm
Sulfate 47,200 ug/L	699-25-34C 88,900 ug/L	699-23-34B 50,700 ug/L 699-22-35 49,500 ug/L 699-23-34A 48,800 ug/L	699-23-34B 48,100 ug/L 699-22-35 47,400 ug/L 699-23-34A 48,800 ug/L	699-23-34B 47,400 ug/L 699-22-35 47,400 ug/L 699-23-34A 49,200 ug/L	Five of 7 downgradient and one upgradient. Maximum 699-23-34A 40,300 ug/L
Total Organic Carbon 1090 ug/L	699-23-34A 7,700 ug/L	Exceeded in 2 upgradient and one downgradient 3,900 to 8,700 ug/L			
Temperature 20.7 deg C	NA				699-24-33 21.8 deg C

The elevated levels of chemical oxygen demand in wells near the Solid Waste Landfill are sporadic and not surprising due to the known disposal of sewage at the landfill. Specific conductance continues a slight upward trend since 1994. Values for other background threshold parameters remain relatively steady.

Figure 4
Location of Groundwater Monitoring Wells



3.2 Groundwater Quality Criteria and Drinking Water Maximum Contaminant Level Exceedances

WAC 173-200 Groundwater Quality Criteria (GWQC) exceedances were observed for tetrachloroethene (TCE) and for filtered arsenic during the reporting period. The concentration of aluminum exceeded the Washington Drinking Water Maximum Contaminant Level (MCL) and specific conductance exceeded the Federal Drinking Water MCL. Table 5 provides a summary.

Table 5
GWQC and Drinking Water MCL Exceedances

Parameter and Limit	Maximum Previous Yr	July – Sept 2003	Oct – Dec 2003	Jan – Mar 2004	Apr – June 2004
TCE 0.8 ug/L (GWQC)	699-24-34B 2.1 ug/L	Downgradient wells all exceed limit. Maximum 699-24-34B 699-24-33 2.1 ug/L	Downgradient wells all exceed limit. Maximum 699-24-34B 699-24-33 1.9 ug/L	Five downgradient and one upgradient exceed limit. Maximum 699-24-34B 699-24-33 1.4 ug/L	Six downgradient wells. Maximum 699-24-34B 1.5 ug/L
Filtered Arsenic 0.05 ug/L	699-24-33 3.4 ug/L	All wells exceed limit. Maximum 699-26-35A 3.4 ug/L	All wells exceed limit. Maximum 699-24-34A 2.9 ug/L	2 upgradient and 4 downgradient exceed limit. Maximum 699-26-35A 3.3 ug/L	2 upgradient and 2 downgradient exceed limit. Maximum 699-22-35 3.3 ug/L
Specific Conductance 700 uS/cm		All downgradient wells exceed. Maximum 699-22-35 822uS/cm	All downgradient wells exceed. Maximum 699-22-35 827uS/cm	All downgradient wells exceed. Maximum 699-22-35 829uS/cm	All downgradient wells exceed. Maximum 699-22-35 849uS/cm
Aluminum 50 ug/L	NA	699-23-34C 113 ug/L	No exceedances	No exceedances	Eight of nine wells tested exceed.

While tetrachloroethene exceeds Groundwater Quality Criteria in downgradient wells, the concentration has been steadily decreasing since 1990. The occurrence of arsenic in groundwater at the SWL is most likely from upgradient sources and is typical of Hanford Site background values. Specific conductance continues a slight upward trend since 1994. It is believed that the aluminum results are not reliable because the laboratory reporting limit for aluminum was 95.8 ug/L even though the machine detection limit was 20.3 ug/L. (Eight other wells within the SWL network had reported results of 95.8 ug/L during the quarter indicating non-detect. Historically, values this large or larger were sometimes considered as non-detects and at other times were shown as detected.)

According to information provided in the Hanford Site Groundwater Monitoring Report for 2002 (PNNL-14187), the most likely cause of the fairly widespread low-level chlorinated hydrocarbon contamination in the groundwater underlying the SWL is the dissolution of vadose zone vapors into groundwater. However, the source of these vapors is uncertain. The most probably source is chlorinated hydrocarbons dissolved in liquid sewage waste that was discharged to SWL trenches until 1987.

3.3 Groundwater Hydrology

The direction and flow of groundwater beneath the SWL is difficult to determine from water table maps because of the extremely low hydraulic gradients. The highest water level was 122.297 meters (above sea level) and the lowest was 122.219 meters, a difference of only 0.078 meters. However, flow direction can be inferred from the movement of the major contamination plumes (tritium, iodine-129, and nitrate). Flow direction interpreted from these plumes indicates a southeast direction. The groundwater flow rate was estimated in the Hanford Site Groundwater Monitoring Report for Fiscal Year 2002 (PNNL-14187) to be in the range of 0.026 to 0.23 meters per day, based on measurements of the hydraulic gradient from water table maps and current understanding of the local hydraulic conductivity and effective porosity.

According to information provided by PNNL, water levels at SWL wells have been dropping approximately 0.2 meters per year due to the decrease in waste water discharges in the 200 East Area. During this reporting period, downgradient monitoring well 699-25-34C was not able to be sampled because the water table had dropped below the screened interval of the well casing. A second well went "dry" during the October – December 2003 quarter but subsequently recovered to allow sampling in the subsequent quarters. At this time there are no plans to deepen or replace the well because ther are seven other down-gradient wells remaining in the network.

3.4 Chlorinated Organics in Target Wells

Based on past monitoring of the 10 wells in the SWL groundwater monitoring program, six primary contaminants have been identified in the groundwater below the SWL for inclusion in this report: 1) 1,1-Dichloroethane, 2) 1,1,1-Trichloroethane, 3) Chloroform, 4) Carbon Tetrachloride, 5) Tetrachloroethene, and 6) Trichloroethene. These chlorinated hydrocarbons are detected in both up gradient and down gradient wells, although concentrations for most constituents are slightly higher in the down gradient wells. The three wells that historically have shown the highest levels of contamination are included in this report. These three wells are referred to as the target wells, and are all down gradient wells. Well 699-22-35 is located outside the south perimeter fence of the SWL; well 699-23-34A is located outside the east perimeter fence near the southeast corner; and well 699-24-34C is located outside the east perimeter fence near the mid-point of the landfill. Table 6 shows the results of analyses for the six primary contaminants in the three target down gradient wells, in addition to comparison data from one of the upgradient wells (699-24-35).

Table 6

Results of Groundwater Monitoring
in Three Target Wells Compared with One Upgradient Well.*

699-22-35				699-23-34A				699-24-34C				699-24-35 (upgradient)			
2003		2004		2003		2004		2003		2004		2003		2004	
3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd
1,1,1 Trichloroethane (GWQC of 200 ug/L)**															
2.1	2.2j	0.17un	2.3	1.7	1.9j	0.17un	1.9	1	1.2	1.1	1.2	1.2	1.4j	1.6	1.5
1,1 Dichloroethane (GWQC of 1 ug/L)**															
0.76j	0.77j	0.61j	0.68j	0.78j	0.73j	0.62j	0.64j	0.36j	0.31j	0.36j	0.1u	0.23j	0.25j	0.29j	0.1u
Carbon Tetrachloride (GWQC of 0.3 ug/L)**															
0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u	0.15u
Chloroform (GWQC of 7 ug/L)**															
0.17j	0.19j	0.16j	0.21j	0.13j	0.19j	0.21j	0.26j	0.072j	0.082j	0.072j	0.07u	0.07u	0.07u	0.07u	0.07u
Tetrachloroethene (GWQC of 0.8 ug/L)**															
0.98j	1.1j	0.71j	0.78j	1.5	1.7j	1.1	1.2	1.5	1.4	1.2	1.3	0.77j	0.78j	1	0.7j
Trichloroethene (GWQC of 3 ug/L)**															
0.5j	0.54j	0.48j	0.5j	0.59j	0.61j	0.55j	0.56j	0.64j	0.64j	0.76j	0.69j	0.31j	0.38j	0.45j	0.35j

*Units in ug/L
**Groundwater Quality Criteria from WAC 173-200
j means the analyte was detected but result near the analytical detection limit and analytical error is potentially very large by comparison.
u means non-detect or below the method detection level.
n means one of the blanks had detectable quantities of the analyte

The historical trend for each of the six contaminants in the three target wells is downward. With the exception of tetrachloroethene, the levels for all of the chlorinated organic constituents shown in these figures are currently below WAC 173-300 GWQC. Tetrachloroethene levels, as indicated previously, are slightly above GWQC thresholds in some of the wells, with an apparent downward trend. Of note is that Tetrachloroethene levels are about the same in the upgradient well as in the downgradient wells.

4.0 Soil Gas Monitoring

The soil gas-monitoring network consists of eight shallow monitoring stations located around the perimeter of the SWL. Each monitoring station consists of two dedicated soil-gas probes driven to depths of approximately 9 and 15 feet, respectively. The gas is monitored quarterly to determine concentrations of oxygen, carbon dioxide, and methane. The wells are also monitored for several key volatile organic constituents, such as dichloromethane, 1,1-dichloroethane, chloroform, 1,1,1-trichloroethane, carbon tetrachloride, trichloroethene, 1,1,2-trichloroethane, and tetrachloroethene. See Figure 5 for location of soil gas monitoring wells.

Complete soil gas monitoring results are provided in Table 7. Results are consistent with results of previous monitoring. Contaminants of concern were not detected or were at or near detection limits. Methane concentrations remain low and other parameters are normal. Oxygen monitoring was only completed during the first two quarters due to equipment problems and will probably be discontinued since no adverse trend has been noted in eight years of monitoring.

Figure 5
Soil Gas Monitoring Wells

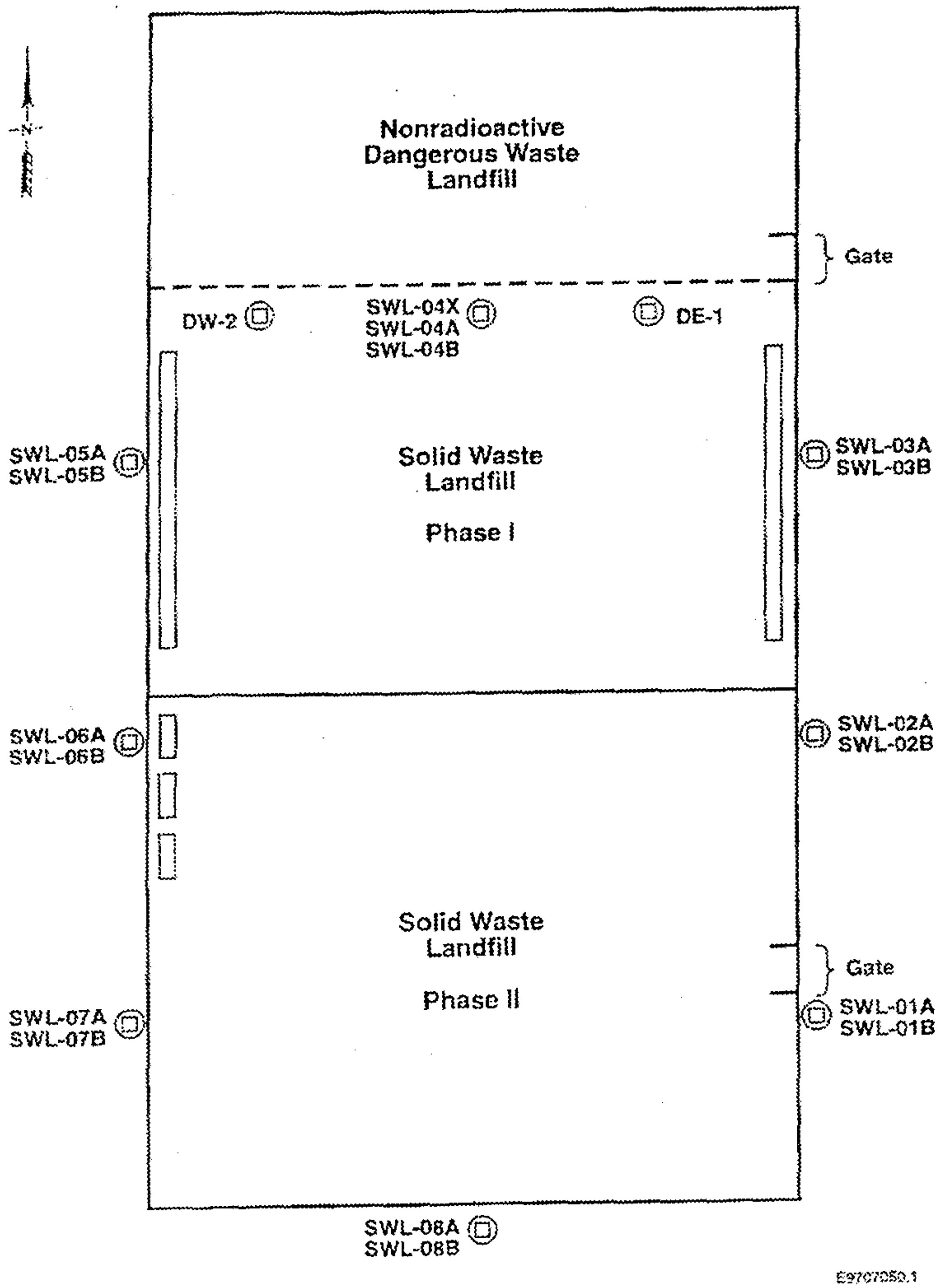


Table 7
SWL Soil Gas Monitoring Results
(July 2003 through June 2004)

Constituents / Sample Month	Wells																		
	01-A	01-B	02-A	02-B	03-A	03-B	04-A	04-B	04-X	DE-1	DW-2	05-A	05-B	06-A	06-B	07-A	07-B	08-A	08-B
Methane (CH_4) (percent)																			
Sept. 2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
January 2004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.1	0.1	0.0	0.2	0.1	0.1	0.1
April 2004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June 2004	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon dioxide (CO_2) (percent)																			
Sept. 2003	0.2	0.3	0.1	0.7	0.2	0.5	2.5	3.1	0.8	2.3	0.5	0.0	0.6	0.2	0.7	0.0	0.0	0.0	0.0
January 2004	0.0	0.4	0.0	0.7	0.0	0.3	2.2	2.6	0.8	2.0	0.2	0.0	0.3	0.2	0.5	0.0	0.2	0.3	1.3
April 2004	0.0	0.2	0.0	0.5	0.0	0.1	1.7	1.9	0.4	1.5	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.4	1.1
June 2004	0.0	0.0	0.0	0.3	0.0	0.0	1.6	1.6	1.9	0.6	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.2	0.8
Oxygen (O_2) (percent)																			
Sept 2003	18.4	18.1	18.5	17.7	18.5	18.3	16.9	16.5	18.1	17.1	18.3	`8.7	18.4	18.6	18.1	18.6	NA	18.0	17.5
January 2004	18.9	18.6	18.9	18.4	18.9	18.7	17.2	17.1	18.4	17.7	19.0	19.3	19.0	19.2	19.1	19.2	19.1	18.9	18.2
April 2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
June 2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane (parts per million – volume/volume)																			
Sept 2003	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
January 2004	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
April 2004	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
June 2004	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1-Dichloroethane, ,1-1 DCA(parts per million – volume/volume)																			
Sept 2003	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
January 2004	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
April 2004	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
June 2004	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chloroform (parts per million – volume/volume)																			
Sept 2003	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
January 2004	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
April 2004	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
June 2004	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1,1,1-Trichloroethane (parts per million – volume/volume)																			
Sept 2003	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
January 2004	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
April 2004	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
June 2004	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Carbon tetrachloride, (parts per million – volume/volume)																			
Sept 2003	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
January 2004	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
April 2004	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
June 2004	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18

Trichloroethene, (parts per million – volume/volume)																			
Sept 2003	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
January 2004	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
April 2004	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
June 2004	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
1,1,2-Trichloroethane, (parts per million – volume/volume)																			
Sept 2003	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
January 2004	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
April 2004	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
June 2004	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethene. (parts per million – volume/volume)																			
Sept 2003	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	0.091j	0.092j	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
January 2004	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	0.032j	0.057j	0.029j	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
April 2004	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	0.056j	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
June 2004	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31

NA - Not Analyzed
- value less than the reporting limit