

**SEMI-ANNUAL
GROUNDWATER MONITORING REPORT
ALLIED SIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA**

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GROUNDWATER MONITORING REPORT**

**ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA**

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TABLE OF CONTENTS

SECTION No.	TITLE	PAGE No.
1.	INTRODUCTION.....	1
1.1	BACKGROUND.....	1
1.2	QUARTERLY MONITORING PROGRAM.....	2
2.	SAMPLE METHODOLOGY.....	4
2.1	WATER LEVEL MEASUREMENTS.....	4
2.2	GROUNDWATER SAMPLING.....	4
3.	ANALYTICAL PROCEDURES.....	6
3.1	LABORATORY METHODS.....	6
3.2	DATA EVALUATION.....	6
4.	RESULTS.....	7
4.1	QUALITY CONTROL REVIEW.....	7
4.2	SHALLOW MONITORING WELLS.....	7
4.2.1	Volatile Organic Compounds.....	8
4.3	DEEP MONITORING WELLS.....	9
4.3.1	Volatile Organic Compounds.....	9
4.4	NAPHTHA RECOVERY WELLS.....	9
4.5	VOC RECOVERY WELLS.....	10

TABLE No.	TITLE	PAGE No.
TABLE 1:	GROUNDWATER ELEVATION SUMMARY, SEPTEMBER 1998.....	11
TABLE 2:	GROUNDWATER ELEVATION SUMMARY, DECEMBER 1998.....	13

FIGURE No.	TITLE	PAGE No.
FIGURE 1:	SITE LOCATION MAP.....	15
FIGURE 2:	MONITORING AND RECOVERY WELL NETWORK.....	16
FIGURE 3:	POTENTIOMETRIC SURFACE MAP, SHALLOW WELLS - SEPTEMBER 1998.....	17
FIGURE 4:	POTENTIOMETRIC SURFACE MAP, SHALLOW WELLS - DECEMBER 1998.....	18
FIGURE 5:	POTENTIOMETRIC SURFACE MAP, DEEP WELLS - DECEMBER 1998.....	19

TABLE OF CONTENTS

APPENDICES

APPENDIX A -	GROUNDWATER SAMPLING RECORDS
APPENDIX B -	ANALYTICAL RESULTS - DECEMBER 1998
APPENDIX C -	CURRENT AND HISTORIC ANALYTICAL DATA TABLES
APPENDIX D -	TRENDLINE PLOTS

1. INTRODUCTION

AlliedSignal Inc. (AlliedSignal) has retained Harding Lawson Associates (HLA) to assist with the quarterly groundwater monitoring program at the AlliedSignal Industrial Complex, 717 N. Bendix Drive, South Bend, Indiana (Figure 1). This report presents the results of the 3rd and 4th Quarter 1998 groundwater sampling events conducted by HLA.

1.1 BACKGROUND

Environmental assessment activities at the AlliedSignal facility date back to the 1970s. Investigations have indicated that two groundwater contaminant plumes exist beneath the facility. The two plumes are characterized as a naphtha plume in the area of Plant 6/16 and a dissolved volatile organic compound (VOC) plume in the area of Plant 1.

In 1978, a free-phase plume of naphtha and Stoddard solvent was discovered on the water table beneath the Plant 6/16 area (in the central portion of the facility). A naphtha recovery well was first installed at the Complex in 1978 for removal of naphtha free product from the top of the water table (well E3 on Figure 2). Four additional recovery wells were installed in 1982. Each of the five recovery wells consists of a pumping well and a product collection well. Two of the five naphtha recovery wells have been deactivated because free product is no longer present. The amount of product currently being recovered by the three operating wells is negligible, but operation of the system is beneficial because it maintains an inward gradient of groundwater flow at the site.

In 1988, a VOC recovery well system was installed on the north side of Plant 1 and Plant 9 just south of Bendix Drive and Bertrand Street. The recovery well system included 20 shallow and 1 deep VOC recovery wells, and was installed to inhibit off-site migration of impacted groundwater from the Plant 1/9 area.

Beginning in December 1993, certain shallow wells were taken off-line due to low yield of groundwater. The deep VOC recovery well was taken off-line due to the presence of gravel pack material in the well. In 1997, AlliedSignal modified the well configuration to provide a system that more effectively captures groundwater migrating from the Plant 1/9 area. Three new extraction wells (EW-1, EW-2 and EW-3) were installed and the existing system was abandoned in accordance with Indiana Administrative Code,

Title 310, Article 16 (see Figure 2). Select existing recovery wells (RW-3, RW-4, RW-7, RW-14, RW-16, and RW-17) were retained as groundwater level measurement locations.

A network of monitoring wells has also been installed at the facility to monitor the effectiveness of the recovery systems and the movement and quality of groundwater. In addition to the three VOC and three currently active naphtha recovery wells, the current monitoring network consists of 59 shallow wells, 4 intermediate wells screened in the deep portion of the shallow aquifer, and 12 deep groundwater monitoring wells screened in the deeper aquifer. Monitoring well locations are shown on Figure 2.

1.2 QUARTERLY MONITORING PROGRAM

Groundwater monitoring requirements are set forth in Discharge Permit SB004:4 issued by the Department of Public Works, City of South Bend, Indiana. Under the permit, AlliedSignal must report the analytical results of VOCs, total lead, total nickel, total chromium, total phenols and total cyanide for groundwater samples collected from all wells discharging into city sewers. Currently, 15 shallow VOC recovery wells, 1 deep VOC recovery well, and 3 naphtha recovery wells are included under the discharge permit. Changes in the recovery well network have resulted in 3 naphtha and 3 VOC recovery wells discharging to city sewers. These changes to the system were presented to and approved by the City of South Bend.

In addition to groundwater samples collected from the VOC and naphtha recovery wells, AlliedSignal collects groundwater samples from 32 groundwater monitoring wells to obtain information on groundwater quality across the site. As of 1st Quarter 1998, the monitoring program at the facility was modified as follows:

- Water levels are measured in all wells on a quarterly basis to demonstrate the effectiveness of the naphtha and VOC recovery systems.
- Sampling of the recovery wells is conducted on a quarterly basis to comply with the permit requirements. Discharge water is sampled quarterly for VOCs, and semi-annually for total lead, total chromium, total nickel, total phenols and total cyanide.
- Monitoring well groundwater samples are collected semi-annually for VOCs, and annually for dissolved lead, dissolved chromium, dissolved nickel, total phenols and total cyanide.
- Shallow monitoring wells MW-10, MW-11, MW-12 and MW-13 (installed between June 1997 and May 1998) have been incorporated into the monitoring program as of the 2nd Quarter 1998 sampling event.

- Shallow monitoring well 8-27 was abandoned in May 1998 due to a collapsed well screen.

Quality control (QC) samples are also collected during each sampling event. Duplicate samples are collected at a frequency of 10 percent. Duplicates are analyzed for the same parameters as the respective primary samples to assess the homogeneity of sampled media and the precision of the sampling and analytical protocols. Trip blank samples for VOC analysis are collected at a frequency of one per cooler of VOC samples. Analysis of trip blanks is used to confirm that sample contamination has not occurred during shipment. Equipment blanks are collected during the sampling program when non-dedicated sampling devices are used. Equipment blank results are used to assess whether cross-contamination has occurred between sampling locations due to the sampling device.

2. SAMPLE METHODOLOGY

Procedures for measuring water levels and collecting groundwater samples are described in this section.

2.1 WATER LEVEL MEASUREMENTS

The 3rd Quarter water level measurements were collected in September 1998. At that time, well 86-6 could not be located and well MW-10 was covered with construction material. Water levels were not measured at these two locations. The September measurements are listed on Table 1.

The 4th Quarter groundwater measurements were collected in December. These measurements are listed on Table 2. During the December sampling event, well 86-6 was damaged and standing water covered well MW-3, a flush-mount well. Water levels were not measured at these two locations.

After opening the well and allowing the water level to equilibrate, the depth to groundwater was measured at each location to the nearest 0.01 foot using an electronic water level indicator. After each measurement, the water level indicator was washed with a solution of LiquiNox and distilled water and rinsed with distilled water. Water level measurements were referenced to the top of the well casing.

Groundwater elevations were calculated by subtracting the depth-to-groundwater at each well from the top-of-well casing elevation. Groundwater elevations based upon the September and December 1998 events demonstrate the groundwater flow conditions when the 3 VOC and 3 naphtha recovery wells are fully operational.

2.2 GROUNDWATER SAMPLING

During the September 1998 (3rd Quarter) sampling event, groundwater discharge samples were collected from the naphtha and VOC recovery wells indicated on Table 1. During the December 1998 (3rd Quarter) sampling event, groundwater samples were collected from the 37 locations indicated on Table 2. Sampling locations in December included 31 monitoring wells on and adjacent to the site, the 3 active naphtha recovery wells and the 3 VOC recovery wells. Deep monitoring well 4D could not be sampled in December due to a faulty pump. Pump repair is scheduled during the March 1999 monitoring event.

Monitoring wells were purged of stagnant groundwater prior to sample collection. During purging, the pH, specific conductivity and temperature of the groundwater was measured in the field with a Horiba U10 Water Checker. Groundwater was purged from the monitoring wells until a minimum of three well volumes was evacuated and the pH, specific conductivity, and temperature were stabilized (within 10 percent between the final two readings). Once purging was completed, a groundwater sample was collected. Monitoring wells were purged and sampled with either dedicated bladder pumps, dedicated PVC bailers, disposable bailers, or a stainless-steel bailer. Non-dedicated equipment (i.e., the stainless-steel bailer) was washed with a solution of LiquiNox and distilled water and rinsed with distilled water before each use.

VOC and naphtha recovery wells were purged and sampled through existing spigots on discharge lines. In general, approximately 5 gallons of water were purged from each well prior to sampling.

In accordance with QC procedures, duplicate samples were collected at a frequency of 10 percent. Duplicate samples were collected from shallow monitoring well MW-2, naphtha recovery well RWB16 and deep monitoring well D5. The laboratory-prepared trip blank included with each cooler containing samples for VOC analysis were also analyzed for VOCs. An equipment rinsate blank was collected from the stainless-steel bailer. This sample was collected prior to sampling by pouring distilled water into the bailer and then transferring the distilled water to the appropriate sample containers.

Samples were placed in insulated coolers with sealed bags of ice and picked up by TriMatrix Laboratories, Inc. of Grand Rapids, Michigan. Chain-of-Custody (COC) documentation accompanied each set of samples and included the following information: date and time of sample collection, sample name, analysis method, and sampler's signature. Details of daily activities (including times, dates and methods of sample collection) were recorded in a site-specific field notebook. Details on the purging and sampling procedures were recorded on Groundwater Sample Record Sheets, included as Appendix A.

3. ANALYTICAL PROCEDURES

Analytical methods and QC procedures are discussed below.

3.1 LABORATORY METHODS

Groundwater samples collected from the naphtha and VOC recovery wells during the September 1998 (3rd Quarter) and December 1998 (4th Quarter) sampling events were analyzed for VOCs by U.S. Environmental Protection Agency (USEPA) Method 8260. Monitoring wells sampled during the December 1998 monitoring event were also analyzed for VOCs using Method 8260. Sampling of the recovery wells for total lead, total chromium, total nickel, total cyanide and total phenols was scheduled for December 1998; the samples will instead be collected in March 1999, a schedule change that has been approved the City of South Bend.

3.2 DATA EVALUATION

TriMatrix Laboratories conducted a systematic review of the data for compliance with the established QC criteria. An evaluation of data accuracy, precision, sensitivity and completeness was performed and presented in the analytical reports. Non-compliant data were qualified and a case narrative prepared to describe the corrective actions taken and the implications on data quality.

Laboratory results were then submitted to HLA in the form of laboratory data sheets and on computer disk. Data was electronically transferred from the computer disk into a database maintained by HLA. Upon transfer of the data, HLA reviewed each data package to evaluate the "usability" of the data. The data was evaluated based upon the following parameters: completeness of the data package, holding times, trip blanks, equipment rinsate blanks, duplicates and laboratory case narratives. Data were flagged with qualifiers as necessary to indicate its usability.

4. RESULTS

Analytical summary tables for the December 1998 sampling event are presented in Appendix B. The tables include a comparison of the analytical results to U.S. Environmental Protection Agency Primary Maximum Contaminant Levels (PMCLs). Data qualifiers are also shown on the tables. A description of the qualifiers is provided in a table at the beginning of Appendix B. Appendix C contains both the current and historic data showing only the constituents reported above the laboratory detection limit for each sampling location (including results for the September 1998 sampling event).

4.1 QUALITY CONTROL REVIEW

For the 3rd and 4th Quarter sampling events, no VOCs were detected in any of the trip blanks. The equipment rinsate blank collected from the stainless-steel bailer during the 4th Quarter event reported methylene chloride at 31 micrograms per liter (ug/L); however, the methylene chloride concentrations in groundwater samples collected with this bailer after decontamination were below the laboratory reporting limit. Methylene chloride is a common laboratory contaminant and was also detected in laboratory blanks. The detection of methylene chloride is likely attributable to sample cross-contamination in the laboratory.

As part of the quality control program, a duplicate sample was collected from well EW-2 in September 1998 and three duplicate samples were collected in December 1998 (at wells MW-2, RWB16 and D5). In all cases good correlation was observed between original and duplicate samples for all parameters analyzed, with the exception of 1,1-dichloroethene and 1,1,1-trichloroethane in sample MW-2 (and its duplicate). The variance in concentrations between the sample and its duplicate resulted in the two samples being flagged with a "J". The "J" flag indicates that the results should be considered estimated. Also, samples MW-2 and S9 reported methylene chloride concentrations that are attributed to possible laboratory contamination. These samples are also flagged with a "J", for estimated concentrations and a "B", which indicates possible blank contamination.

4.2 SHALLOW MONITORING WELLS

Figure 3 and Figure 4 are potentiometric surface maps of the water table aquifer based upon water level measurements collected in April and June 1998, respectively. The maps demonstrate shallow groundwater flow patterns based on monitoring wells screened in the shallow portion of the shallow aquifer. Four intermediate wells (7-50, 8D, D8 and I1) are included on the figures as shallow wells, but their

measurements are not used for the potentiometric maps because the wells are screened in the lower portion of the shallow aquifer.

Figure 3 reflects groundwater measurements made in September 1998 when the 3 VOC and 3 naphtha recovery wells were fully operational. As indicated on the figure, VOC recovery wells EW-1 and EW-2 provide containment of groundwater in the Plant 1 area. Recovery well EW-3 contains groundwater in the Plant 9 area. Shallow groundwater flow from the western and central portions of the site is generally to the east (toward the naphtha recovery wells). Northeast of Plant 1, shallow groundwater flow is generally to the north, toward Kennedy Park.

Figure 4 is a potentiometric map of the water table based upon water levels measured in December 1998 during the 4th Quarter sampling event. The six recovery wells were also operating in December, and the shallow groundwater flow pattern is similar to that of the September measurements.

4.2.1 Volatile Organic Compounds

Total VOC concentrations in shallow monitoring well samples ranged from non-detectable to 4,216 micrograms per liter ($\mu\text{g/l}$) at well MW-2. VOCs in groundwater samples from the shallow monitoring wells were highest in on-site wells. VOCs were non-detectable in groundwater from wells located along the downgradient boundary of the western two-thirds of the site (along West Westmoor Street, west of Bendix Drive). Consistent with previous sampling events, VOCs were detected in shallow wells located north and northeast of Plant 1.

Trendline plots for select shallow wells area provided in Appendix D. The plots are updated after each sampling event and provide information on VOC concentrations in groundwater samples collected from the monitoring well locations over time. Three shallow wells (86-10, 86-15, and S4A) were selected for trendline plotting to represent sampling points near the origin of the groundwater plume. Shallow monitoring wells S9, S24 and S27 were selected to assess the central portion of the groundwater plume, and wells S21, S22, and S25 were selected to represent sampling points along the downgradient boundary of the plume.

Five of the nine shallow well graphs indicate stable or decreasing concentrations of VOCs. A slight increase in trichloroethene (TCE) has been observed in on-site well 86-15 since the September 1997 sampling event. This well is located near the origin of the groundwater plume.

4.3 DEEP MONITORING WELLS

Figure 5 is a potentiometric surface map based on water levels measured in the 12 deep monitoring wells during the 4th Quarter sampling event. As indicated on the figure, the deep groundwater flow direction is northeasterly. It should be noted that the potentiometric map for the deeper portion of the aquifer includes groundwater level data from wells ranging in depth from 75 feet to over 200 feet deep. Considering the range in well depths, the potentiometric map for the deeper portion of the aquifer represents the general direction of groundwater flow but does not consider the potential for vertical gradients within the aquifer.

4.3.1 Volatile Organic Compounds

Four deep monitoring wells (D5, D7, 2D and 5D) were sampled during the 4th Quarter 1998 sampling event. Well 4D was scheduled for sampling but the pump would not produce water in sufficient quantities to collect a groundwater sample. VOCs were reported in samples from two of the four sampling locations (wells 2D and D7), with detected concentrations ranging from 23 µg/l to 25.8 µg/l. The detected concentrations were adjacent to Plant 1 and are consistent with previous sampling events. Samples collected from downgradient deep well 5D remain non-detectable for VOCs.

Trendline plots for deep wells 2D and 5D have been prepared using all available VOC analytical data from past sampling events. Well 2D is located within the deep VOC plume and well 5D is located at the leading edge of the plume. The plots, provided in Appendix D, indicate that cis-DCE increased slightly in well 2D since the June 1998 sampling event. All other volatile constituent concentrations in well 2D are stable or decreasing.

4.4 NAPHTHA RECOVERY WELLS

For the 3rd and 4th Quarter 1998 sampling events, VOC constituents detected in the naphtha recovery wells were generally consistent with previous sampling events. The slight increasing trend of benzene concentrations observed in groundwater samples from well RWB16 over the past four events is now decreasing.

4.5 VOC RECOVERY WELLS

Samples are collected from wells EW-1, EW-2 and EW-3 along the north side of Plant 1 and Plant 9 to evaluate the quality of groundwater extracted by the VOC recovery system. The VOC samples collected from these wells in December 1998 reported total VOC concentrations ranging from 171 $\mu\text{g/l}$ at well EW-3 to 560 $\mu\text{g/l}$ at well EW-1. In general, these results are relatively consistent with previous sampling events.

The increasing trend in TCE concentrations observed at well EW-1 in 1997 has become stable; the other constituents detected at this well location remain stable or are decreasing. Slight increases were observed in chemical concentrations at well EW-2 between the June and September 1998 sampling events, but these concentrations appear to have become stable or are decreasing based on the December 1998 results. Chemical concentrations in well EW-3 continue to remain stable.

**Table 1
Groundwater Elevation Summary
3rd Quarter Groundwater Monitoring - September 1998
AlliedSignal Industrial Complex - South Bend, Indiana**

Well No.	Well Depth (feet)	Measuring Point Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Locations Sampled	Sampling Method
Shallow Monitoring Wells:						
7-25	26.6	720.47	20.60	699.87		
86-2	28.3	714.98	17.99	696.99		
86-4	23.8	715.09	17.87	697.22		
86-5	30.1	715.04	17.93	697.11		
86-6	25.9	715.00	NM	NM		
86-7	27.2	714.15	16.10	698.05		
86-8	28.5	714.62	16.52	698.10		
86-9	26.8	715.25	17.20	698.05		
86-10	27.1	715.06	17.09	697.97		
86-11	27.0	715.14	17.20	697.94		
86-12	25.4	715.71	17.84	697.87		
86-13	28.8	714.75	16.89	697.86		
86-15	25.3	715.06	16.76	698.30		
86-19	28.1	714.33	16.22	698.11		
9-33	27.3	716.20	22.91	693.29		
MW-1	25.3	720.88	18.09	702.79		
MW-2	15.4	713.93	12.24	701.69		
MW-3	17.2	713.10	14.00	699.10		
MW-4	21.0	712.66	16.48	696.18		
MW-5	20.8	713.21	16.46	696.75		
MW-6 (a)	18.0	709.98	NM	NM		
MW-7	18.2	712.59	15.38	697.21		
MW-8 (a)	19.0	712.79	NM	NM		
MW-9	19.8	710.90	15.27	695.63		
MW-10	19.4	716.01	NM	NM		
MW-11 (a)	21.7	717.74	15.79	701.95		
MW-12	13.8	711.58	10.90	700.68		
MW-13	18.8	712.55	15.49	697.06		
OW-1	37.4	711.48	14.48	697.00		
OW-2	35.0	711.45	14.57	696.88		
S1	35.6	728.09	24.60	703.49		
S3	24.6	716.65	20.57	696.08		
S4A	31.6	711.37	14.43	696.94		
S5	33.0	712.83	13.66	699.17		
S6	32.4	716.91	19.92	696.99		
S8	22.6	714.65	18.16	696.49		
S9	21.1	714.17	17.72	696.45		
S12	30.0	721.45	19.84	701.61		
S14	20.2	711.86	16.00	695.86		
S15	22.0	714.37	19.19	695.18		
S16	21.5	716.18	18.62	697.56		
S17	24.8	716.97	18.98	697.99		
S18	32.4	715.41	16.32	699.09		
S19	36.4	723.38	19.86	703.52		
S20	18.8	709.97	15.15	694.82		
S21	23.4	711.33	15.79	695.54		
S22	26.0	709.33	14.92	694.41		
S23	28.2	710.24	18.49	691.75		
S24	21.4	713.03	16.35	698.68		
S25	26.8	710.60	15.62	694.98		
S26	26.9	714.50	17.76	696.74		
S27	27.9	715.40	19.14	696.26		
S28	23.5	714.48	16.59	697.89		

Depth to water measured from the top of well casing

Water elevations are referenced to Mean Sea Level

Locations and top-of-well casings for MW-1, MW-10, MW-11, MW-12, MW-13, 9-33, 3D, 4D, EW-1, EW-2, EW-3, RW-3, RW-4, RW-7, RW-14, RW-16, RW-17, OW-1, OW-2 and S4A were surveyed in June 1998.

Wells 8-27, 86-1 and D10 are abandoned.

(a) Wells MW-6, MW-8 and MW-11 not measured due to presence of free product

NM = Not Measured

Table 1
Groundwater Elevation Summary
3rd Quarter Groundwater Monitoring - September 1998
AlliedSignal Industrial Complex - South Bend, Indiana

Well No.	Well Depth (feet)	Measuring Point Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Locations Sampled	Sampling Method
Intermediate Monitoring Wells (50 - 75 feet)						
7-50	50.0	719.84	20.11	699.73		
8D	59.5	714.56	17.97	696.59		
D8	61.9	717.07	20.26	696.81		
I1	47.6	711.58	NM	NM		
Deep Monitoring Wells (75 - 210 feet)						
D3	133.1	714.45	19.00	695.45		
D4	118.6	717.85	21.08	696.77		
D5	186.8	712.07	15.42	696.65		
D7	78.4	713.83	16.63	697.20		
D9	96.9	717.00	17.45	699.55		
D12	147.1	710.35	21.65	688.70		
1D	208.6	714.17	16.37	697.80		
2D	188.3	715.36	18.19	697.17		
3D	196.9	712.91	17.59	695.32		
4D	192.7	711.68	21.87	689.81		
5D	192.2	712.01	23.01	689.00		
7D	95.1	714.85	18.36	696.49		
Recovery Wells						
Former VOC System:						
RW-3	30.7	710.93	13.83	697.10		
RW-4	24.4	709.81	12.65	697.16		
RW-7	21.6	710.73	13.74	696.99		
RW-14	28.8	712.63	14.89	697.74		
RW-16	22.1	712.51	15.02	697.49		
RW-17	28.8	712.78	15.63	697.15		
Naphtha System:						
E3	38.0	714.50	21.63	692.87	☐	Spigot
RWB6	38.0	715.80	19.51	696.29		
RWB16	45.0	715.30	18.65	696.65	☐ Duplicate	Spigot
RWB21	29.5	717.62	21.08	696.54		
RWB22	38.0	715.11	19.21	695.90	☐	Spigot
VOC System:						
EW-1	56.3	712.26	18.62	693.64	☐	Spigot
EW-2	43.2	711.58	15.99	695.59	☐	Spigot
EW-3	30.6	712.59	19.01	693.58	☐	Spigot

Depth to water measured from the top of well casing

Water elevations are referenced to Mean Sea Level

Locations and top-of-well casings for MW-1, MW-10, MW-11, MW-12, MW-13, 9-33, 3D, 4D, EW-1, EW-2, EW-3, RW-3, RW-4, RW-7, RW-14, RW-16, RW-17, OW-1, OW-2 and S4A were surveyed in June 1998.

Wells 8-27, 86-1 and D10 are abandoned.

(a) Wells MW-6, MW-8 and MW-11 not measured due to presence of free product

NM = Not Measured

Table 2
Groundwater Elevation Summary
4th Quarter Groundwater Monitoring - December 1998
AlliedSignal Industrial Complex - South Bend, Indiana

Well No.	Well Depth (feet)	Measuring Point Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Locations Sampled	Sampling Method
Shallow Monitoring Wells						
7-25	26.6	720.47	20.55	699.92	☐	Stainless -Steel Bailer
86-2	28.3	714.98	18.14	696.84		
86-4	23.8	715.09	18.04	697.05		
86-5	30.1	715.04	18.04	697.00		
86-6	25.9	715.00	NM	NM		
86-7	27.2	714.15	16.39	697.76		
86-8	28.5	714.62	16.81	697.81		
86-9	26.8	715.25	17.48	697.77		
86-10	27.1	715.06	17.44	697.62	☐	Dedicated PVC Bailer
86-11	27.0	715.14	17.61	697.53		
86-12	25.4	715.71	18.16	697.55		
86-13	28.8	714.75	17.10	697.65		
86-15	25.3	715.06	17.55	697.51	☐	Dedicated PVC Bailer
86-19	28.1	714.33	16.54	697.79		
9-33	27.3	716.20	19.04	697.16	☐	Stainless-Steel Bailer
MW-1	25.3	720.88	18.32	702.56		
MW-2	15.4	713.93	12.35	701.58	☐ Duplicate	Disposable Bailer
MW-3	17.2	713.10	NM	NM		
MW-4	21.0	712.66	16.21	696.45	☐	Disposable Bailer
MW-5	20.8	713.21	16.58	696.63	☐	Disposable Bailer
MW-6 (a)	18.0	709.98	NM	NM		
MW-7	18.2	712.59	15.54	697.05	☐	Disposable Bailer
MW-8 (a)	19.0	712.79	NM	NM		
MW-9	19.8	710.90	15.74	695.16	☐	Disposable Bailer
MW-10	19.4	716.01	13.53	702.48	☐	Disposable Bailer
MW-11 (a)	21.7	717.74	NM	NM		
MW-12	13.8	711.58	10.81	700.77	☐	Disposable Bailer
MW-13	18.8	712.55	15.50	697.05	☐	Disposable Bailer
OW-1	37.4	711.48	14.70	696.78		
OW-2	35.0	711.45	14.76	696.69		
S1	35.6	728.09	24.99	703.10		
S3	24.8	716.65	21.07	695.58	☐	Bladder Pump
S4A	31.6	711.37	14.67	696.70	☐	Bladder Pump
S5	33.0	712.83	14.21	698.62		
S6	32.4	716.91	20.04	696.87		
S8	22.6	714.65	19.37	695.28		
S9	21.1	714.17	18.06	696.11	☐	Disposable Bailer
S12	30.0	721.45	19.94	701.51		
S14	20.2	711.86	16.22	695.64		
S15	22.0	714.37	19.59	694.78	☐	Disposable Bailer
S16	21.5	716.18	19.23	696.95	☐	Dedicated PVC Bailer
S17	24.8	716.97	19.78	697.19	☐	Bladder Pump
S18	32.4	715.41	17.06	698.35		
S19	36.4	723.38	20.18	703.20		
S20	18.8	709.97	15.94	694.03	☐	Bladder Pump
S21	23.4	711.33	16.63	694.70	☐	Bladder Pump
S22	26.0	709.33	15.62	693.71	☐	Bladder Pump
S23	28.2	710.24	18.99	691.25	☐	Bladder Pump
S24	21.4	713.03	17.21	695.82	☐	Bladder Pump
S25	26.8	710.60	16.45	694.15	☐	Bladder Pump
S26	26.9	714.50	18.24	696.26		
S27	27.9	715.40	19.87	695.53	☐	Bladder Pump
S28	23.5	714.48	17.36	697.12		

Depth to water measured from the top of well casing

Water elevations are referenced to Mean Sea Level

Locations and top-of-well casings for MW-1, MW-10, MW-11, MW-12, MW-13, 9-33, 3D, 4D, EW-1, EW-2, EW-3, RW-3, RW-4, RW-7, RW-14, RW-16, RW-17, OW-1, OW-2 and S4A were surveyed in June 1998.

Wells 8-27, 86-1 and D10 are abandoned.

(a) Wells MW-6, MW-8 and MW-11 not measured due to presence of free product

NM = Not Measured

**Table 2
Groundwater Elevation Summary
4th Quarter Groundwater Monitoring - December 1998
AlliedSignal Industrial Complex - South Bend, Indiana**

Well No.	Well Depth (feet)	Measuring Point Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Locations Sampled	Sampling Method
Intermediate Monitoring Wells (50 - 75 feet)						
7-50	50.0	719.84	20.06	699.78	①	Dedicated PVC Bailor
8D	59.5	714.56	18.14	696.42	①	Bladder Pump
D8	61.9	717.07	20.61	696.46		
I1	47.6	711.58	19.93	691.65		
Deep Monitoring Wells (75 - 210 feet)						
D3	133.1	714.45	18.35	696.10		
D4	118.6	717.85	21.37	696.48		
D5	186.8	712.07	15.61	696.46	① Duplicate	Bladder Pump
D7	78.4	713.83	18.80	697.03	①	Bladder Pump
D9	96.9	717.00	17.97	699.03		
D12	147.1	710.35	20.41	689.94		
1D	208.6	714.17	16.78	697.39		
2D	188.3	715.36	18.47	696.89	①	Bladder Pump
3D	196.9	712.91	17.76	695.15		
4D	192.7	711.68	20.51	691.17		
5D	192.2	712.01	21.59	690.42	①	Bladder Pump
7D	95.1	714.85	18.47	696.38		
Recovery Wells						
Former VOC System:						
RW-3	30.7	710.93	14.74	696.19		
RW-4	24.4	709.81	12.67	697.14		
RW-7	21.6	710.73	14.13	696.60		
RW-14	28.8	712.63	15.81	696.82		
RW-16	22.1	712.51	15.84	696.67		
RW-17	28.8	712.78	16.36	696.42		
Naphtha System:						
E3	36.0	714.50	22.48	692.02	①	Spigot
RWB6	36.0	715.80	19.74	696.06		
RWB16	45.0	715.30	18.91	696.39	① Duplicate	Spigot
RWB21	29.5	717.62	21.08	696.54		
RWB22	36.0	715.11	19.67	695.44	①	Spigot
VOC System:						
EW-1	56.3	712.26	19.35	692.91	①	Spigot
EW-2	43.2	711.58	17.42	694.16	①	Spigot
EW-3	30.6	712.59	19.27	693.32	①	Spigot

Depth to water measured from the top of well casing

Water elevations are referenced to Mean Sea Level

Locations and top-of-well casings for MW-1, MW-10, MW-11, MW-12, MW-13, 9-33, 3D, 4D, EW-1, EW-2, EW-3, RW-3, RW-4, RW-7, RW-14, RW-16, RW-17, OW-1, OW-2 and S4A were surveyed in June 1998.

Wells 8-27, 86-1 and D10 are abandoned.

(a) Wells MW-6, MW-8 and MW-11 not measured due to presence of free product

NM = Not Measured

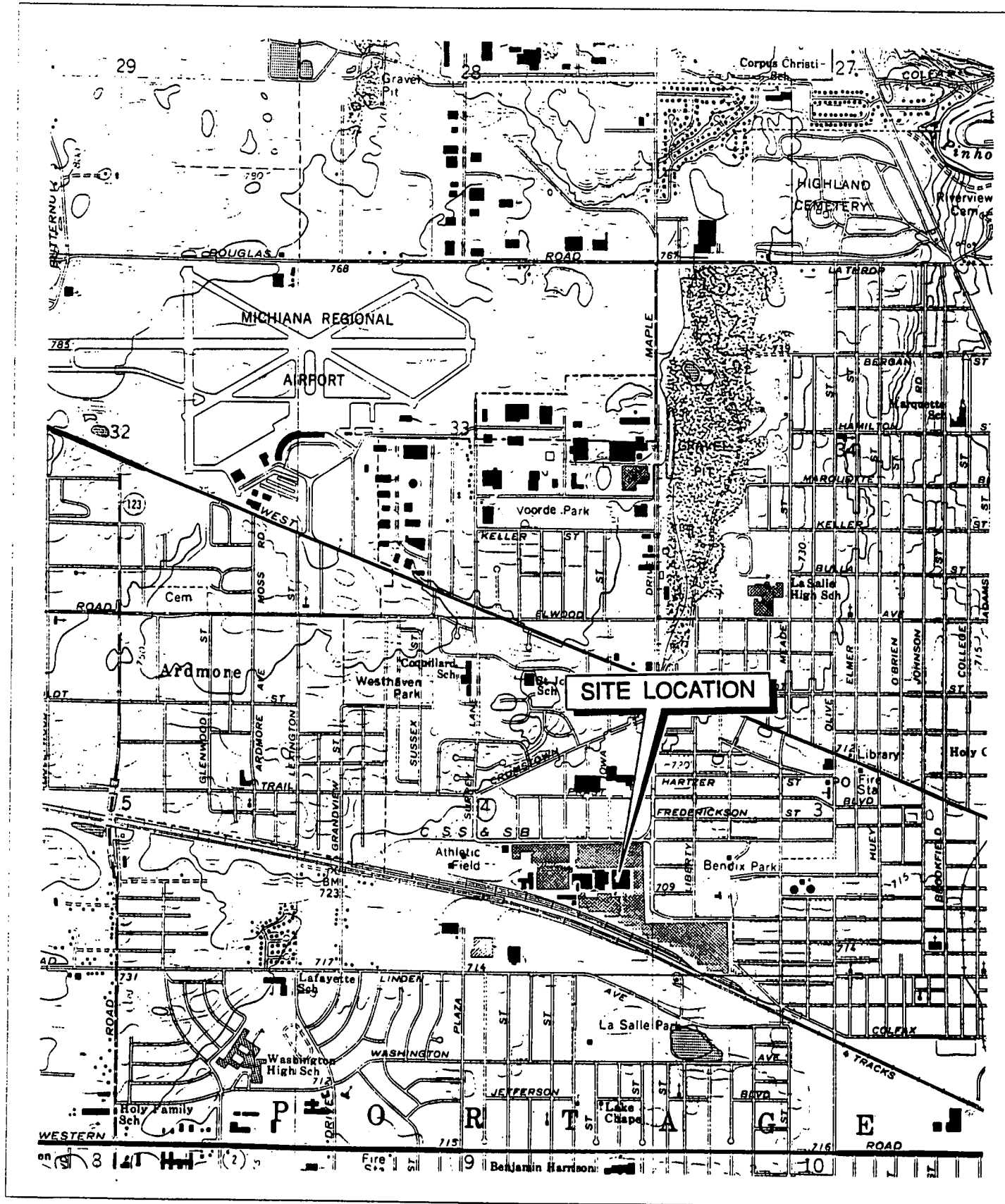
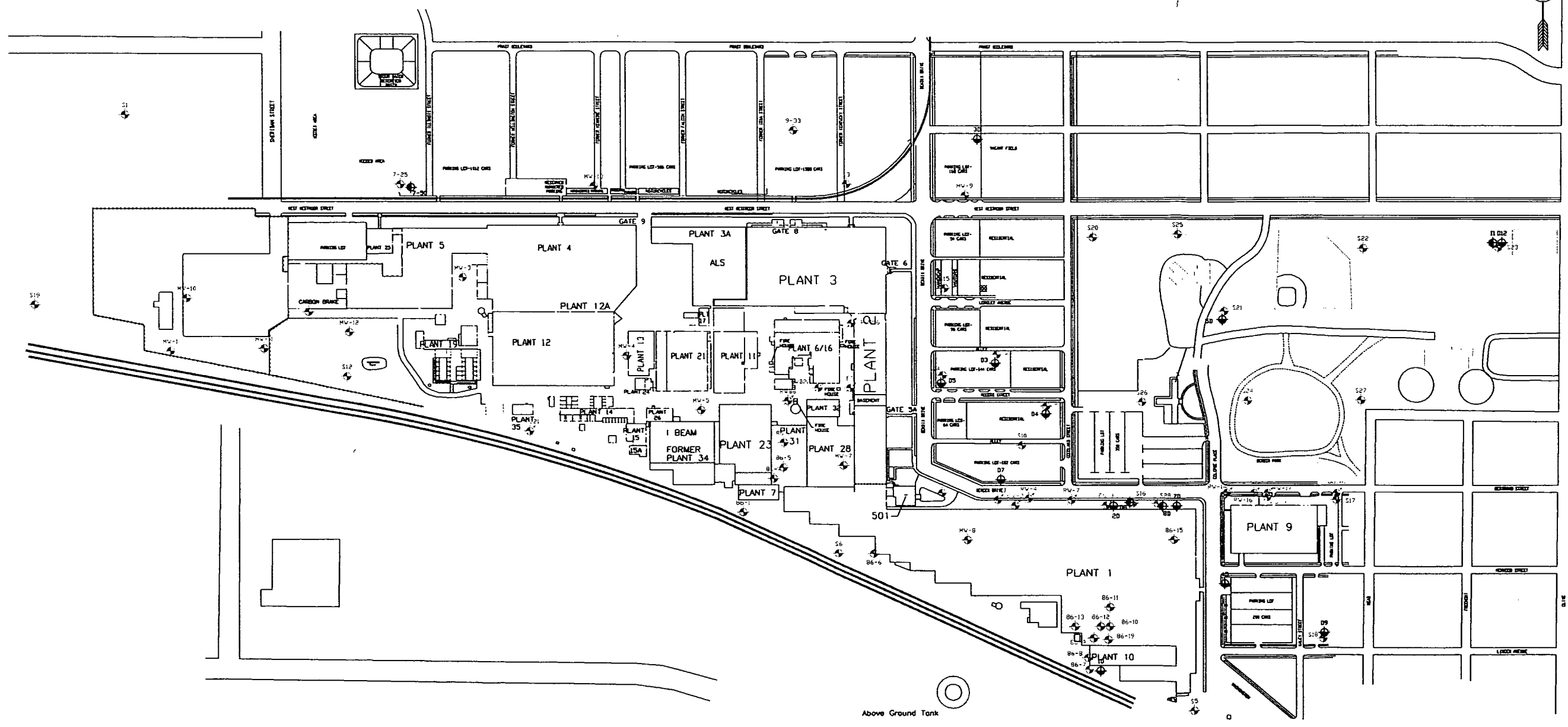


FIGURE 1
 SITE LOCATION MAP
 QUARTERLY GROUNDWATER MONITORING
 ALLIEDSIGNAL INDUSTRIAL COMPLEX
 SOUTH BEND, INDIANA

Harding Lawson Associates ES



Above Ground Tank

Legend

- Water Table Monitoring Well Location
- Intermediate Monitoring Well Location (50 to 100 feet deep)
- Deep Monitoring Well Location (100 to 210 feet deep)
- Former Recovery Well Location
- Recovery Well Location

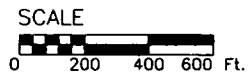
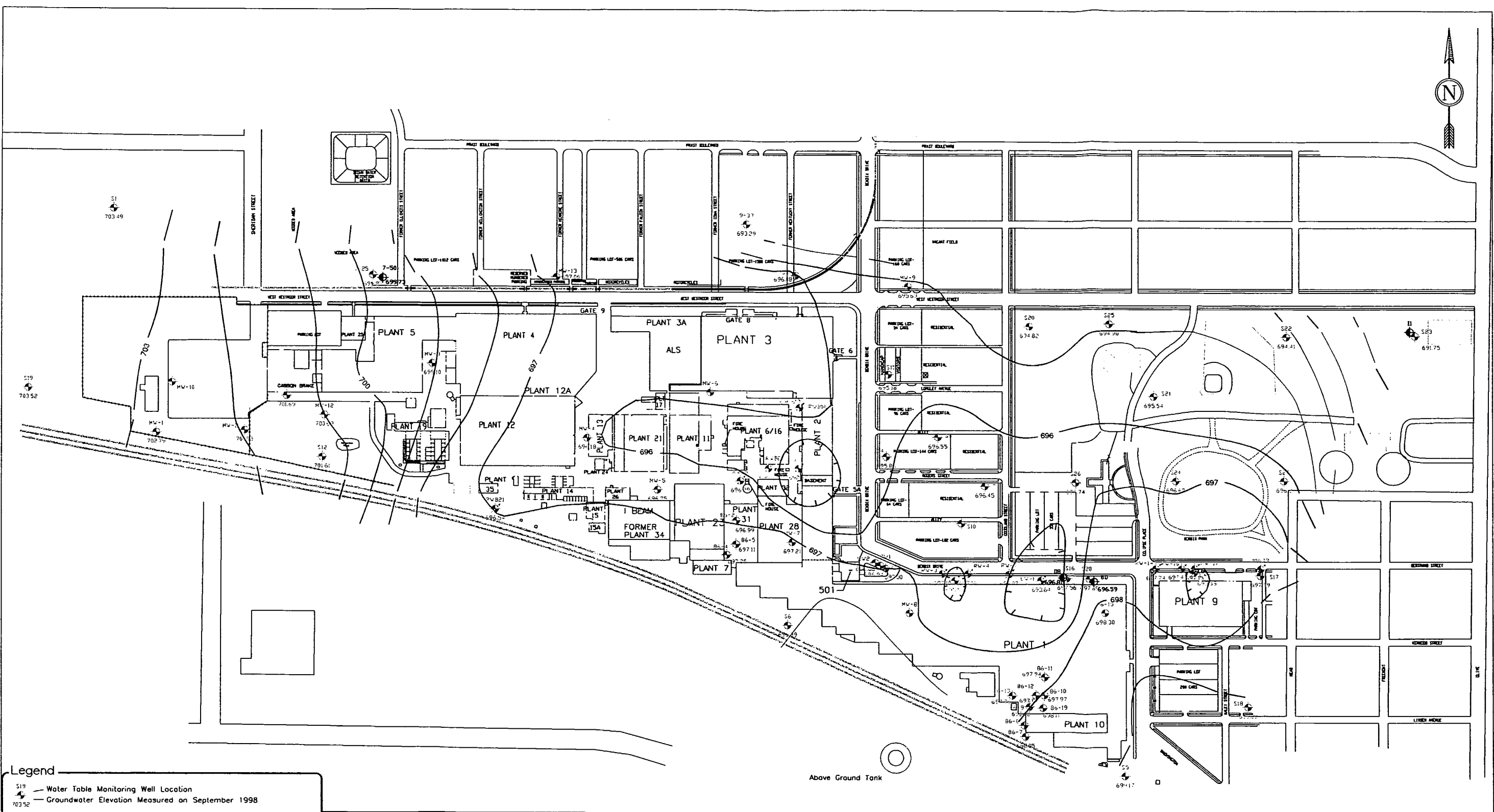


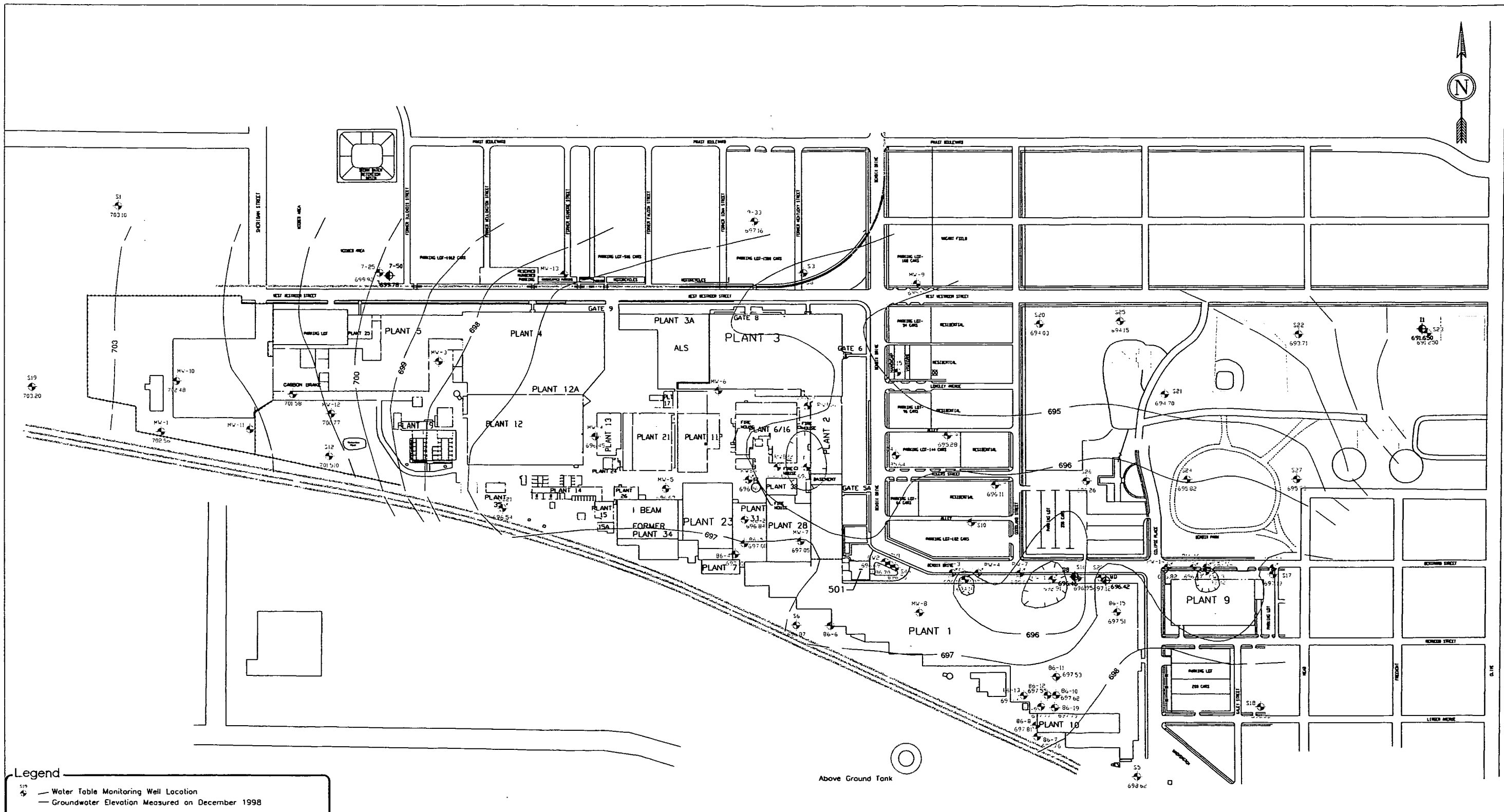
FIGURE 2
MONITORING WELL AND RECOVERY WELL NETWORK
AFTER REHABILITATION
ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA



Legend

- S19 — Water Table Monitoring Well Location
- 703.52 — Groundwater Elevation Measured on September 1998
- MW-1 — Recovery Wells
- 697.74 — Groundwater Elevation Measured on September 1998
- 696 — Groundwater Potentiometric Contour, feet above Mean Sea Level

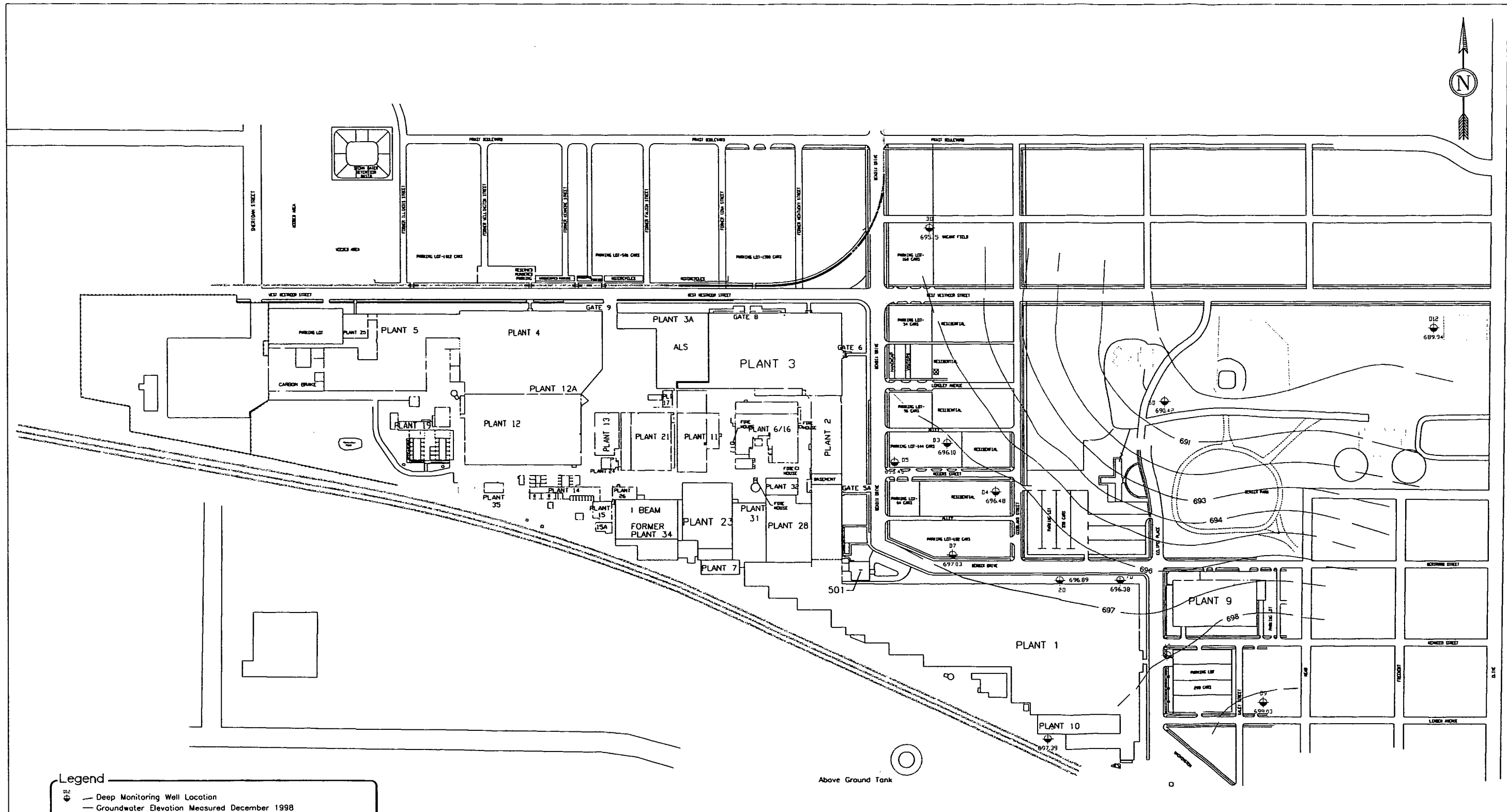
FIGURE 3
POTENTIOMETRIC SURFACE MAP, SHALLOW WELLS, SEPTEMBER 1998
QUARTERLY GROUNDWATER MONITORING
ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA



Legend

- Water Table Monitoring Well Location
 — Groundwater Elevation Measured on December 1998
- Recovery Wells
 — Groundwater Elevation Measured on December 1998
- 696 — Groundwater Potentiometric Contour, feet above Mean Sea Level

FIGURE 4
POTENTIOMETRIC SURFACE MAP, SHALLOW WELLS, DECEMBER 1998
QUARTERLY GROUNDWATER MONITORING
ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA



Legend

- Deep Monitoring Well Location
- Groundwater Elevation Measured December 1998
- Groundwater Potentiometric Contour, feet above Mean Sea Level

Note: Elevation Data for Well 4D was not included due to significant variance in its water level compared to other deep wells.

FIGURE 5
POTENTIOMETRIC SURFACE MAP, DEEP WELLS, DECEMBER 1998
QUARTERLY GROUNDWATER MONITORING
ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA

GROUNDWATER SAMPLING RECORDS

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: E-3
 Sample Date: 9/18/98
 Sample Time: 1003

SITE/SAMPLE LOCATION

Site Name: AlledSignal South Bend
 Personnel Present: Chris Amore (HLA)
 Activity Start: 0955 Activity End: 1003
 Weather: Sunny 70's
 Well Type and Location: Recovery well
 Project No.: 9822-02

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): _____
 Measuring Device Decontamination Procedure: Lixinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal) 1
 Time (Min.) _____
 Temperature (C°) _____
 pH (Units) _____
 Conductivity at 25°C (umhos/cm) _____
 Total Volume Purged 1 gallons
 Water Appearance (describe color, clarity odor): CLEAR SLIGHT ODR

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot
 Sample Water Appearance (color, clarity, odor): CLEAR SLIGHT ODR

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
_____	_____	_____	_____	Y N Y N	Y N Y N
_____	_____	_____	_____	Y N Y N	Y N Y N
_____	_____	_____	_____	Y N Y N	Y N Y N

OTHER OBSERVATIONS
 DUE TO LOW FLOW AT WELL 6.5 gpm
 NOT ABLE TO PURGE FULL 5 GALLONS
 NAME (Print) CHRIS AMORE
 SIGNATURE: Chris Amore

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: EW-1
 Sample Date: 9/18/98 9-17-92
 Sample Time: 1448

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Chris Amore (HLA)
 Activity Start: 1445 Activity End: 1448
 Weather: SUNNY 80S
 Well Type and Location: Recovery well

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using _____ Solinst Water Depth: _____ feet using _____ Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK Cover Secure
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (____ in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal)	<u>5 gal</u>			
Time (Min.)	<u>1448</u>			
Temperature (C°)	<u>15.1</u>			
pH (Units)	<u>7.31</u>			
Conductivity at 25°C (<u>µmhos/cm</u>)	<u>1.51</u>			
Total Volume Purged	<u>5</u> gallons			
Water Appearance (describe color, clarity odor)	<u>CLEAR NO ODOR</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot

Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool to 4°C?
				Filtered?		
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/>	N
				Y N	Y N	N
				Y N	Y N	N
				Y N	Y N	N

OTHER OBSERVATIONS

NAME (Print) CHRIS Amore
 SIGNATURE: Chris Amore

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: EW-2

Sample Date: ~~9/18/98~~ 9-17-98

Sample Time: 1425

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend

Project No.: 9822-02

Personnel Present: Chris Amore (HLA)

Activity Start: 1415

Activity End: 1425

Weather: Sunny 80's

Well Type and Location: Recovery well

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)

Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet

Floating Product Thickness: _____ feet using _____
(measuring device)

Well Condition (see Note 1): OK Saturated

Measuring Device Decontamination Procedure: Liquinox/Distilled water

PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
() .65 gal/ft (4 in)
() _____ gal/ft (_____ in)

Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal)	5			
Time (Min.)	1425			
Temperature (C°)	14.8			
pH (Units)	6.92			
Conductivity at 25°C (µmhos/cm)	1.14			
Total Volume Purged	5	gallons		
Water Appearance (describe color, clarity odor):	CLEAR NO ODOR			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot

Sample Water Appearance (color, clarity, odor):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>
				Y N Y N	N N
				Y N Y N	N N
				Y N Y N	N N

OTHER OBSERVATIONS

NAME (Print)

CHRIS Amore

SIGNATURE:

Chris Amore

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
(2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

DUP 20-2

Sample No.: MW-100
 Sample Date: 9/18/98 ~~9-17-98~~
 Sample Time: 1425

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Chris Amore (HLA)
 Activity Start: _____ Activity End: _____
 Weather: _____
 Well Type and Location: Recovery well

WATER LEVEL/WEIR DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)

Well Condition (see Note 1): _____
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (____ in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal)	_____	_____	_____	_____
Time (Min.)	_____	_____	_____	_____
Temperature (C°)	_____	_____	_____	_____
pH (Units)	_____	_____	_____	_____
Conductivity at 25°C (umhos/cm)	_____	_____	_____	_____
Total Volume Purged	_____	_____	_____	_____ gallons
Water Appearance (describe color, clarity odor)	_____			

SAMPLING PROCEDURE

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y N Y N	Y N Y N
_____	_____	_____	_____	Y N Y N	Y N Y N
_____	_____	_____	_____	Y N Y N	Y N Y N
_____	_____	_____	_____	Y N Y N	Y N Y N

OTHER OBSERVATIONS _____

NAME (Print) CHRIS Amore
 SIGNATURE: Chris Amore

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: EW-3
 Sample Date: 9/18/ 98
 Sample Time: 1405

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Chris Amore (HLA)
 Activity Start: 1345 Activity End: 1405
 Weather: Sunny 80's
 Well Type and Location: Recovery well

WATER LEVEL/WELL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK SOLID
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal)	5			
Time (Min.)	1405			
Temperature (C°)	20.6			
pH (Units)	6.68			
Conductivity at 25°C (µmhos/cm)	1.64			
Total Volume Purged	5	gallons		
Water Appearance (describe color, clarity odor):				

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot
 CLORAR NO ODER
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field	Cool
				Filtered?	to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	N
				Y N	Y N
				Y N	Y N
				Y N	Y N
				Y N	Y N

OTHER OBSERVATIONS

NAME (Print) CHRIS AMORE
 SIGNATURE: Chris Amore

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: RWB-16
 Sample Date: 9/18/98
 Sample Time: 1507

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Chris Amore (HLA)
 Activity Start: 1505 Activity End: 1507
 Weather: Sunny 80's
 Well Type and Location: Recovery well

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using _____ Solinst Water Depth: _____ feet using _____ Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK Seals
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVN 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal)	<u>5</u>			
Time (Min.)	<u>1507</u>			
Temperature (C°)	<u>15.5</u>			
pH (Units)	<u>7.11</u>			
Conductivity at 25°C <u>mS/cm</u> (µmhos/cm)	<u>1.26</u>			
Total Volume Purged	<u>5</u> gallons			
Water Appearance (describe color, clarity odor)	<u>CLORNE SLIGHT ODOR</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot
 Sample Water Appearance (color, clarity, odor): CLORNE SLIGHT ODOR

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool to 4°C?
				Filtered?		
VOCs	8260	2x40-ml vials	HCl	Y	<u>Y</u>	N
				Y	N	N
				Y	N	N
				Y	N	N
				Y	N	N

OTHER OBSERVATIONS

NAME (Print) CHRIS AMORE
 SIGNATURE: Chris Amore

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: RWB-22

Sample Date: 9/18/98

Sample Time: 1547

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend

Project No.: 9822-02

Personnel Present: Chris Amore (HLA)

Activity Start: 1547

Activity End: 1547

Weather: OK Sunny 80'S

Well Type and Location: Recovery well

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using _____ Solinst Water Depth: _____ feet using _____ Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)

Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet

Floating Product Thickness: _____ feet using _____
(measuring device)

Well Condition (see Note 1): OK SECURE

Measuring Device Decontamination Procedure: Liquinox/Distilled water

PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/R (1.5 in)
Column feet X () .16 gal/R (2 in) X -- casing volumes = 5 gallons to purge
() .65 gal/R (4 in)
() gal/R (in)

Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal)	<u>5</u>			
Time (Min.)	<u>1547</u>			
Temperature (C°)	<u>15.5</u>			
pH (Units)	<u>7.77</u>			
Conductivity at 25°C (umhos/cm)	<u>1.53</u>			
Total Volume Purged	<u>5</u> gallons			
Water Appearance (describe color, clarity odor):	<u>Clear slight odor</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot

Sample Water Appearance (color, clarity, odor): Clear slight odor

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool to 4°C?
				Filtered?		
VOCs	8260	2x40-ml vials	HCl	Y	<input checked="" type="checkbox"/>	N
				Y	N	N
				Y	N	N
				Y	N	N
				Y	N	N

OTHER OBSERVATIONS

NAME (Print) CHRIS Amore

SIGNATURE: Chris Amore

- Notes: (1) Describe whether well was locked and the condition of the protective casing and concrete collar.
(2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 7-25
 Sample Date: 12-9-98
 Sample Time: 845

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822 .02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 939 Activity End: 948
 Weather: Sunny
 Well Type and Location: stickup 1.5" galvanized PVC

WATER LEVEL/ WELL DATA

Well Depth: 26.6 feet using 20-55 (from top of well casing) (measuring device) Water Depth: 20.55 feet using Solid (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet (from ground surface) Protective Casing Stickup: _____ feet (for above-ground surface) Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 1.7 gallons to purge
6.05 () .65 gal/ft (4 in)
✓ .042 gal/ft (1.5 in)
 Purge Method (see Note 2): stainless steel bailer

	<u>.56</u>	<u>1.2</u>	<u>1.66</u>	
Purge Vol. (gal)	<u>.56</u>	<u>1.2</u>	<u>1.66</u>	
Time (Min.)	<u>840</u>	<u>0843</u>	<u>846</u>	
Temperature (C°)	<u>11.8</u>	<u>12.2</u>	<u>12.6</u>	
pH (Units)	<u>7.09</u>	<u>7.11</u>	<u>7.07</u>	
Conductivity at 25°C (mS/cm)	<u>.700</u>	<u>.707</u>	<u>.712</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):	<u>translucent, light brown</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): stainless steel bailer
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>Ⓝ</u> <u>Ⓝ</u>	N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 7-50
 Sample Date: 12/9/98
 Sample Time: 9:21

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 8:54 Activity End: _____
 Weather: Sunny 75°
 Well Type and Location: 1.5" galvanized

WATER LEVEL/WELL DATA

Well Depth: 50.0 feet using 20.06 (from top of well casing) (measuring device) Water Depth: _____ feet using Solinst (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet (from ground surface) Protective Casing Stickup: _____ feet (for above-ground surface) Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X A casing volumes = 8.3 gallons to purge
29.94 () .65 gal/ft (4 in)
0.92 gal/ft (6.5 in)
 Purge Method (see Note 2): Dedicated PVC bailer

Purge Vol. (gal)	<u>2.75</u>	<u>5.0</u>	<u>8.26</u>	
Time (Min.)	<u>9:01</u>	<u>9:08</u>	<u>9:18</u>	
Temperature (C°)	<u>11.0</u>	<u>11.4</u>	<u>11.2</u>	
pH (Units)	<u>7.08</u>	<u>7.13</u>	<u>7.18</u>	
Conductivity at 25°C (mS/cm)	<u>0.67</u>	<u>0.68</u>	<u>0.68</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):	<u>clear</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): dedicated PVC bailer.
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>N</u>	<u>N</u>
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 9-37
 Sample Date: 12/4/84
 Sample Time: 0753

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 0730 Activity End: _____
 Weather: Sunny 25°
 Well Type and Location: manhole 1.5" PVC

WATER LEVEL/WEEL DATA

Well Depth: 27.3 feet using 4.04 (measuring device) Water Depth: 19.04 feet using Solinst (measuring device)
 (from top of well casing) (from top of well casing)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well Casing Difference: _____ feet
 (from ground surface) (for above-ground surface)
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 2.2 gallons to purge
 () .65 gal/ft (4 in)
8.26 (X) .042 gal/ft (1.5 in)
 Purge Method (see Note 2): skin D. bailer

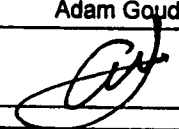
Purge Vol. (gal)	<u>.75</u>	<u>1.4</u>	<u>2.2</u>	
Time (Min.)	<u>0243</u>	<u>0246</u>	<u>0249</u>	
Temperature (C°)	<u>15.5</u>	<u>15.8</u>		
pH (Units)	<u>6.55</u>	<u>6.90</u>	<u>6.99</u>	
Conductivity at 25°C (mS/cm)	<u>.701</u>	<u>.665</u>	<u>.708</u>	
Total Volume Purged	_____ gallons			
Water Appearance (describe color, clarity odor):	<u>opaque, light brown, silty</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): sterilized steel bailer
 Sample Water Appearance (color, clarity, odor): same

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>(N)</u>	Y <u>(Y)</u> N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS _____
 NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 86-10
 Sample Date: 12/9/98
 Sample Time: 1630

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1602 Activity End: 1640
 Weather: Sunny 45°
 Well Type and Location: Stick 1.5"

WATER LEVEL/WELL DATA

Well Depth: 27.1 feet using — (measuring device) Water Depth: 17.44 feet using Solinst (measuring device)
 Historical Well Depth: — feet Protective Casing Stickup: — feet Protect. Casing Well Casing Difference: — feet
 Floating Product Thickness: — feet using — (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: — Ambient Air: — ppm Well Mouth: — ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 2.6 gallons to purge
9.66 () .65 gal/ft (4 in)
(+) .092 gal/ft (1.5 in)
 Purge Method (see Note 2): D. Bailor

Purge Vol. (gal)	<u>.89</u>	<u>1.78</u>	<u>2.6</u>	
Time (Min.)	<u>1618</u>	<u>1622</u>	<u>1628</u>	
Temperature (C°)	<u>14.9</u>	<u>15.5</u>	<u>15.5</u>	
pH (Units)	<u>7.05</u>	<u>7.02</u>	<u>6.99</u>	
Conductivity at 25°C (mS/cm)	<u>1.84</u>	<u>2.02</u>	<u>2.03</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):	<u>clear slight yellow tint</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Dedicated PVC bailor
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y N	N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 86515
 Sample Date: 12/9/98
 Sample Time: 1700

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1636 Activity End: 1710
 Weather: Sunny 45°
 Well Type and Location: Stick up 1.5" PVC

WATER LEVEL/WELL DATA

Well Depth: 25.3 feet using - (measuring device) Water Depth: 17.55 feet using Solinst (measuring device)
 Historical Well Depth: - feet Protective Casing Stickup: - feet Protect. Casing Well Casing Difference: - feet
 Floating Product Thickness: 0 feet using - (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: - Ambient Air: - ppm Well Mouth: - ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 2.14 gallons to purge
2.75 () .65 gal/ft (4 in)
 () .092 gal/ft (1.5 in)
 Purge Method (see Note 2): dedicated PVC bailer

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (mS/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor)
<u>0.71</u>	<u>16.46</u>	<u>16.3</u>	<u>7.05</u>	<u>2.14</u>	<u>gallons</u>	<u>Brown / translucent, cloudy</u>
<u>1.42</u>	<u>16.52</u>	<u>16.7</u>	<u>6.99</u>	<u>2.26</u>		
<u>2.14</u>	<u>16.55</u>	<u>16.2</u>	<u>7.00</u>	<u>2.22</u>		

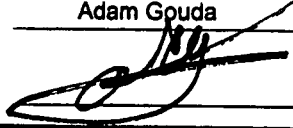
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Dedicated PVC bailer
 Sample Water Appearance (color, clarity, odor): See (1) above

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Bottle Lot	Preservative/	Field	Cool
Voc	8260	Volume, Type		Volume	Filtered?	to 4°C?
		<u>2</u>		<u>HCL 1-1</u>	<u>Y</u>	<u>N</u>
					<u>Y</u>	<u>N</u>
					<u>Y</u>	<u>N</u>
					<u>Y</u>	<u>N</u>
					<u>Y</u>	<u>N</u>

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-2
 Sample Date: 12/9/98
 Sample Time: 1212

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 10:02 Activity End: 1015
 Weather: Sunny 35°
 Well Type and Location: flout.

WATER LEVEL/WELL DATA

Well Depth: 15.4 feet using 12.85 Solinst Water Depth: 12.75 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X 3.05 3 casing volumes = 1.46 gallons to purge
 () .16 gal/ft (2 in)
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): D. boiler

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (mS/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor):
<u>.48</u>	<u>10:00</u>	<u>10.9</u>	<u>6.87</u>	<u>1.90</u>	<u>0.96</u>	<u>grey translucent, cloudy</u>
<u>1.46</u>	<u>1014</u>	<u>11.1</u>	<u>7.83</u>	<u>1.30</u>	<u>1.30</u>	

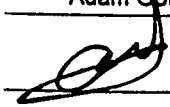
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. boiler
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field		Cool	
					Filtered?	to 4°C?		
Voc	8260	2		HCL 1-1	Y	<u>N</u>	Y	N
					Y	N	Y	N
					Y	N	Y	N
					Y	N	Y	N
					Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: Dup 200
 Sample Date: 12/9/98
 Sample Time: —

MW-2
 Dup of MW-2

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: _____ Activity End: _____
 Weather: _____
 Well Type and Location: _____

WATER LEVEL/WELL DATA

Well Depth: 21.15 feet using _____ Water Depth: 17.35 feet using _____
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____
 (measuring device)
 Well Condition (see Note 1): _____
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X _____ casing volumes = _____ gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): D. bailer

Purge Vol. (gal)	_____	_____	_____	_____
Time (Min.)	_____	_____	_____	_____
Temperature (C°)	_____	_____	_____	_____
pH (Units)	_____	_____	_____	_____
Conductivity at 25°C (mS/cm)	_____	_____	_____	_____
Total Volume Purged	_____	_____	_____	_____ gallons
Water Appearance (describe color, clarity odor):	_____			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. bailer
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2	_____	HCL 1-1	Y <u>(N)</u>	<u>(Y)</u> N
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N

OTHER OBSERVATIONS _____
 NAME (Print) Adam Gouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-4
 Sample Date: 12/9/98
 Sample Time: 1224

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1210 Activity End: _____
 Weather: Sunny 45°
 Well Type and Location: FLMNT 2" PVC

WATER LEVEL/ WELL DATA

Well Depth: 21.0 feet using _____ Water Depth: 16.21 feet using Solo 2 JF
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: 21.0 feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: ✓ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X 4.79 .16 gal/ft (2 in) X 3 casing volumes = 2.3 gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): D. bailer

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (mS/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor):
<u>0.76</u>	<u>1218</u>	<u>16.1</u>	<u>6.91</u>	<u>1.29</u>	gallons	<u>brn, translucent, cloudy</u>
<u>1.52</u>	<u>1219</u>	<u>17.1</u>	<u>6.90</u>	<u>1.33</u>		
<u>2.29</u>	<u>1222</u>	<u>17.1</u>	<u>6.94</u>	<u>1.32</u>		

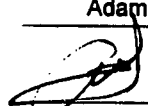
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. bailer
 Sample Water Appearance (color, clarity, odor): same as above.

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>(N)</u>	<u>(Y)</u> N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-5
 Sample Date: 12/9/98
 Sample Time: 1140

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822 .02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1128 Activity End: _____
 Weather: Sunny w/5
 Well Type and Location: flank 2" PVC

WATER LEVEL/WELL DATA

Well Depth: 20.8 feet using 16.58 (from top of well casing) (measuring device)
 Water Depth: 16.58 feet using Selinsk (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet (from ground surface)
 Protective Casing Stickup: _____ feet (for above-ground surface)
 Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X 4.22 () .16 gal/ft (2 in) X 3 casing volumes = 2.02 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): D. bailer

	<u>0.67</u>	<u>1.34</u>	<u>2.02</u>	
Purge Vol. (gal)	<u>0.67</u>	<u>1.34</u>	<u>2.02</u>	
Time (Min.)	<u>1131</u>	<u>1133</u>	<u>1135</u>	
Temperature (C°)	<u>14.7</u>	<u>14.8</u>	<u>14.8</u>	
pH (Units)	<u>6.82</u>	<u>6.78</u>	<u>6.77</u>	
Conductivity at 25°C (mS/cm)	<u>1.32</u>	<u>1.26</u>	<u>1.19</u>	
Total Volume Purged	_____ gallons			
Water Appearance (describe color, clarity odor):	<u>Slight greenish tint, Rusty Dross, w/ Red particles</u>			

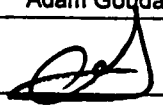
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. bailer
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field		Cool	
					Filtered?	to 4°C?		
Voc	8260	2		HCL 1-1	Y	<u>N</u>	<u>Y</u>	N
					Y	N	Y	N
					Y	N	Y	N
					Y	N	Y	N
					Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-7
 Sample Date: 12/9/98
 Sample Time: 1205

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1145 Activity End: 1210
 Weather: Sunny 40°
 Well Type and Location: 6 inch 2" PVC

WATER LEVEL/ WELL DATA

Well Depth: 14.2 feet using _____ (from top of well casing) (measuring device)
 Water Depth: 15.54 feet using Selinst (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet (from ground surface)
 Protective Casing Stickup: _____ feet (for above-ground surface)
 Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X 2.66 1.16 gal/ft (2 in) X 3 casing volumes = 1.27 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): D. bailer

Purge Vol. (gal)	<u>0.42</u>	<u>.84</u>	<u>1.27</u>	
Time (Min.)	<u>1158</u>	<u>1201</u>	<u>1203</u>	
Temperature (C°)	<u>13.0</u>	<u>13.6</u>	<u>13.6</u>	
pH (Units)	<u>6.77</u>	<u>6.73</u>	<u>6.73</u>	
Conductivity at 25°C (mS/cm)	<u>1.26</u>	<u>1.27</u>	<u>1.26</u>	
Total Volume Purged	<u>1.4</u>			gallons
Water Appearance (describe color, clarity odor):				

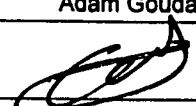
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. bailer
 Sample Water Appearance (color, clarity, odor): Bushy Bir translucent

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-9
 Sample Date: 12/9/98
 Sample Time: 1318

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1307 Activity End: 1330
 Weather: Sunny 45°
 Well Type and Location: Fluent - 2' PVC

WATER LEVEL/WEEL DATA

Well Depth: 14.8 feet using - (measuring device) Water Depth: 15.74 feet using Sub. 20k (measuring device)
 (from top of well casing) (from top of well casing)
 Historical Well Depth: - feet Protective Casing Stickup: - feet Protect. Casing Well Casing Difference: - feet
 (from ground surface) (for above-ground surface)
 Floating Product Thickness: 0 feet using - (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: - Ambient Air: - ppm Well Mouth: - ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X 11.06 () .16 gal/ft (2 in) X 3 casing volumes = 1.94 gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): D. bailer

Purge Vol. (gal)	<u>0.64</u>	<u>1.28</u>	<u>1.94</u>	
Time (Min.)	<u>1310</u>	<u>1312</u>	<u>1316</u>	
Temperature (C°)	<u>17.1</u>	<u>17.9</u>	<u>17.8</u>	
pH (Units)	<u>6.70</u>	<u>6.60</u>	<u>6.57</u>	
Conductivity at 25°C (mS/cm)	<u>1.61</u>	<u>1.63</u>	<u>1.63</u>	
Total Volume Purged	<u>2.0</u> gallons			
Water Appearance (describe color, clarity odor):	<u>brownish/gray translucent</u>			

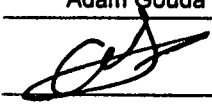
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. bailer
 Sample Water Appearance (color, clarity, odor):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="checkbox"/> N	Y <input checked="" type="checkbox"/> N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-10
 Sample Date: 12/9/98
 Sample Time: 9:52

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam Gouda, Pete Kaczor
 Activity Start: 9:32 Activity End: _____
 Weather: Sunny 30°
 Well Type and Location: flank 2" PVC

WATER LEVEL/WELL DATA

Well Depth: 19.4 feet using 13.53 (measuring device) Water Depth: _____ feet using Solinox (measuring device)
(from top of well casing) (from top of well casing)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well Casing Difference: _____ feet
(from ground surface) (for above-ground surface)
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X 5.87 .16 gal/ft (2 in) X 3 casing volumes = 2.8 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): 2-bailer stainless-steel bailer

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (mS/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor):
<u>0.94</u>	<u>942</u>	<u>13.4</u>	<u>6.77</u>	<u>1.34</u>	<u>1.88</u>	<u>Rusty brown, slight translucent</u>
<u>2.9</u>	<u>950</u>	<u>13.8</u>	<u>6.72</u>	<u>1.38</u>	<u>1.38</u>	

SAMPLING PROCEDURES

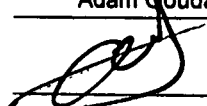
Sampling Procedure (see Note 2): 2-bailer stainless-steel bailer
 Sample Water Appearance (color, clarity, odor): Rusty brown, slight translucent

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

well casing bent not able to use
 2-bailer using stainless steel bailer.

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: NW-12
 Sample Date: 12/9/98
 Sample Time: 1033

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822, 02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1021 Activity End: 1040
 Weather: Sunny 90°
 Well Type and Location: Fl. mut 2" PVC

WATER LEVEL/WELL DATA

Well Depth: 13.4 feet using _____ Water Depth: 10.81 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): good see other ob.
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X 2.99 .16 gal/ft (2 in) X 3 casing volumes = 1.4 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): D. boiler

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (mS/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor:)
<u>.47</u>	<u>1024</u>	<u>11.5</u>	<u>7.79</u>	<u>.710</u>	<u>1.5</u> gallons	<u>slight transluent, grey</u>
<u>.94</u>	<u>1029</u>	<u>12.1</u>	<u>7.78</u>	<u>.244</u>		
<u>1.43</u>	<u>1031</u>	<u>12.0</u>	<u>7.89</u>	<u>.233</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. boiler
 Sample Water Appearance (color, clarity, odor): same as above

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>NO</u>	N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS: NO cap or lock
New cap installed
 NAME (Print): Adam Gouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.
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HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: ML-73
 Sample Date: 2/9/98
 Sample Time: 819

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822 .02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 805 Activity End: 825
 Weather: Sun 25°
 Well Type and Location: 2" PVC FL. AND

WATER LEVEL/WELL DATA

Well Depth: 18.8 feet using 1550 (measuring device) Water Depth: 15.50 feet using 15.50 (measuring device)
 Historical Well Depth: — feet Protective Casing Stickup: — feet Protect. Casing Well Casing Difference: — feet
 Floating Product Thickness: 0 feet using — (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: — Ambient Air: — ppm Well Mouth: — ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X (✓) .16 gal/ft (2 in) X 3 casing volumes = 1.5 gallons to purge
3.3 () .65 gal/ft (4 in)
 Purge Method (see Note 2): D. beiber

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (mS/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor:)
<u>.52</u>	<u>810</u>	<u>1.7</u>	<u>7.11</u>	<u>.767</u>	<u>1.0</u>	<u>clear</u>
<u>1.0</u>	<u>814</u>	<u>12.4</u>	<u>7.04</u>	<u>.762</u>	<u>1.5</u>	
<u>1.5</u>	<u>818</u>	<u>12.5</u>	<u>7.04</u>	<u>.767</u>		

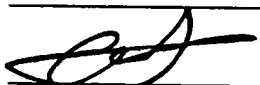
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. beiber
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Bottle Lot	Preservative/	Field	Cool
Voc	8260	Volume, Type		Volume	Filtered?	to 4°C?
		<u>2</u>		<u>HCL 1-1</u>	<u>Y</u> <u>(N)</u>	<u>(Y)</u> <u>N</u>
					<u>Y</u> <u>N</u>	<u>Y</u> <u>N</u>
					<u>Y</u> <u>N</u>	<u>Y</u> <u>N</u>
					<u>Y</u> <u>N</u>	<u>Y</u> <u>N</u>

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 53
 Sample Date: 12/10/98
 Sample Time: 1804

SITE/SAMPLE LOCATION

Site Name: Allied Signal South bend 1467 Project No.: 9822.02
 Personnel Present: Adem Gorda P.k.
 Activity Start: 1750 Activity End: 1808
 Weather: dark 25°
 Well Type and Location: 4" galvanized stickup

WATER LEVEL/DEPTH DATA

Well Depth: 24.6 feet using Solinst Water Depth: 21.07 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: — feet Protective Casing Stickup: — feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: — feet
 Floating Product Thickness: — feet using — (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: —
 PI Meter ID: — Ambient Air: — ppm Well Mouth: — ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = — gallons to purge
3.53 () .65 gal/ft (4 in)
 () — gal/ft (— in)
 Purge Method (see Note 2): dedicated bladder pump

Purge Vol. (gal)	<u>2.29</u>	<u>4.58</u>	<u>6.8</u>	
Time (Min.)	<u>1757</u>	<u>1759</u>	<u>1801</u>	
Temperature (C°)	<u>13.5</u>	<u>14.1</u>	<u>14.1</u>	
pH (Units)	<u>2.51</u>	<u>7.42</u>	<u>7.37</u>	
Conductivity at 25°C (umhos/cm)	<u>1.09</u>	<u>0502</u>	<u>0500</u>	
Total Volume Purged				<u>—</u> gallons
Water Appearance (describe color, clarity odor):	<u>clear</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
<u>VOC</u>	<u>8760</u>	<u>2</u>		<u>HCL - 1-1</u>	<u>Y</u> <u>⊗</u> <u>⊗</u>	<u>N</u>
					<u>Y</u> <u>N</u> <u>Y</u> <u>N</u>	<u>N</u>
					<u>Y</u> <u>N</u> <u>Y</u> <u>N</u>	<u>N</u>
					<u>Y</u> <u>N</u> <u>Y</u> <u>N</u>	<u>N</u>
					<u>Y</u> <u>N</u> <u>Y</u> <u>N</u>	<u>N</u>

OTHER OBSERVATIONS

P = 3:00
V = 3:00
30P5E

NAME (Print) Adem Gorda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 121-198-54A
 Sample Date: 12-10-98
 Sample Time: 1827

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam Gouda, Pete Kaczor
 Activity Start: 1812 Activity End: _____
 Weather: cloudy, 25°
 Well Type and Location: 1.5" PVC stick up

WATER LEVEL/WELL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using _____ Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 4.6 gallons to purge
 () .65 gal/ft (4 in)
 (x) 0.097 gal/ft (1.5 in)
 Purge Method (see Note 2): dedicated bladder pump

Purge Vol. (gal)	1.5	3.0	4.6	
Time (Min.)	<u>1818</u>	<u>1821</u>	<u>1825</u>	
Temperature (C°)	<u>12.1</u>	<u>12.3</u>	<u>12.3</u>	
pH (Units)	<u>6.99</u>	<u>6.88</u>	<u>6.85</u>	
Conductivity at 25°C (mS/cm)	<u>0.971</u>	<u>0.487</u>	<u>1.05</u>	
Total Volume Purged	<u>5</u>			gallons
Water Appearance (describe color, clarity odor):	<u>Sandy cloudy, opaque</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): Same

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOC	8260	2		HCL	Y <u>N</u>	<u>Y</u> N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda/Peter Kaczor
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 59
 Sample Date: 12/9/98
 Sample Time: 1822

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1804 Activity End: 1825
 Weather: Sunny 35°
 Well Type and Location: 4" galvanized stick-up

WATER LEVEL/WELL DATA

Well Depth: 21.10 feet using ~~stick~~ (from top of well casing) (measuring device)
 Water Depth: 18.06 feet using Solinst (from top of well casing) (measuring device)
 Historical Well Depth: — feet (from ground surface) Protective Casing Stickup: — feet (for above-ground surface) Protect. Casing Well Casing Difference: — feet
 Floating Product Thickness: — feet using — (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: — Ambient Air: — ppm Well Mouth: — ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 6.0 gallons to purge
3.04 () ↔ .65 gal/ft (4 in)
 () — gal/ft (— in)
 Purge Method (see Note 2): D. bailer

Purge Vol. (gal)	2.0	4.0	6.0
Time (Min.)	<u>1810</u>	<u>1816</u>	<u>1819</u>
Temperature (C°)	<u>15.5</u>	<u>15.6</u>	<u>15.6</u>
pH (Units)	<u>6.90</u>	<u>6.91</u>	<u>6.84</u>
Conductivity at 25°C (mS/cm)	<u>1.39</u>	<u>1.44</u>	<u>1.42</u>
Total Volume Purged	gallons		
Water Appearance (describe color, clarity odor):	<u>orange yellow translucent</u>		

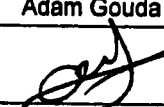
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. bailer
 Sample Water Appearance (color, clarity, odor): same as above

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: S-15
 Sample Date: 12-18-98
 Sample Time: 1300

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1244 Activity End: _____
 Weather: 40% sunny
 Well Type and Location: 4" Galv. stick up

WATER LEVEL/WELL DATA

Well Depth: 22.03 feet using 19.59 (measuring device) Water Depth: _____ feet using Sobinst (measuring device)
 (from top of well casing) (from top of well casing)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well Casing Difference: _____ feet
 (from ground surface) (for above-ground surface)
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): good, locked
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 4.8 gallons to purge
2.44 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Dedicated bladder pump, disposable bailer

Purge Vol. (gal)	<u>1.60</u>	<u>2.8</u>	<u>4.8</u>	
Time (Min.)	<u>1250</u>	<u>1254</u>	<u>1258</u>	
Temperature (C°)	<u>13.9</u>	<u>13.8</u>	<u>14.5</u>	
pH (Units)	<u>6.80</u>	<u>6.78</u>	<u>6.72</u>	
Conductivity at 25°C (mS/cm)	<u>1.80</u>	<u>1.82</u>	<u>1.93</u>	
Total Volume Purged	<u>5</u>			gallons
Water Appearance (describe color, clarity odor):	<u>brown, silty, opaque</u>			

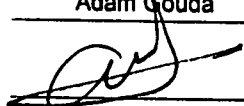
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): bladder pump, disposable bailer
 Sample Water Appearance (color, clarity, odor): translucent, light brown

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>(N)</u>	Y <u>(Y)</u> N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 20556 516
 Sample Date: 12/8/48
 Sample Time: 1801

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1745 Activity End: 1806
 Weather: Sunny 45°
 Well Type and Location: sticking 4 galvanized

WATER LEVEL/WELL DATA

Well Depth: 21.5 feet using 623 (from top of well casing) (measuring device) Water Depth: 19.23 feet using Blint (from top of well casing) (measuring device)
 Historical Well Depth: — feet (from ground surface) Protective Casing Stickup: — feet (for above-ground surface) Protect. Casing Well Casing Difference: — feet
 Floating Product Thickness: — feet using — (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: — Ambient Air: — ppm Well Mouth: — ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 4.42 gallons to purge
2.27 ~~2.27~~ .65 gal/ft (4 in) () gal/ft () in
 Purge Method (see Note 2): Blint pump dedicated PVC bailer

Purge Vol. (gal)	<u>1.47</u>	<u>3.0</u>	<u>4.42</u>	
Time (Min.)	<u>1748</u>	<u>1753</u>	<u>1757</u>	
Temperature (C°)	<u>14.3</u>	<u>14.4</u>	<u>4.3</u>	
pH (Units)	<u>6.88</u>	<u>6.84</u>	<u>6.92</u>	
Conductivity at 25°C (mS/cm)	<u>1.92</u>	<u>1.82</u>	<u>1.82</u>	
Total Volume Purged	gallons			
Water Appearance (describe color, clarity odor):	<u>Clear.</u>			

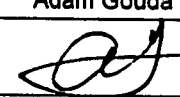
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Blint pump Dedicated PVC bailer
 Sample Water Appearance (color, clarity, odor): Clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: S-17
 Sample Date: 12/8/98
 Sample Time: 1707

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1639 Activity End: 1715
 Weather: Sun 40°
 Well Type and Location: Stick up 4" galvanized PVC

WATER LEVEL/WELL DATA

Well Depth: 30 feet using #78 (measuring device) Water Depth: 19.78 feet using Solinst (measuring device)
 (from top of well casing) (from top of well casing)
 Historical Well Depth: — feet Protective Casing Stickup: — feet Protect. Casing Well Casing Difference: — feet
 (from ground surface) (for above-ground surface)
 Floating Product Thickness: 0 feet using — (measuring device)
 Well Condition (see Note 1): good.
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: — Ambient Air: — ppm Well Mouth: — ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 19.3 gallons to purge
10.22 ~~X~~ 1.65 gal/ft (4 in) () gal/ft () in
 Purge Method (see Note 2): bladder

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (mS/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor):
<u>6.6</u>	<u>1655</u>	<u>14.6</u>	<u>6.98</u>	<u>.93</u>	<u>12.5</u>	<u>clear slight grey turbid</u>
<u>19.3</u>	<u>1700</u>	<u>14.6</u>	<u>7.02</u>	<u>.94</u>	<u>19.3</u>	
				<u>.95</u>		


SAMPLING PROCEDURES

Sampling Procedure (see Note 2): bladder pump
 Sample Water Appearance (color, clarity, odor): same as above

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Bottle Lot	Preservative/	Field	Cool
Voc	8260	Volume, Type		Volume	Filtered?	to 4°C?
		<u>2</u>		<u>HCL 1-1</u>	<u>Y</u> <u>(N)</u>	<u>(Y)</u> <u>N</u>
					<u>Y</u> <u>N</u>	<u>Y</u> <u>N</u>
					<u>Y</u> <u>N</u>	<u>Y</u> <u>N</u>
					<u>Y</u> <u>N</u>	<u>Y</u> <u>N</u>

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: S-20
 Sample Date: 12/10/98
 Sample Time: 1646

SITE/SAMPLE LOCATION

Site Name: Allard Signal South Bend Project No.: 9802.02
 Personnel Present: Kurtz/Gardner
 Activity Start: 1634 Activity End: 1656
 Weather: 40s, overcast
 Well Type and Location: 4" galv flush mount

WATER LEVEL/DEPTH DATA

Well Depth: 18.6 feet using Solinst Water Depth: 15.94 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): ok, needs lock
 Measuring Device Decontamination Procedure: _____
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 5.6 gallons to purge
2.86 (X) .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): dedicated bladder pump

Purge Vol. (gal)	1.8	3.7	5.6	
Time (Min.)	<u>1638</u>	<u>1641</u>	<u>1644</u>	
Temperature (C°)	<u>12.1</u>	<u>18.9</u>	<u>12.3</u>	
pH (Units)	<u>7.09</u>	<u>8.09</u>	<u>7.05</u>	
Conductivity at 25°C (umhos/cm)	<u>1.48</u>	<u>not 1.46</u>	<u>1.49</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):	<u>clear egg like odor</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): dedicated bladder
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
<u>VOC</u>	<u>8260</u>	<u>40 ml (2)</u>		<u>HCl</u>	Y <u>(N)</u> <u>(Y)</u>	N <u>(Y)</u> <u>(N)</u>
_____	_____	_____	_____	_____	Y N Y N	Y N Y N
_____	_____	_____	_____	_____	Y N Y N	Y N Y N
_____	_____	_____	_____	_____	Y N Y N	Y N Y N

OTHER OBSERVATIONS

P-1:30
V-3:00
25 PSI

NAME (Print) _____
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 5-21
 Sample Date: 12/10/98
 Sample Time: 1531

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1445 Activity End: _____
 Weather: 40% p. cloudy
 Well Type and Location: 4" galvanized flush mount

WATER LEVEL/WELL DATA

Well Depth: 23.4 feet using _____ Water Depth: -16.63 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 13.2 gallons to purge
6.77 (✓) .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): Dedicated bladder pump

Purge Vol. (gal)	<u>4.4</u>	<u>8.9</u>	<u>13.2</u>	
Time (Min.)	<u>1502</u>	<u>1514</u>		
Temperature (C°)	<u>11.6</u>	<u>11.6</u>		
pH (Units)	<u>7.43</u>	<u>7.40</u>	<u>7</u>	
Conductivity at 25°C (mS/cm)	<u>1.48</u>	<u>1.53</u>		
Total Volume Purged	_____ gallons			
Water Appearance (describe color, clarity odor):	_____			

SAMPLING PROCEDURES

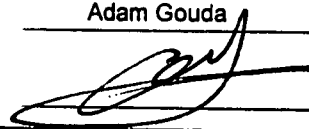
Sampling Procedure (see Note 2): Dedicated bladder pump.
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>(N)</u>	N <u>(Y)</u>
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

P- 3:00
V- 4:00
40 PSI

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: S-22
 Sample Date: 12/10/98
 Sample Time: 1610

SITE/SAMPLE LOCATION

Site Name: Allred Signal South Bend 146y
 Personnel Present: Adam Gade Peter Kaczor
 Project No.: 9822-02
 Activity Start: _____ Activity End: _____
 Weather: cloudy 70°
 Well Type and Location: 4" galvanized stickup

WATER LEVEL/WEEL DATA

Well Depth: 26.00 feet using _____ (measuring device)
 Water Depth: 15.62 feet using Solinst (measuring device)
 Historical Well Depth: _____ feet (from ground surface)
 Protective Casing Stickup: _____ feet (for above-ground surface)
 Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: _____
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 20.2 gallons to purge
10.38 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Dedicated bladder pump

Purge Vol. (gal)	<u>6.7</u>	<u>13.4</u>	<u>20.2</u>	
Time (Min.)	<u>1555</u>	<u>1600</u>	<u>1605</u>	
Temperature (C°)	<u>11.9</u>	<u>12.1</u>	<u>11.8</u>	
pH (Units)	<u>7.03</u>	<u>6.99</u>	<u>7.00</u>	
Conductivity at 25°C (umhos/cm)	<u>1.36</u>	<u>1.37</u>	<u>1.76</u>	
Total Volume Purged	_____ gallons			
Water Appearance (describe color, clarity odor):	_____			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
<u>VOL</u>	<u>8260</u>	<u>2</u>	<u>-</u>	<u>HCL 1-1</u>	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>
_____	_____	_____	_____	_____	Y N Y N	Y N Y N
_____	_____	_____	_____	_____	Y N Y N	Y N Y N
_____	_____	_____	_____	_____	Y N Y N	Y N Y N

OTHER OBSERVATIONS
P-3:00
V-4:00
PJJ-40

NAME (Print) Adam Gade
 SIGNATURE: _____

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: S-23
 Sample Date: 10/12/98 12/10/98
 Sample Time: 1630

SITE/SAMPLE LOCATION

Site Name: Allied Signal South bend 7464 Project No.: 9822-02
 Personnel Present: Adam Gonda Pete Kaczor
 Activity Start: 1610 Activity End: 1635
 Weather: cloudy 30°
 Well Type and Location: 4" galvanized stick up

WATER LEVEL/WEEL DATA

Well Depth: 29.2 feet using _____ (from top of well casing) (measuring device)
 Water Depth: 18.99 feet using Solinst (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet (from ground surface) Protective Casing Stickup: _____ feet (for above-ground surface) Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: _____
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) x 3 casing volumes = 18.0 gallons to purge
9.21 () ~~65~~ gal/ft (4 in)
 () _____ gal/ft (in)
 Purge Method (see Note 2): Dedicated bladder pump

	<u>6.0</u>	<u>12.0</u>	<u>18.0</u>
Purge Vol. (gal)			
Time (Min.)	<u>1619</u>	<u>1621</u>	<u>1626</u>
Temperature (C°)	<u>13.2</u>	<u>17.5</u>	<u>13.1</u>
pH (Units)	<u>7.16</u>	<u>7.17</u>	<u>7.12</u>
Conductivity at 25°C (umhos/cm)	<u>.711</u>	<u>.702</u>	<u>.677</u>
Total Volume Purged			
Water Appearance (describe color, clarity odor):	<u>clear</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field	Cool
					Filtered?	to 4°C?
<u>UCL</u>	<u>8760</u>	<u>2</u>	<u>-</u>	<u>HCL 1-1</u>	Y <u>(N)</u> <u>(Y)</u>	N
					Y N Y N	N
					Y N Y N	N
					Y N Y N	N
					Y N Y N	N

OTHER OBSERVATIONS

P-3:00
U-4:00
20 P 55

NAME (Print) _____

SIGNATURE: Adam Gonda

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 121-198 S24
 Sample Date: 12-10-98
 Sample Time: 1743

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam Gouda, Pete Kaczor
 Activity Start: 1733 Activity End: _____
 Weather: dark, 25°
 Well Type and Location: 1.5" PVC flush mount

WATER LEVEL/WELL DATA

Well Depth: 21.4 feet using Solinst Water Depth: 17.21 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 1.15 gallons to purge
4.19 () .65 gal/ft (4 in)
(X) 0.97 gal/ft (1.5 in)
 Purge Method (see Note 2): dedicated bladder pump

Purge Vol. (gal)	0.4	0.8	1.2
Time (Min.)	<u>1737</u>	<u>1739</u>	<u>1741</u>
Temperature (C°)	<u>11.9 6.82 (PK)</u>	<u>12.2</u>	<u>12.4</u>
pH (Units)	<u>6.82</u>	<u>6.78</u>	<u>6.79</u>
Conductivity at 25°C (mS/cm)	<u>262</u>	<u>270</u>	<u>2.71</u>
Total Volume Purged	<u>1.3</u> gallons		
Water Appearance (describe color, clarity, odor):	<u>clear</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOC	8260	2		HCL	Y <u>(N)</u>	<u>(Y)</u> N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

V-330
P-230
PSE-25

NAME (Print) Adam Gouda/Peter Kaczor
 SIGNATURE: _____

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 5-25
 Sample Date: 12/10/98
 Sample Time: 1702

SITE/SAMPLE LOCATION

Site Name: Allied Signal - South bend 14 by
 Personnel Present: Adam Gouda Peter Halton
 Activity Start: 1650 Activity End: 1705
 Weather: cloudy 30°
 Well Type and Location: 1.5" PVC stickup flush mount

Project No.: 982608

WATER LEVEL/WEEL DATA

Well Depth: 26.8 feet using - (from top of well casing) (measuring device)
 Water Depth: 16.45 feet using Sealast (from top of well casing) (measuring device)
 Historical Well Depth: - feet (from ground surface)
 Protective Casing Stickup: - feet (for above-ground surface)
 Protect. Casing Well Casing Difference: - feet
 Floating Product Thickness: - feet using - (measuring device)

Well Condition (see Note 1): gone, locked
 Measuring Device Decontamination Procedure: gone, locked
 PI Meter ID: - Ambient Air: - ppm Well Mouth: - ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 2.9 gallons to purge
10.35 () .65 gal/ft (4 in)
 0.62 gal/ft (1.5 in)
 Purge Method (see Note 2): Dedicated bladder pump

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (umhos/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor:)
<u>0.95</u>	<u>1654</u>	<u>13.0</u>	<u>6.89</u>	<u>1.42</u>	<u>1.90</u>	
<u>1.90</u>	<u>1657</u>	<u>13.5</u>	<u>6.74</u>	<u>1.66</u>	<u>2.85</u>	
<u>2.85</u>	<u>1659</u>	<u>13.3</u>	<u>6.82</u>	<u>1.66</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): egg-like odor, suspended particulates

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
<u>VOL</u>	<u>8760</u>	<u>2 46 ml</u>	<u>-</u>	<u>HCL 1-1</u>	Y <u>(N) (P)</u>	N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

25 PSI
P 2:00
✓ 4:00

NAME (Print): Adam Gouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: S-27
 Sample Date: 10/24/98 12:10:48
 Sample Time: 1722

SITE/SAMPLE LOCATION

Site Name: Allied Signal South End Project No.: 9822-02
 Personnel Present: Adem bouda Peter Koczor
 Activity Start: 1710 Activity End: 1723
 Weather: Cloudy
 Well Type and Location: 1.5" PVC FL MNT

WATER LEVEL/WEEL DATA

Well Depth: 27.9 feet using Solinst Water Depth: 15.87 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: _____
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 2.2 gallons to purge
8.03 () .65 gal/ft (4 in)
 () .042 gal/ft (1.5 in)
 Purge Method (see Note 2): Dedicated bladder pump

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (umhos/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor):
<u>2.73</u>	<u>1715</u>	<u>11.9</u>	<u>7.09</u>	<u>1.13</u>	<u>1.46</u>	
<u>1.46</u>	<u>1717</u>	<u>12.5</u>	<u>6.92</u>	<u>1.11</u>	<u>2.2</u>	
<u>2.2</u>	<u>1719</u>	<u>12.4</u>	<u>6.97</u>	<u>1.12</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
<u>VOL</u>	<u>8260</u>	<u>2</u>	<u>---</u>	<u>HCL 1-1</u>	<u>Y</u>	<u>Y</u>
_____	_____	_____	_____	_____	<u>Y</u>	<u>N</u>
_____	_____	_____	_____	_____	<u>Y</u>	<u>N</u>
_____	_____	_____	_____	_____	<u>Y</u>	<u>N</u>
_____	_____	_____	_____	_____	<u>Y</u>	<u>N</u>

OTHER OBSERVATIONS

J - 2:30
R - 3:30
pg 2-25

NAME (Print): Adem bouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 20
 Sample Date: 12/8/98
 Sample Time: 1531

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1428 Activity End: _____
 Weather: Sunny 45'
 Well Type and Location: Sk. mat / ~~stuck~~ galvanized 1.5" stickup PVC

WATER LEVEL/WEEL DATA

Well Depth: 19.7 feet using 18# (from top of well casing) (measuring device)
 Water Depth: 18.47 feet using Solinst (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet (from ground surface)
 Protective Casing Stickup: _____ feet (for above-ground surface)
 Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 46.87 gallons to purge
169.97 () .65 gal/ft (4 in)
 () .092 gal/ft (1.5 in)
 Purge Method (see Note 2): B. Pump

Purge Vol. (gal)	15.62	30.10	46.87
Time (Min.)	1450	1518	1542
Temperature (C°)	12.1 12.1	13.2	12.6
pH (Units)	6.76	6.95	6.99
Conductivity at 25°C (mS/cm)	1.34	1.32	1.31
Total Volume Purged	gallons		
Water Appearance (describe color, clarity odor):	<u>clear slight eggy odor</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): B. Pump
 Sample Water Appearance (color, clarity, odor): Same as above

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>(N)</u>	Y <u>(Y)</u> N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

V - 3:00
P - 3:00
PSI - 42
 NAME (Print) Adam Gouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 4D
 Sample Date: 12/1/14 (PL)
 Sample Time: No Sample

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822 .02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: _____ Activity End: _____
 Weather: Sunny 40°
 Well Type and Location: 1.5" PVC manhole / In front of Boxh

WATER LEVEL/WELL DATA

Well Depth: 92.70 feet using 20.5 (measuring device) Water Depth: _____ feet using _____ (measuring device)
 (from top of well casing) (from top of well casing)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well Casing Difference: _____ feet
 (from ground surface) (for above-ground surface)
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): good, locked
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 47.52 gallons to purge
 () .65 gal/ft (4 in)
172.19 (✓) 0.92 gal/ft (1.5 in)
 Purge Method (see Note 2): D. bladder pump

Purge Vol. (gal)	<u>15.84</u>	<u>30.00</u>	<u>47.52</u>
Time (Min.)	_____	_____	_____
Temperature (C°)	_____	_____	_____
pH (Units)	_____	_____	_____
Conductivity at 25°C (mS/cm)	_____	_____	_____
Total Volume Purged	_____	_____	_____
Water Appearance (describe color, clarity, odor):	_____	_____	_____

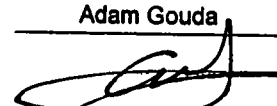
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): D. bladder pump
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2	_____	HCL 1-1	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/>
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N

OTHER OBSERVATIONS

unable to sample - water trickling out of pump
 NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 5-D
 Sample Date: 12/10/98
 Sample Time: 1440

SITE/SAMPLE LOCATION

Site Name: Allred Signal S.B. 1464
 Personnel Present: Aden Bouda Peter Kaczor
 Project No.: 9802.02
 Activity Start: 1320 Activity End: _____
 Weather: cloudy 75°
 Well Type and Location: 1.5" PVC

WATER LEVEL/WEI DATA

Well Depth: 192.2 feet using _____ (measuring device)
 Water Depth: 21.59 feet using Solinst (measuring device)
 Historical Well Depth: _____ feet
 Protective Casing Stickup: _____ feet (for above-ground surface)
 Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: _____
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) x 3 casing volumes = 47.0 gallons to purge
170.61 () .65 gal/ft (4 in)
 (x) .092 gal/ft (1.5 in)
 Purge Method (see Note 2): Dedicated bladder pump

Purge Vol. (gal)	15.69	31.0	47.0
Time (Min.)	1354	1411	1438
Temperature (C°)	13.1	10.8	10.6
pH (Units)	7.13	7.23	7.37
Conductivity at 25°C (umhos/cm)	1.31	1.31	1.34
Total Volume Purged	gallons		
Water Appearance (describe color, clarity odor)	<u>clear egg odor</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
<u>10L</u>	<u>9260</u>	<u>2</u>	<u>-</u>	<u>HCL 1-1</u>	<u>Y</u> <u>N</u>	<u>Y</u> <u>N</u>
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Aden Bouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 70
 Sample Date: 12/8/94
 Sample Time: 1311

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 11:20 Activity End: 1320
 Weather: Sunny 45°
 Well Type and Location: stick up

WATER LEVEL/ WELL DATA

Well Depth: 95.2 feet using HSTF (from top of well casing) (measuring device)
 Water Depth: 18.47 feet using Schist. (from top of well casing) (measuring device)
 Historical Well Depth: — feet (from ground surface)
 Protective Casing Stickup: — feet (for above-ground surface)
 Protect. Casing Well Casing Difference: — feet
 Floating Product Thickness: 0 feet using — (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: — Ambient Air: — ppm Well Mouth: — ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X 76.63 .16 gal/ft (2 in) X 3 casing volumes = 36.78 gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft () in
 Purge Method (see Note 2): B. pump

	<u>12.26</u>	<u>24.0</u>	<u>36.78</u>	
Purge Vol. (gal)	<u>12.26</u>	<u>24.0</u>	<u>36.78</u>	
Time (Min.)	<u>1206</u>	<u>1244</u>	<u>1312</u>	
Temperature (C°)	<u>13.4</u>	<u>12.9</u>	<u>14.0</u>	
pH (Units)	<u>6.90</u>	<u>6.98</u>	<u>7.96</u>	
Conductivity at 25°C (mS/cm)	<u>1.76</u>	<u>1.95</u>	<u>1.73</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):	<u>2.577 Bad/Yellow</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Bladder pump
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field		Cool to 4°C?
					Filtered?		
Voc	8260	2		HCL 1-1	Y	<input checked="" type="checkbox"/>	N
					Y	N	N
					Y	N	N
					Y	N	N
					Y	N	N

OTHER OBSERVATIONS

1 - 30104
P - 30104
PST - 32PST

NAME (Print) Adam Gouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 8D
 Sample Date: 12/8/98
 Sample Time: 1408

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1320 Activity End: 1420
 Weather: Sunny 45°
 Well Type and Location: Stickup 2" PVC

WATER LEVEL/WELL DATA

Well Depth: 59.5 feet using 18.14 (measuring device) Water Depth: 18.14 feet using Solinst (measuring device)
 Historical Well Depth: — feet Protective Casing Stickup: — feet Protect. Casing Well Casing Difference: — feet
 Floating Product Thickness: — feet using — (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: — Ambient Air: — ppm Well Mouth: — ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X 11.1 .16 gal/ft (2 in) X 3 casing volumes = 19.73 gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): Header Pump

Purge Vol. (gal)	6.5	12.5	19.73
Time (Min.)	1333	1353	410
Temperature (C°)	3.9	14.3	13.9
pH (Units)	7.00	6.98	7.02
Conductivity at 25°C (mS/cm)	1.70	1.69	1.66
Total Volume Purged	gallons		
Water Appearance (describe color, clarity odor):	<u>clear slight transmitt.</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): B. Pump
 Sample Water Appearance (color, clarity, odor): same as above

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

√ - 3:00
P = 2:45
PSS - 48

NAME (Print) Adam Gouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES *Collected*

GROUNDWATER SAMPLE RECORD *Dup MW-102*

Sample No.: D-5
 Sample Date: 12/10/98
 Sample Time: 1302

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 640 Activity End: _____
 Weather: Dark cold 25°
 Well Type and Location: 4" galvanized stick-up

WATER LEVEL/WELL DATA

Well Depth: 86.8 feet using _____ (from top of well casing) (measuring device) _____
 Water Depth: 15.61 feet using Schinst (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet (from ground surface) Protective Casing Stickup: _____ feet (for above-ground surface) Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 333 gallons to purge
171.19 () 4 .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Dedicated bladder pump

Purge Vol. (gal)	<u>111.2</u>	<u>222</u>	<u>333</u>	
Time (Min.)	<u>844</u>	<u>1119</u>	<u>1300</u>	
Temperature (C°)	<u>2.3</u>	<u>12.6</u>	<u>12.5</u>	
pH (Units)	<u>6.70</u>	<u>7.44</u>	<u>7.42</u>	
Conductivity at 25°C (mS/cm)	<u>.424</u>	<u>.418</u>	<u>.432</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):	<u>Clear</u>			

SAMPLING PROCEDURES

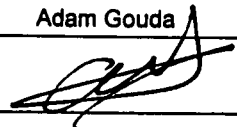
Sampling Procedure (see Note 2): Dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>(N)</u> <u>(Y)</u>	N
					Y N Y N	N
					Y N Y N	N
					Y N Y N	N

OTHER OBSERVATIONS

V-3:00
P-3:00
PS-40

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 0-7
 Sample Date: 12/8/98
 Sample Time: 10:57

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.12
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 750am Activity End: 1100
 Weather: cloudy + 40°
 Well Type and Location: stick up

WATER LEVEL/WELL DATA

Well Depth: 78.40 feet using Level (from top of well casing) (measuring device)
 Water Depth: 16.80 feet using Solinst (from top of well casing) (measuring device)
 Historical Well Depth: — feet (from ground surface) Protective Casing Stickup: — feet (for above-ground surface) Protect. Casing Well Casing Difference: — feet
 Floating Product Thickness: 0 feet using — (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: — Ambient Air: — ppm Well Mouth: — ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 120gal gallons to purge
61.6 () .65 gal/ft (4 in)
 () gal/ft () in
 Purge Method (see Note 2): Bladder pump

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (mS/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor:)
<u>40gal</u>	<u>9:16</u>	<u>12.4</u>	<u>6.34</u>	<u>.565</u>	<u>40</u> gallons	<u>clear</u>
<u>80gal</u>	<u>10:22</u>	<u>13.2</u>	<u>7.10</u>	<u>.524</u>	<u>80</u> gallons	<u>clear</u>
<u>120gal</u>	<u>10:54</u>	<u>12.19</u>	<u>7.35</u>	<u>.528</u>	<u>120</u> gallons	<u>clear</u>

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Bladder Pump
 Sample Water Appearance (color, clarity, odor): me 67 above

ANALYTICAL PARAMETERS

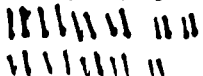
Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/>
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

V = 3 o'clock
 P = 3 o'clock
 PSI = 35

NAME (Print) Adam Gouda
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.



HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: E-3
 Sample Date: 12/9/98
 Sample Time: 1115

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1115 Activity End: 1120
 Weather: Sunny 45°
 Well Type and Location: Naptha Recovery well

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using _____ Water Depth: 22.48 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using Solinst
 (measuring device)
 Well Condition (see Note 1): ok purging
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X _____ casing volumes = 5.0 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): turn on spigot purge 5 gallons.

Purge Vol. (gal) 5.0
 Time (Min.) 1117
 Temperature (C°) 14.3
 pH (Units) 6.91
 Conductivity at 25°C (mS/cm) 1.34
 Total Volume Purged 5 gal gallons
 Water Appearance (describe color, clarity odor): see c) below

SAMPLING PROCEDURES

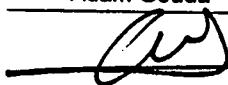
Sampling Procedure (see Note 2): Turn on spigot
 Sample Water Appearance (color, clarity, odor): water has sheen, strong eggy odor

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

8.5 GPM

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 12W016
 Sample Date: 12/6/98
 Sample Time: 1101

Dup taken MW-101

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822.02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1100 Activity End: _____
 Weather: _____
 Well Type and Location: Naptha Recovery well

WATER LEVEL/WELL DATA

Well Depth: _____ feet using _____ (measuring device)
 Water Depth: 18.91 feet using Solinst (measuring device)
 Historical Well Depth: _____ feet (from ground surface)
 Protective Casing Stickup: _____ feet (for above-ground surface)
 Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: 0 feet using Solinst (measuring device)
 Well Condition (see Note 1): ok, pumping
 Measuring Device Decontamination Procedure: Liquinox DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X _____ casing volumes = 5.0 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): turn on spigot for 5gall purge
 Purge Vol. (gal) 5.0
 Time (Min.) 102
 Temperature (C°) 13.4
 pH (Units) 6.95
 Conductivity at 25°C (mS/cm) 1.30
 Total Volume Purged 5.0 gallons
 Water Appearance (describe color, clarity odor): _____

SAMPLING PROCEDURES

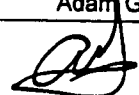
Sampling Procedure (see Note 2): turned on spigot for 5 gallon Drain then filled VOA
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>N</u>	<u>Y</u> N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

166pm

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-101
 Sample Date: 12/9/98
 Sample Time: _____

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822 .02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: _____ Activity End: _____
 Weather: _____
 Well Type and Location: _____

WATER LEVEL/WELL DATA

Well Depth: _____ feet using _____ Water Depth: _____ feet using _____
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____
 (measuring device)
 Well Condition (see Note 1): _____
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X _____ casing volumes = _____ gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): _____
 Purge Vol. (gal) _____
 Time (Min.) _____
 Temperature (C°) _____
 pH (Units) _____
 Conductivity at 25°C (mS/cm) _____
 Total Volume Purged _____ gallons
 Water Appearance (describe color, clarity odor): _____

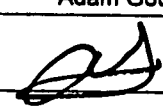
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): _____
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="radio"/> N <input type="radio"/>	Y <input checked="" type="radio"/> N <input type="radio"/>
					Y <input type="radio"/> N <input type="radio"/>	Y <input type="radio"/> N <input type="radio"/>
					Y <input type="radio"/> N <input type="radio"/>	Y <input type="radio"/> N <input type="radio"/>
					Y <input type="radio"/> N <input type="radio"/>	Y <input type="radio"/> N <input type="radio"/>

OTHER OBSERVATIONS
Dup of RW B16

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

RWB 22

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: ~~12-112~~
Sample Date: 12/9/98
Sample Time: 1125

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend
Personnel Present: Adam gouda, Pete Kaczor
Activity Start: 1119 Activity End: 1130
Weather: sun 45°
Well Type and Location: 0 Project No.: 9822.02

WATER LEVEL/WELL DATA

Well Depth: _____ feet using _____ (from top of well casing) (measuring device)
Water Depth: 19.67 feet using Solinst (from top of well casing) (measuring device)
Historical Well Depth: _____ feet (from ground surface)
Protective Casing Stickup: _____ feet (for above-ground surface)
Protect. Casing Well Casing Difference: _____ feet
Floating Product Thickness: 0.49 feet using Solinst (measuring device)
Well Condition (see Note 1): Oh pumpg 106PM
Measuring Device Decontamination Procedure: Liquinox-DI water
PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
Column feet X () .16 gal/ft (2 in) X _____ casing volumes = 5.0 gallons to purge
() .65 gal/ft (4 in)
() _____ gal/ft (_____ in)
Purge Method (see Note 2): turn on spigot purge 5.0 gal into bucket

Purge Vol. (gal) 5.0
Time (Min.) 1122
Temperature (C°) 14.2
pH (Units) 6.91
Conductivity at 25°C (mS/cm) 1.87
Total Volume Purged _____ gallons
Water Appearance (describe color, clarity odor): opaque, grey, eggy odor

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): turn on spigot after purge
Sample Water Appearance (color, clarity, odor): (see c) above

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

106PM
NAME (Print) Adam Gouda
SIGNATURE:

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
(2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: EW-1
 Sample Date: 12-8-98
 Sample Time: 1740

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822 .02
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1730 Activity End: 1750
 Weather: 40% clear
 Well Type and Location: 6" extraction well

WATER LEVEL/WELL DATA

Well Depth: _____ feet using Solinst Water Depth: 19.35 feet using _____
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____
 (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X _____ casing volumes = 3 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Sample port in 24" diameter manhole. open spigot
drain 3 gallons
 Purge Vol. (gal) _____
 Time (Min.) 1738
 Temperature (C°) 13.2
 pH (Units) 6.37
 Conductivity at 25°C (mS/cm) 1.63
 Total Volume Purged 5 gallons
 Water Appearance (describe color, clarity odor): clear

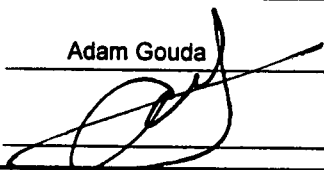
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Sample port into container
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>(N)</u> <u>(Y)</u>	N
					Y N Y N	N
					Y N Y N	N
					Y N Y N	N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: EW-2
 Sample Date: 12/9/98
 Sample Time: 10:30

SITE/SAMPLE LOCATION

Site Name Allied signal- South Bend Project No.: 9822 .12
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1030 Activity End: 1040
 Weather: Sunny 45°
 Well Type and Location: fl. mat / manhole

WATER LEVEL/WELL DATA

Well Depth: _____ feet using _____ Water Depth: 17.42 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X _____ casing volumes = 5 gal gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Sample port in 24" diameter manhole, open
slight draw 5 gal
 Purge Vol. (gal) 5 gal
 Time (Min.) 10:35
 Temperature (C°) 12.8
 pH (Units) 6.71
 Conductivity at 25°C (mS/cm) 1.07
 Total Volume Purged 5.0 gallons
 Water Appearance (describe color, clarity odor): same as below

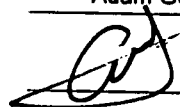
SAMPLING PROCEDURES

Sampling Procedure (see Note 2): spicet purge
 Sample Water Appearance (color, clarity, odor): translucent / light grey

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>N</u>	<u>Y</u> N
					Y N	Y N
					Y N	Y N
					Y N	Y N
					Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Adam Gouda
 SIGNATURE: 

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: ~~EW-3~~ EW-3
 Sample Date: 12/8/98
 Sample Time: 1755

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: 1749 Activity End: 1830
 Weather: Sunny 40°
 Well Type and Location: manhole 6" steel fl. mant.
 Project No.: 9822 02

WATER LEVEL/WELL DATA

Well Depth: feet using (measuring device)
 Water Depth: feet using Solinst (measuring device)
 Historical Well Depth: feet (from ground surface)
 Protective Casing Stickup: feet (for above-ground surface)
 Protect. Casing Well Casing Difference: feet
 Floating Product Thickness: feet using (measuring device)
 Well Condition (see Note 1): good
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: Ambient Air: ppm Well Mouth: ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): open spigot + drain 5 gallons then sample

Purge Vol. (gal) 4753.5
 Time (Min.) 1753.7 (P)
 Temperature (C°) 16.7
 pH (Units) 6.75
 Conductivity at 25°C (mS/cm) 1.51
 Total Volume Purged 5 gallons
 Water Appearance (describe color, clarity odor): clear

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): open spigot to sample
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2		HCL 1-1	Y <u>(N)</u>	<u>(Y)</u> N
					Y N	Y N
					Y N	Y N
					Y N	Y N

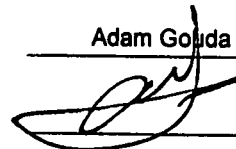
OTHER OBSERVATIONS

1-2 gpm

NAME (Print)

Adam Gouda

SIGNATURE:



Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-200
 Sample Date: 12-9-98
 Sample Time: 0730

SITE/SAMPLE LOCATION

Site Name: Allied signal- South Bend Project No.: 9822
 Personnel Present: Adam gouda, Pete Kaczor
 Activity Start: _____ Activity End: _____
 Weather: _____
 Well Type and Location: _____

WATER LEVEL/WELL DATA

Well Depth: _____ feet using _____ (measuring device)
(from top of well casing)
 Water Depth: _____ feet using _____ (measuring device)
(from top of well casing)
 Historical Well Depth: _____ feet (from ground surface)
 Protective Casing Stickup: _____ feet (for above-ground surface)
 Protect. Casing Well Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): _____
 Measuring Device Decontamination Procedure: Liquinox-DI water
 PI Meter ID: _____ Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .041 gal/ft (1 in)
 Column feet X () .16 gal/ft (2 in) X _____ casing volumes = _____ gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): _____

Purge Vol. (gal)	_____	_____	_____	_____
Time (Min.)	_____	_____	_____	_____
Temperature (C°)	_____	_____	_____	_____
pH (Units)	_____	_____	_____	_____
Conductivity at 25°C (mS/cm)	_____	_____	_____	_____
Total Volume Purged	_____	_____	_____	_____ gallons
Water Appearance (describe color, clarity odor):	_____			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): pour distilled water into bailer, then from bailer to sample containers
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Bottle Lot	Preservative/ Volume	Field Filtered?	Cool to 4°C?
Voc	8260	2	_____	HCL 1-1	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	_____	Y N	Y N

OTHER OBSERVATIONS

equipment blank
of stainless steel bailer.

NAME (Print) Adam Gouda
 SIGNATURE: _____

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

ANALYTICAL RESULTS - DECEMBER 1998

- **SHALLOW MONITORING WELLS**
- **INTERMEDIATE MONITORING WELLS**
- **DEEP MONITORING WELLS**
- **NAPHTHA RECOVERY WELLS**
- **VOC RECOVERY WELLS**

SHALLOW MONITORING WELLS

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	7-25	86-10	86-15	9-33	MW-10
RESULT	TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary
Acrolein			< 100	< 100	< 100	< 100	< 100
Acrylonitrile			< 100	< 100	< 100	< 100	< 100
Benzene	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromoform	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromomethane			< 10	< 10	< 10	< 10	< 10
Carbon tetrachloride	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorodibromomethane	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane			< 10	< 10	< 10	< 10	< 10
2-Chloroethyl Vinyl Ether			< 10	< 10	< 10	< 10	< 10
Chloroform	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloromethane			< 10	< 10	< 10	< 10	< 10
Dichlorobromomethane	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dichlorodifluoromethane			< 10	< 10	< 10	< 10	< 10
1,1-Dichloroethane			< 5.0	< 5.0	< 5.0	< 5.0	64
1,2-Dichloroethane	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	7		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene	100		< 5.0	10	68	< 5.0	31
cis-1,2-Dichloroethene	70		< 5.0	[81]	40	< 5.0	[700]
1,2-Dichloropropane	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,3-Dichloropropene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethyl benzene	700		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE DATE	7-25	86-10	86-15	9-33	MW-10
			12/12/98	12/12/98	12/12/98	12/12/98	12/13/98
			RESULT TYPE	US-PMCL	Primary	Primary	Primary
Toluene	1000		<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	200		<5.0	<5.0	<5.0	<5.0	[210]
1,1,2-Trichloroethane	5		<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene	5		<5.0	[79]	[390]	<5.0	[500]
Trichlorofluoromethane			<10	<10	<10	<10	<10
Vinyl Chloride	2		<10	<10	<10	<10	<10
Acetone			<100	<100	<100	<100	<100
2-Butanone (MEK)			<100	<100	<100	<100	<100
Styrene	100		<5.0	<5.0	<5.0	<5.0	<5.0
Xylene (Total)	10000		<10	<10	<10	<10	<10
Vinyl Acetate			<50	<50	<50	<50	<50
2-Hexanone			<50	<50	<50	<50	<50
4-Methyl-2-pentanone			<50	<50	<50	<50	<50
Carbon disulfide			<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichlorobenzene	600		<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene	600		<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene	75		<5.0	<5.0	<5.0	<5.0	<5.0

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[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	MW-12	MW-13	MW-2	MW-2	MW-4
			12/13/98	12/13/98	12/13/98	12/13/98	12/14/98
			Primary	Primary	Primary	Duplicate	Primary
Acrolein			< 100	< 100	< 500	< 500	< 100
Acrylonitrile			< 100	< 100	< 500	< 500	< 100
Benzene		5	< 5.0	< 5.0	< 25	< 25	< 5.0
Bromoform		100	< 5.0	< 5.0	< 25	< 25	< 5.0
Bromomethane			< 10	< 10	< 50	< 50	< 10
Carbon tetrachloride		5	< 5.0	< 5.0	< 25	< 25	< 5.0
Chlorobenzene		100	< 5.0	< 5.0	< 25	< 25	< 5.0
Chlorodibromomethane		100	< 5.0	< 5.0	< 25	< 25	< 5.0
Chloroethane			< 10	< 10	< 50	< 50	< 10
2-Chloroethyl Vinyl Ether			< 10	< 10	< 50	< 50	< 10
Chloroform		100	< 5.0	< 5.0	< 25	< 25	< 5.0
Chloromethane			< 10	< 10	< 50	< 50	< 10
Dichlorobromomethane		100	< 5.0	< 5.0	< 25	< 25	< 5.0
Dichlorodifluoromethane			< 10	< 10	< 50	< 50	< 10
1,1-Dichloroethane			< 5.0	< 5.0	240	250	< 5.0
1,2-Dichloroethane		5	< 5.0	< 5.0	[32]	[33]	< 5.0
1,1-Dichloroethene		7	< 5.0	< 5.0	[28] J	[38]	< 5.0
trans-1,2-Dichloroethene		100	7.7	< 5.0	38	39	< 5.0
cis-1,2-Dichloroethene		70	[88]	< 5.0	[3000]	[3200]	< 5.0
1,2-Dichloropropane		5	< 5.0	< 5.0	< 25	< 25	< 5.0
cis-1,3-Dichloropropene			< 5.0	< 5.0	< 25	< 25	< 5.0
trans-1,3-Dichloropropene			< 5.0	< 5.0	< 25	< 25	< 5.0
Ethyl benzene		700	< 5.0	< 5.0	< 25	< 25	< 5.0
Methylene chloride		5	< 5.0	< 5.0	[38] JB	[49]	< 5.0
1,1,2,2-Tetrachloroethane			< 5.0	< 5.0	< 25	< 25	< 5.0
Tetrachloroethene		5	< 5.0	< 5.0	< 25	< 25	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		MW-12	MW-13	MW-2	MW-2	MW-4
		DATE		12/13/98	12/13/98	12/13/98	12/13/98	12/14/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary	Duplicate	Primary
Toluene		1000		< 5.0	< 5.0	< 25	< 25	< 5.0
1,1,1-Trichloroethane		200		< 5.0	< 5.0	[700] J	< 25	< 5.0
1,1,2-Trichloroethane		5		< 5.0	< 5.0	< 25	< 25	< 5.0
Trichloroethene		5		[35]	< 5.0	[40]	[44]	[15]
Trichlorofluoromethane				< 10	< 10	< 50	< 50	< 10
Vinyl Chloride		2		< 10	< 10	[100]	[110]	< 10
Acetone				< 100	< 100	< 500	< 500	< 100
2-Butanone (MEK)				< 100	< 100	< 500	< 500	< 100
Styrene		100		< 5.0	< 5.0	< 25	< 25	< 5.0
Xylene (Total)		10000		< 10	< 10	< 50	< 50	< 10
Vinyl Acetate				< 50	< 50	< 250	< 250	< 50
2-Hexanone				< 50	< 50	< 250	< 250	< 50
4-Methyl-2-pentanone				< 50	< 50	< 250	< 250	< 50
Carbon disulfide				< 5.0	< 5.0	< 25	< 25	< 5.0
1,2-Dichlorobenzene		600		< 5.0	< 5.0	< 25	< 25	< 5.0
1,3-Dichlorobenzene		600		< 5.0	< 5.0	< 25	< 25	< 5.0
1,4-Dichlorobenzene		75		< 5.0	< 5.0	< 25	< 25	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-5	MW-7	MW-9	S15	S16
RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary	Primary
Acrolein			< 100	< 100	< 100	< 100	< 100
Acrylonitrile			< 100	< 100	< 100	< 100	< 100
Benzene	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromoform	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromomethane			< 10	< 10	< 10	< 10	< 10
Carbon tetrachloride	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorodibromomethane	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane			< 10	< 10	< 10	< 10	< 10
2-Chloroethyl Vinyl Ether			< 10	< 10	< 10	< 10	< 10
Chloroform	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloromethane			< 10	< 10	< 10	< 10	< 10
Dichlorobromomethane	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dichlorodifluoromethane			< 10	< 10	< 10	< 10	< 10
1,1-Dichloroethane			< 5.0	14	< 5.0	13	< 5.0
1,2-Dichloroethane	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	7		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene	100		< 5.0	< 5.0	< 5.0	5.3	26
cis-1,2-Dichloroethene	70		12	[340]	< 5.0	16	54
1,2-Dichloropropane	5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,3-Dichloropropene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethyl benzene	700		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride	5		< 5.0	< 5.0	< 5.0	< 5.0	[15]
1,1,2,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5		[6.7]	< 5.0	< 5.0	< 5.0	< 5.0

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[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		MW-5	MW-7	MW-9	S15	S16
		DATE		12/14/98	12/14/98	12/14/98	12/14/98	12/14/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary
Toluene		1000		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane		200		10	< 5.0	< 5.0	< 5.0	20
1,1,2-Trichloroethane		5		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene		5		[28]	< 5.0	< 5.0	< 5.0	[420]
Trichlorofluoromethane				< 10	< 10	< 10	< 10	< 10
Vinyl Chloride		2		[11]	[130]	< 10	[29]	< 10
Acetone				< 100	< 100	< 100	< 100	< 100
2-Butanone (MEK)				< 100	< 100	< 100	< 100	< 100
Styrene		100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylene (Total)		10000		< 10	< 10	< 10	< 10	< 10
Vinyl Acetate				< 50	< 50	< 50	< 50	< 50
2-Hexanone				< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone				< 50	< 50	< 50	< 50	< 50
Carbon disulfide				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene		600		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene		600		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene		75		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		S17	S20	S21	S22	S23
		DATE		12/14/98	12/14/98	12/14/98	12/14/98	12/14/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary
Acrolein				< 100	< 100	< 100	< 100	< 100
Acrylonitrile				< 100	< 100	< 100	< 100	< 100
Benzene	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromoform	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromomethane				< 10	< 10	< 10	< 10	< 10
Carbon tetrachloride	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorodibromomethane	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane				< 10	< 10	< 10	< 10	< 10
2-Chloroethyl Vinyl Ether				< 10	< 10	< 10	< 10	< 10
Chloroform	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloromethane				< 10	< 10	< 10	< 10	< 10
Dichlorobromomethane	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dichlorodifluoromethane				< 10	< 10	< 10	< 10	< 10
1,1-Dichloroethane				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	7			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene	100			< 5.0	< 5.0	13	86	< 5.0
cis-1,2-Dichloroethene	70			< 5.0	< 5.0	22	59	< 5.0
1,2-Dichloropropane	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,3-Dichloropropene				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethyl benzene	700			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2,2-Tetrachloroethane				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	S17	S20	S21	S22	S23
			12/14/98	12/14/98	12/14/98	12/14/98	12/14/98
			Primary	Primary	Primary	Primary	Primary
Toluene		1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane		200	22	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene		5	[18]	< 5.0	[25]	< 5.0	[9.8]
Trichlorofluoromethane			< 10	< 10	< 10	< 10	< 10
Vinyl Chloride		2	< 10	< 10	< 10	< 10	< 10
Acetone			< 100	< 100	< 100	< 100	< 100
2-Butanone (MEK)			< 100	< 100	< 100	< 100	< 100
Styrene		100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylene (Total)		10000	< 10	< 10	< 10	< 10	< 10
Vinyl Acetate			< 50	< 50	< 50	< 50	< 50
2-Hexanone			< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone			< 50	< 50	< 50	< 50	< 50
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene		600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene		600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene		75	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		S24	S25	S27	S3	S4A
		DATE		12/14/98	12/14/98	12/14/98	12/14/98	12/14/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary
Acrolein				< 100	< 100	< 100	< 100	< 100
Acrylonitrile				< 100	< 100	< 100	< 100	< 100
Benzene	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromoform	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromomethane				< 10	< 10	< 10	< 10	< 10
Carbon tetrachloride	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorodibromomethane	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane				< 10	< 10	< 10	< 10	< 10
2-Chloroethyl Vinyl Ether				< 10	< 10	< 10	< 10	< 10
Chloroform	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloromethane				< 10	< 10	< 10	< 10	< 10
Dichlorobromomethane	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dichlorodifluoromethane				< 10	< 10	< 10	< 10	< 10
1,1-Dichloroethane				< 5.0	< 5.0	50	< 5.0	33
1,2-Dichloroethane	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	7			< 5.0	< 5.0	[9.9]	< 5.0	< 5.0
trans-1,2-Dichloroethene	100			[150]	< 5.0	16	< 5.0	6.8
cis-1,2-Dichloroethene	70			[100]	5.2	29	< 5.0	[260]
1,2-Dichloropropane	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,3-Dichloropropene				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethyl benzene	700			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride	5			< 5.0	< 5.0	< 5.0	< 5.0	[11]
1,1,2,2-Tetrachloroethane				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	S24	S25	S27	S3	S4A
			12/14/98	12/14/98	12/14/98	12/14/98	12/14/98
			Primary	Primary	Primary	Primary	Primary
Toluene		1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane		200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene		5	[10]	< 5.0	[32]	< 5.0	< 5.0
Trichlorofluoromethane			< 10	< 10	< 10	< 10	< 10
Vinyl Chloride		2	< 10	< 10	< 10	< 10	< 10
Acetone			< 100	< 100	< 100	< 100	< 100
2-Butanone (MEK)			< 100	< 100	< 100	< 100	< 100
Styrene		100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylene (Total)		10000	< 10	< 10	< 10	< 10	< 10
Vinyl Acetate			< 50	< 50	< 50	< 50	< 50
2-Hexanone			< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone			< 50	< 50	< 50	< 50	< 50
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene		600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene		600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene		75	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	S9
	DATE	12/14/98
	RESULT TYPE	US-PMCL
		Primary
Acrolein		< 100
Acrylonitrile		< 100
Benzene	5	< 5.0
Bromoform	100	< 5.0
Bromomethane		< 10
Carbon tetrachloride	5	< 5.0
Chlorobenzene	100	< 5.0
Chlorodibromomethane	100	< 5.0
Chloroethane		< 10
2-Chloroethyl Vinyl Ether		< 10
Chloroform	100	< 5.0
Chloromethane		< 10
Dichlorobromomethane	100	< 5.0
Dichlorodifluoromethane		< 10
1,1-Dichloroethane		< 5.0
1,2-Dichloroethane	5	[240]
1,1-Dichloroethene	7	< 5.0
trans-1,2-Dichloroethene	100	< 5.0
cis-1,2-Dichloroethene	70	[92]
1,2-Dichloropropane	5	< 5.0
cis-1,3-Dichloropropene		< 5.0
trans-1,3-Dichloropropene		< 5.0
Ethyl benzene	700	< 5.0
Methylene chloride	5	[6.8] BJ
1,1,2,2-Tetrachloroethane		< 5.0
Tetrachloroethene	5	< 5.0

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 For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S9
		DATE	12/14/98
	RESULT TYPE	US-PMCL	Primary
Toluene	1000		< 5.0
1,1,1-Trichloroethane	200		< 5.0
1,1,2-Trichloroethane	5		< 5.0
Trichloroethene	5		< 5.0
Trichlorofluoromethane			< 10
Vinyl Chloride	2		< 10
Acetone			< 100
2-Butanone (MEK)			< 100
Styrene	100		< 5.0
Xylene (Total)	10000		< 10
Vinyl Acetate			< 50
2-Hexanone			< 50
4-Methyl-2-pentanone			< 50
Carbon disulfide			< 5.0
1,2-Dichlorobenzene	600		< 5.0
1,3-Dichlorobenzene	600		< 5.0
1,4-Dichlorobenzene	75		< 5.0

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INTERMEDIATE MONITORING WELLS

Analytical Summary - VOCs In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	7D		8D	
			DATE	12/12/98	DATE	12/12/98
RESULT TYPE	US-PMCL		Primary		Primary	
Acrolein			< 100		< 100	
Acrylonitrile			< 100		< 100	
Benzene	5		< 5.0		< 5.0	
Bromoform	100		< 5.0		< 5.0	
Bromomethane			< 10		< 10	
Carbon tetrachloride	5		< 5.0		< 5.0	
Chlorobenzene	100		< 5.0		< 5.0	
Chlorodibromomethane	100		< 5.0		< 5.0	
Chloroethane			< 10		< 10	
2-Chloroethyl Vinyl Ether			< 10		< 10	
Chloroform	100		< 5.0		< 5.0	
Chloromethane			< 10		< 10	
Dichlorobromomethane	100		< 5.0		< 5.0	
Dichlorodifluoromethane			< 10		< 10	
1,1-Dichloroethane			< 5.0		< 5.0	
1,2-Dichloroethane	5		< 5.0		< 5.0	
1,1-Dichloroethene	7		< 5.0		< 5.0	
trans-1,2-Dichloroethene	100		< 5.0		32	
cis-1,2-Dichloroethene	70		26		[220]	
1,2-Dichloropropane	5		< 5.0		< 5.0	
cis-1,3-Dichloropropene			< 5.0		< 5.0	
trans-1,3-Dichloropropene			< 5.0		< 5.0	
Ethyl benzene	700		< 5.0		< 5.0	
Methylene chloride	5		< 5.0		[7.2] B	
1,1,2,2-Tetrachloroethane			< 5.0		< 5.0	
Tetrachloroethene	5		< 5.0		< 5.0	

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For RCL VOC

Analytical Summary - VOCs In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	7D	8D
				12/12/98	12/12/98
				Primary	Primary
Toluene			1000	< 5.0	< 5.0
1,1,1-Trichloroethane			200	< 5.0	< 5.0
1,1,2-Trichloroethane			5	< 5.0	< 5.0
Trichloroethene			5	[5.8]	< 5.0
Trichlorofluoromethane				< 10	< 10
Vinyl Chloride			2	< 10	< 10
Acetone				< 100	< 100
2-Butanone (MEK)				< 100	< 100
Styrene			100	< 5.0	< 5.0
Xylene (Total)			10000	< 10	< 10
Vinyl Acetate				< 50	< 50
2-Hexanone				< 50	< 50
4-Methyl-2-pentanone				< 50	< 50
Carbon disulfide				< 5.0	< 5.0
1,2-Dichlorobenzene			600	< 5.0	< 5.0
1,3-Dichlorobenzene			600	< 5.0	< 5.0
1,4-Dichlorobenzene			75	< 5.0	< 5.0

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For RCL VOC

DEEP MONITORING WELLS

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	2D	5D	D5	D5	D7
				12/12/98	12/13/98	12/12/98	12/12/98	12/13/98
				Primary	Primary	Primary	Duplicate	Primary
Acrolein				< 100	< 100	< 100	< 100	< 100
Acrylonitrile				< 100	< 100	< 100	< 100	< 100
Benzene			5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromoform			100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromomethane				< 10	< 10	< 10	< 10	< 10
Carbon tetrachloride			5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene			100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorodibromomethane			100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane				< 10	< 10	< 10	< 10	< 10
2-Chloroethyl Vinyl Ether				< 10	< 10	< 10	< 10	< 10
Chloroform			100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloromethane				< 10	< 10	< 10	< 10	< 10
Dichlorobromomethane			100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dichlorodifluoromethane				< 10	< 10	< 10	< 10	< 10
1,1-Dichloroethane				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane			5	[7.8]	< 5.0	< 5.0	< 5.0	[23]
1,1-Dichloroethene			7	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene			100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene			70	18	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloropropane			5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,3-Dichloropropene				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethyl benzene			700	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride			5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2,2-Tetrachloroethane				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene			5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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For RCL VOC

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	2D	5D	D5	D5	D7
				12/12/98	12/13/98	12/12/98	12/12/98	12/13/98
				Primary	Primary	Primary	Duplicate	Primary
Toluene			1000	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane			5	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene			5	<5.0	<5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane				<10	<10	<10	<10	<10
Vinyl Chloride			2	<10	<10	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
2-Butanone (MEK)				<100	<100	<100	<100	<100
Styrene			100	<5.0	<5.0	<5.0	<5.0	<5.0
Xylene (Total)			10000	<10	<10	<10	<10	<10
Vinyl Acetate				<50	<50	<50	<50	<50
2-Hexanone				<50	<50	<50	<50	<50
4-Methyl-2-pentanone				<50	<50	<50	<50	<50
Carbon disulfide				<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichlorobenzene			600	<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene			600	<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene			75	<5.0	<5.0	<5.0	<5.0	<5.0

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NAPHTHA RECOVERY WELLS

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	E3	RWB16	RWB16	RWB22
				12/13/98	12/14/98	12/14/98	12/14/98
				Primary	Primary	Duplicate	Primary
Acrolein				< 100	< 100	< 100	< 100
Acrylonitrile				< 100	< 100	< 100	< 100
Benzene			5	< 5.0	[71]	[70]	< 5.0
Bromoform			100	< 5.0	< 5.0	< 5.0	< 5.0
Bromomethane				< 10	< 10	< 10	< 10
Carbon tetrachloride			5	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene			100	< 5.0	< 5.0	< 5.0	< 5.0
Chlorodibromomethane			100	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane				< 10	11	11	< 10
2-Chloroethyl Vinyl Ether				< 10	< 10	< 10	< 10
Chloroform			100	< 5.0	< 5.0	< 5.0	< 5.0
Chloromethane				< 10	< 10	< 10	< 10
Dichlorobromomethane			100	< 5.0	< 5.0	< 5.0	< 5.0
Dichlorodifluoromethane				< 10	< 10	< 10	< 10
1,1-Dichloroethane				5.3	< 5.0	< 5.0	5.2
1,2-Dichloroethane			5	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene			7	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene			100	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene			70	19	< 5.0	< 5.0	18
1,2-Dichloropropane			5	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene				< 5.0	< 5.0	< 5.0	< 5.0
trans-1,3-Dichloropropene				< 5.0	< 5.0	< 5.0	< 5.0
Ethyl benzene			700	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride			5	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2,2-Tetrachloroethane				< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene			5	< 5.0	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		E3	RWB16	RWB16	RWB22
		DATE	RESULT TYPE	12/13/98	12/14/98	12/14/98	12/14/98
			US-PMCL	Primary	Primary	Duplicate	Primary
Toluene		1000		< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane		200		< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		5		< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene		5		< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane				< 10	< 10	< 10	< 10
Vinyl Chloride		2		< 10	< 10	< 10	< 10
Acetone				< 100	< 100	< 100	< 100
2-Butanone (MEK)				< 100	< 100	< 100	< 100
Styrene		100		< 5.0	< 5.0	< 5.0	< 5.0
Xylene (Total)		10000		< 10	< 10	< 10	< 10
Vinyl Acetate				< 50	< 50	< 50	< 50
2-Hexanone				< 50	< 50	< 50	< 50
4-Methyl-2-pentanone				< 50	< 50	< 50	< 50
Carbon disulfide				< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene		600		< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene		600		< 5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene		75		< 5.0	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

VOC RECOVERY WELLS

Analytical Summary - VOCs In Groundwater
VOC Recovery Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	EW-1	EW-2	EW-3
					12/13/98	12/13/98	12/13/98
					Primary	Primary	Primary
Acrolein					< 100	< 100	< 100
Acrylonitrile					< 100	< 100	< 100
Benzene	5				< 5.0	< 5.0	< 5.0
Bromoform	100				< 5.0	< 5.0	< 5.0
Bromomethane					< 10	< 10	< 10
Carbon tetrachloride	5				< 5.0	< 5.0	< 5.0
Chlorobenzene	100				< 5.0	< 5.0	< 5.0
Chlorodibromomethane	100				< 5.0	< 5.0	< 5.0
Chloroethane					< 10	< 10	< 10
2-Chloroethyl Vinyl Ether					< 10	< 10	< 10
Chloroform	100				< 5.0	< 5.0	< 5.0
Chloromethane					< 10	< 10	< 10
Dichlorobromomethane	100				< 5.0	< 5.0	< 5.0
Dichlorodifluoromethane					< 10	< 10	< 10
1,1-Dichloroethane					26	43	< 5.0
1,2-Dichloroethane	5				[6.3]	< 5.0	< 5.0
1,1-Dichloroethene	7				5.8	5.8	< 5.0
trans-1,2-Dichloroethene	100				69	28	94
cis-1,2-Dichloroethene	70				[240]	[180]	43
1,2-Dichloropropane	5				< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene					< 5.0	< 5.0	< 5.0
trans-1,3-Dichloropropene					< 5.0	< 5.0	< 5.0
Ethyl benzene	700				< 5.0	< 5.0	< 5.0
Methylene chloride	5				[5.9] B	< 5.0	< 5.0
1,1,2,2-Tetrachloroethane					< 5.0	< 5.0	< 5.0
Tetrachloroethene	5				< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	DATE	EW-1	EW-2	EW-3
				12/13/98	12/13/98	12/13/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary
Toluene	1000			< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane	200			< 5.0	33	< 5.0
1,1,2-Trichloroethane	5			< 5.0	< 5.0	< 5.0
Trichloroethene	5			[180]	[68]	[34]
Trichlorofluoromethane				< 10	< 10	< 10
Vinyl Chloride	2			[27]	< 10	< 10
Acetone				< 100	< 100	< 100
2-Butanone (MEK)				< 100	< 100	< 100
Styrene	100			< 5.0	< 5.0	< 5.0
Xylene (Total)	10000			< 10	< 10	< 10
Vinyl Acetate				< 50	< 50	< 50
2-Hexanone				< 50	< 50	< 50
4-Methyl-2-pentanone				< 50	< 50	< 50
Carbon disulfide				< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene	600			< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	600			< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	75			< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL VOC

SHALLOW MONITORING WELLS

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	DATE	7-25	7-25	7-25	7-25	7-25
				03/18/97	06/03/97	07/18/97	09/25/97	12/08/97
RESULT TYPE	US-PMCL			Primary	Primary	Primary	Primary	Primary
Benzene	5			<5	<5	<5	<5.0	<5.0
Chloroethene	2			<10	<2	(1.2)	<10	<10
Chloroform	100			<5	<5	<5	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5	<5.0	<5.0
1,2-Dichloroethane	5			<5	<5	<5	<5.0	<5.0
1,1-Dichloroethene	7			<5	<5	<5	<5.0	<5.0
trans-1,2-Dichloroethene	100			<5	<5	<5	<5.0	<5.0
cis-1,2-Dichloroethene	70			<5	<5	<5	<5.0	<5.0
Methylene chloride	5			<5	<5	<5	<5.0	<5.0
Tétrachloroéthène	5			<5	<5	<5	<5.0	<5.0
Toluene	1000			<5	<5	<5	<5.0	<5.0
1,1,1-Trichloroethane	200			<5	<5	<5	<5.0	<5.0
Trichloroethene	5			<5	<5	<5	<5.0	<5.0
Vinyl Chloride	2			<10	<2	(1.2)	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)	10000			<10	<5	<5	<10	<10
Carbon disulfide				<5	<5	<5	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

() = Less than Reporting Limit

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	7-25	7-25
				06/09/98	12/12/98
				Primary	Primary
Benzene			5	< 5.0	< 5.0
Chloroethene			2	< 10	< 10
Chloroform			100	< 5.0	< 5.0
1,1-Dichloroethane				< 5.0	< 5.0
1,2-Dichloroethane			5	< 5.0	< 5.0
1,1-Dichloroethene			7	< 5.0	< 5.0
trans-1,2-Dichloroethene			100	< 5.0	< 5.0
cis-1,2-Dichloroethene			70	< 5.0	< 5.0
Methylene chloride			5	< 5.0	< 5.0
Tetrachloroethene			5	< 5.0	< 5.0
Toluene			1000	< 5.0	< 5.0
1,1,1-Trichloroethane			200	< 5.0	< 5.0
Trichloroethene			5	< 5.0	< 5.0
Vinyl Chloride			2	< 10	< 10
Acetone				< 100	< 100
Xylene (Total)			10000	< 10	< 10
Carbon disulfide				< 5.0	< 5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	7-25	7-25
		DATE	03/18/97	09/25/97
		RESULT TYPE	US-PMCL	
Total Phenols			< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	7-25	
			03/18/97	09/25/97
RESULT TYPE	US-PMCL	Primary	Primary	
Cyanide	200	< 5	< 5	
Chromium, Dissolved (Filtered)		---	< 5	
Lead, Dissolved (Filtered)		---	< 2.0	
Nickel, Dissolved (Filtered)		---	< 20	
Chromium, Total	100	7	---	
Lead, Total	15	[27]	---	
Nickel, Total	100	< 20	---	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

SOURCE: 7-25

NOTES

DATE SAMPLED	SAMPLE NO.	LAB	MCL	NOTES
			METHOD	
11/07/86	31	AQUA		No VOC Detected
06/05/87	2	AQUA		No VOC Detected
09/08/87	2	AQUA		No VOC Detected
01/13/88	2	AQUA		No VOC Detected
02/08/88	2	AQUA		No VOC Detected
05/18/88	2	AQUA		No VOC Detected
09/22/88	2	AQUA		No VOC Detected
12/09/88	13	AQUA		No VOC Detected
03/31/92	22	AQUA	0240	No VOC Detected
09/02/92	43	AQUA	0240	No VOC Detected

NOTES:

OUR INTERPRETATIONS OF THESE DATA
ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION
LIMIT SPECIFIED BY
LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A
GCMS SCAN FOR PRIORITY POLLUTANT
VOLATILE ORGANIC COMPOUNDS FOR
EACH LOCATION AND SAMPLING DATE.
SEE LAB REPORT.

PARAMETER

o - Date
Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIED SIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

Hoagenson
associates

Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	86-10		86-10		86-10		86-10	
			DATE	03/18/97	06/05/97	09/25/97	12/09/97	06/11/98		
			RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary	
Benzene	5		<5	<5	<5.0 E	<5.0	<5.0		<5.0	
Chloroethene	2		<10	<2	<10 E	<10	<10		<10	
Chloroform	100		<5	<5	<5.0 E	<5.0	<5.0		<5.0	
1,1-Dichloroethane			<5	<5	<5.0 E	<5.0	<5.0		<5.0	
1,2-Dichloroethane	5		<5	<5	<5.0 E	<5.0	<5.0		<5.0	
1,1-Dichloroethene	7		<5	<5	<5.0 E	<5.0	<5.0		<5.0	
trans-1,2-Dichloroethene	100		9.6	12	12 J	12	12		9.1	
cis-1,2-Dichloroethene	70		[76]	[95]	[92] J	[98]	[98]		[71]	
Methylene chloride	5		<5	<5	<5.0 E	<5.0	<5.0		<5.0	
Tetrachloroethene	5		<5	<5	<5.0 E	<5.0	<5.0		<5.0	
Toluene	1000		<5	<5	<5.0 E	<5.0	<5.0		<5.0	
1,1,1-Trichloroethane	200		<5	<5	<5.0 E	<5.0	<5.0		<5.0	
Trichloroethene	5		[88]	[100]	[120] J	[120]	[120]		[63]	
Vinyl Chloride	2		<10	<2	<10 E	<10	<10		<10	
Acetone			<100	<100	<100 E	<100	<100		<100	
Xylene (Total)	10000		<10	<5	<10 E	<10	<10		<10	
Carbon disulfide			<5	<5	<5.0 E	<5.0	<5.0		<5.0	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	86-10
		DATE	12/12/98
		RESULT TYPE	US-PMCL
			Primary
Benzene		5	< 5.0
Chloroethene		2	< 10
Chloroform		100	< 5.0
1,1-Dichloroethane			< 5.0
1,2-Dichloroethane		5	< 5.0
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	10
cis-1,2-Dichloroethene		70	[81]
Methylene chloride		5	< 5.0
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	< 5.0
Trichloroethene		5	[79]
Vinyl Chloride		2	< 10
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	86-10	86-10	86-10
DATE	RESULT TYPE	US-PMCL	03/18/97	09/25/97	06/11/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	DATE	86-10	86-10	86-10
				03/18/97	09/25/97	06/11/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary
Cyanide	200	< 5	6	< 5		
Chromium, Dissolved (Filtered)		---	< 5			
Lead, Dissolved (Filtered)		---	< 2.0			
Nickel, Dissolved (Filtered)		---	< 20			
Chromium, Total	100	< 5	---			
Lead, Total	15	2.4	---			
Nickel, Total	100	< 20	---			

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 86-10		DATE COLLECTED		12 MAR 96		04 JUN 96		04 SEP 96		10 DEC 96	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	5.0	U					5.0	U				
	CHLOROETHANE	UG/L	10	U					10	U				5.0
	CHLOROFORM	UG/L	5.0	U					5.0	U				10
	1,1-DICHLOROETHANE	UG/L	5.0	U					5.0	U				5.0
	1,2-DICHLOROETHANE	UG/L	5.0	U	2.5	J			4.9	J				5.0
	1,1-DICHLOROETHENE	UG/L	5.0	U					5.0	U				5.0
	TRANS-1,2-DICHLOROETHENE	UG/L	16						5.0	U				5.0
	CIS-1,2-DICHLOROETHENE	UG/L	77		9.2				7.5				12	
	METHYLENE CHLORIDE	UG/L		5.0	75				78				88	
	TETRACHLOROETHENE	UG/L		5.0						5.0	U			5.0
	TOLUENE	UG/L		5.0						5.0	U			5.0
	1,1,1-TRICHLOROETHANE	UG/L	10							5.0	U			5.0
	TRICHLOROETHENE	UG/L	120		6.4				22				7.2	
	VINYL CHLORIDE	UG/L		10	94				120				100	
	ACETONE	UG/L		100						10	U			10
	XYLENE (TOTAL)	UG/L		10						100	U			100
	CARBON DISULFIDE	UG/L		5.0						10	U			10
	TOTAL VOCs:	UG/L	223		187.1				232.4				272.2	
E.METALS	CHROMIUM	UG/L		5						13				
	LEAD	UG/L	2.8							2.7				
	NICKEL	UG/L	11	J					5.4	J				
H.MISC	CYANIDE, TOTAL	UG/L		5						5	U			
	PHENOLS	UG/L		10						10	U			

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 86-10		DATE COLLECTED		08 DEC 94		15 MAR 95		08 JUN 95		19 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q		
A.VOA	BENZENE	UG/L		5 U												
	CHLOROETHANE	UG/L		10 U				5.0 U			5.0 U			5.0 U		5.0 U
	1,1-DICHLOROETHANE	UG/L		5 U				10 U			10 U			10 U		10 U
	1,2-DICHLOROETHANE	UG/L		5 U				5.0 U			3.3	J		2.1	J	5.0 U
	1,1-DICHLOROETHENE	UG/L		5 U				5.0 U			5.0 U			5.0 U		5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U				5.0 U			2.1	J		5.0 U		5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	18				16				15			11		16
	METHYLENE CHLORIDE	UG/L	90				78				95			75		81
	TETRACHLOROETHENE	UG/L		5 U				5.0 U			5.0 U			5.0 U		5.0 U
	TOLUENE	UG/L		-				5.0 U			5.0 U			5.0 U		5.0 U
	1,1,1-TRICHLOROETHANE	UG/L		5 U				5.0 U			5.0 U			5.0 U		5.0 U
	TRICHLOROETHENE	UG/L		5 U				5.0 U			3.6	J		4.0	J	5.0 U
	VINYL CHLORIDE	UG/L	141				35				95			100		53
	ACETONE	UG/L		10 U				10 U			2.2	J		10 U		10 U
	XYLENE (TOTAL)	UG/L		100 U				100 U			100 U			100 U		100 U
TOTAL VOCS:	UG/L		249			129				216.2			192.1		150	
E.METALS	LEAD	UG/L		-			-			-			1.4	J	-	
	LEAD (DISSOLVED)	UG/L		-			2.0 U			-			-		-	
E.METALS (DIS.)	NICKEL (DISSOLVED)	UG/L		-			20 U			-			-		-	
H.MISC	CYANIDE, TOTAL	UG/L		-			5 U			-			5 U		-	
	PHENOLS	UG/L		-			10 U			-			10 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: 86-10				1,1-DI- CHLORO- ETHANE	CIS-1,2- DICHLORO- ETHENE	TRANS-1,2- DICHLORO- ETHENE	1,1,1-TRI- CHLORO- ETHANE	TRI- CHLORO- ETHENE	VINYL CHLORIDE	SUM	NOTES	NOTES:
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	IDL UG/L	P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L	2 UG/L	UG/L		
08/02/86	7	ADJA		ND	ND	85.4	ND	308	ND	393		<p>OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.</p> <p>ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.</p> <p>NPL - ND U.S. EPA PUBLISHED LEVEL</p> <p>P - PROPOSED</p> <p>VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.</p>
10/10/86	18	ADJA		5.7	ND	130	89.7	440	ND	679		
02/24/89	22	ADJA		ND	100	41	ND	340	19.8	501		
06/08/89	10	ADJA	824	ND	87.3	35.3	ND	300	ND	403		
09/07/89	3	ADJA	8240	ND	75.7	35.1	15.5	230	16.3	373		
12/12/89	15	ADJA	8240	ND	92.4	48.8	ND	440	15.5	597		
02/28/90	7	ADJA	8240	ND	150	81.8	ND	270	22.1	504		
06/01/90	3	ADJA	8240	ND	81.7	48.5	ND	350	ND	490		
08/23/90	12	ADJA	8240	ND	55.2	30.8	ND	350	ND	436		
10/29/90	24	ADJA	8240	ND	87.4	39.7	10.4	327	ND	465		
03/01/91	14	ADJA	8240	21.2	88.9	48.2	6.0	330	ND	472		
05/31/91	6	ADJA	8240	ND	85.2	78.6	16.9	342.5	ND	523		
08/10/91	18	ADJA	8240	ND	42.4	21.5	32.6	282	ND	379		
11/13/91	10	ADJA	8240	ND	57.3	28.1	15.4	270	ND	371		
01/23/92	7	ADJA	8240	5.8	53.7	24.0	14.5	243	ND	341		
01/23/92	8	ADJA	8240	6.1	53.9	24.7	13.5	240	ND	346		
04/01/92	25	ADJA	8240	ND	47.7	18.0	15.1	246	ND	327		
08/21/92	5	ADJA	8240	ND	64.1	20.1	45.7	272	ND	402		
11/02/92	35	ADJA	8240	9.3	61.9	18.5	61.0	191	ND	342		
02/03/93	23	ADJA	8240	ND	90.2	21.8	17.9	224	ND	354		
05/12/93	21	ADJA	8240	ND	91.8	24.0	12.0	225	ND	353		
09/01/93	21	ADJA	8240	ND	76.4	15.8	ND	143	ND	235		
12/02/93	15	ADJA	8240	5.7	115	32.8	29.1	255	ND	437		
02/18/94	16	ADJA	8240	ND	39.7	23.7	ND	102	ND	165		
05/08/94	23	ADJA	8240	ND	78.8	12.5	27.1	158	ND	277		
08/15/94	18	ADJA	8240	8.7	88.1	10.8	82.7	171	ND	333		

PARAMETER

o - Date
Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

adgleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	86-15	86-15	86-15	86-15	86-15
					03/18/97	06/05/97	06/05/97	09/25/97	12/09/97
					Primary	Primary	Duplicate	Primary	Primary
Benzene	5				<5	<5	<5	<5.0	<5.0
Chloroethene	2				<10	<2	<2	<10	<10
Chloroform	100				<5	<5	<5	<5.0	<5.0
1,1-Dichloroethane					<5	<5	<5	<5.0	<5.0
1,2-Dichloroethane	5				<5	<5	<5	<5.0	<5.0
1,1-Dichloroethene	7				<5	<5	<5	<5.0	<5.0
trans-1,2-Dichloroethene	100				60	58	53	48	50
cis-1,2-Dichloroethene	70				35	38	33	32	33
Methylene chloride	5				<5	<5	<5	<5.0	<5.0
Tetrachloroethene	5				<5	<5	<5	<5.0	<5.0
Toluene	1000				<5	<5	<5	<5.0	<5.0
1,1,1-Trichloroethane	200				<5	<5	<5	<5.0	<5.0
Trichloroethene	5				[330]	[330]	[290]	[260]	[290]
Vinyl Chloride	2				<10	<2	<2	<10	<10
Acetone					<100	<100	<100	<100	<100
Xylene (Total)	10000				<10	<5	<5	<10	<10
Carbon disulfide					<5	<5	<5	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	86-15	
			DATE	86-15
RESULT TYPE	US-PMCL	06/11/98	12/12/98	
		Primary	Primary	
Benzene	5	< 5.0	< 5.0	
Chloroethene	2	< 10	< 10	
Chloroform	100	< 5.0	< 5.0	
1,1-Dichloroethane		< 5.0	< 5.0	
1,2-Dichloroethane	5	< 5.0	< 5.0	
1,1-Dichloroethene	7	< 5.0	< 5.0	
trans-1,2-Dichloroethene	100	86	68	
cis-1,2-Dichloroethene	70	57	40	
Methylene chloride	5	< 5.0	< 5.0	
Tetrachloroethene	5	< 5.0	< 5.0	
Toluene	1000	< 5.0	< 5.0	
1,1,1-Trichloroethane	200	< 5.0	< 5.0	
Trichloroethene	5	[350]	[390]	
Vinyl Chloride	2	< 10	< 10	
Acetone		< 100	< 100	
Xylene (Total)	10000	< 10	< 10	
Carbon disulfide		< 5.0	< 5.0	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	86-15	86-15	86-15
DATE	03/18/97	09/25/97	06/11/98	
RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols		< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	86-15	86-15	86-15
			03/18/97	09/25/97	06/11/98
RESULT TYPE			Primary	Primary	Primary
Cyanide		200	< 5	< 5	< 5
Chromium, Dissolved (Filtered)			---	< 5	---
Lead, Dissolved (Filtered)			---	< 2.0	---
Nickel, Dissolved (Filtered)			---	< 20	---
Chromium, Total		100	< 5	---	---
Lead, Total		15	6.4	---	---
Nickel, Total		100	< 20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 86-15 DATE COLLECTED						
			08 DEC 94 AMOUNT Q	15 MAR 95 AMOUNT Q	08 JUN 95 AMOUNT Q	19 SEP 95 AMOUNT Q	05 DEC 95 AMOUNT Q		
A.VOA	BENZENE	UG/L	25 U	13 U					
	CHLOROETHANE	UG/L	50 U	25 U	25 U		25 U	25 U	
	1,1-DICHLOROETHANE	UG/L	25 U	13 U	3.2 J		50 U	50 U	
	1,2-DICHLOROETHANE	UG/L	25 U	13 U	25 U		25 U	25 U	
	1,1-DICHLOROETHENE	UG/L	25 U	13 U	25 U		25 U	25 U	
	TRANS-1,2-DICHLOROETHENE	UG/L	25 U	13 U	3.4 J		25 U	25 U	
	CIS-1,2-DICHLOROETHENE	UG/L	47	35	18 J		25 U	25 U	
	METHYLENE CHLORIDE	UG/L	61	230	99 J		45	38	
	TETRACHLOROETHENE	UG/L	25 U		4.0 J		59	37	
	TOLUENE	UG/L	-		13 U			25 U	25 U
	1,1,1-TRICHLOROETHANE	UG/L	25 U		13 U	25 U		25 U	25 U
	TRICHLOROETHENE	UG/L	43		13 U	25 U		25 U	25 U
	VINYL CHLORIDE	UG/L	625	470	7.2 J		6.5 J		25 U
	ACETONE	UG/L	138	60	290		440		310
	XYLENE (TOTAL)	UG/L	500 U	250 U	44 J		50 U		50 U
	TOTAL VOCs:	UG/L	914	795	500 U	50 U	550.5		385
	E.METALS	LEAD	UG/L	-	-	-	3.8		-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-	2.3	-	-		-	
	NICKEL (DISSOLVED)	UG/L	-	22	-	-		-	
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-	-	5 U	-	
	PHENOLS	UG/L	-	10 U	-	-	10 U	-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: 86-15				1, 1-DI- CHLORO- ETHANE	CIS-1, 2- DICHLORO- ETHENE	TRANS-1, 2 DICHLORO- ETHENE	1, 1, 1-TRI CHLORO- ETHANE	TRICHLORO- ETHENE	VINYL CHLORIDE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	1PPL UG/L	P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L	2 UG/L	UG/L	
08/02/86	4	AQUA		ND	ND	48.1	64.9	1620	ND	1733	
10/10/86	13	AQUA		ND	ND	33.7	38.0	1280	ND	1352	
02/24/89	24	AQUA		ND	ND	9.2	9.1	400	ND	418	
06/08/89	9	AQUA	824	ND	18.2	33.5	7.6	600	ND	659	
09/07/89	2	AQUA	8240	ND	20.8	36.0	ND	470	ND	527	
12/12/89	14	AQUA	8240	ND	12.2	20.5	10.6	440	ND	483	
02/28/90	8	AQUA	8240	ND	16.5	32.7	11.8	520	ND	581	
06/01/90	2	AQUA	8240	ND	6.7	11.8	10.8	390	ND	419	
08/23/90	11	AQUA	8240	ND	ND	6.1	7.6	370	ND	384	
10/29/90	23	AQUA	8240	ND	8.8	10.8	11.2	404	ND	435	
03/01/91	13	AQUA	8240	6.1	7.9	13.9	10.1	322	ND	360	
05/31/91	5	AQUA	8240	ND	ND	39.1	ND	449.6	ND	490	
08/30/91	15	AQUA	8240	ND	8.4	13.0	8.8	323	ND	354	
11/13/91	8	AQUA	8240	ND	12.5	14.2	7.4	381	ND	415	
11/13/91	9	AQUA	8240	ND	10.4	15.2	7.1	345	ND	370	
01/23/92	6	AQUA	8240	5.6	12.1	21.3	11.5	350	ND	401	
04/01/92	25	AQUA	8240	ND	11.9	21.1	7.5	404	ND	445	
06/21/92	4	AQUA	8240	ND	20.9	18.2	8.8	546	11.1	605	
11/02/92	34	AQUA	8240	ND	28.6	34.1	7.6	408	ND	478	
11/02/92	35	AQUA	8240	ND	28.7	33.4	8.3	376	ND	446	
02/05/93	22	AQUA	8240	ND	33.1	36.2	7.0	440	ND	516	
05/12/93	19	AQUA	8240	ND	28.7	34.1	6.8	364	ND	434	
05/12/93	20	AQUA	8240	ND	33.9	40.9	7.8	383	ND	466	
09/01/93	28	AQUA	8240	7.3	47.4	41.6	8.1	373	ND	477	
12/02/93	14	AQUA	8240	ND	76.1	53.9	ND	891	ND	1021	
02/10/94	15	AQUA	8240	ND	39.7	31.1	ND	374	ND	445	
05/06/94	21	AQUA	8240	ND	31.8	37.8	ND	370	ND	440	
05/06/94	22	AQUA	8240	ND	37.2	36.3	ND	344	ND	418	
09/15/94	17	AQUA	8240	ND	84.5	82.0	ND	575	109	801	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

MPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedsignal
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	9-33	9-33	9-33	9-33	9-33
					03/19/97	06/04/97	09/26/97	09/26/97	06/10/98
					Primary	Primary	Primary	Duplicate	Primary
Benzene				5	< 5	< 5	< 5.0	< 5.0	< 5.0
Chloroethene				2	< 10	< 2	< 10	< 10	< 10
Chloroform				100	< 5	< 5	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane					< 5	< 5	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane				5	< 5	< 5	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene				7	< 5	< 5	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene				100	< 5	< 5	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene				70	< 5	< 5	< 5.0	< 5.0	< 5.0
Methylene chloride				5	< 5	< 5	< 5.0	< 5.0	< 5.0
Tetrachloroethene				5	< 5	< 5	< 5.0	< 5.0	< 5.0
Toluene				1000	< 5	< 5	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane				200	< 5	< 5	< 5.0	< 5.0	< 5.0
Trichloroethene				5	< 5	< 5	< 5.0	< 5.0	< 5.0
Vinyl Chloride				2	< 10	< 2	< 10	< 10	< 10
Acetone					< 100	< 100	< 100	< 100	< 100
Xylene (Total)				10000	< 10	< 5	< 10	< 10	< 10
Carbon disulfide					< 5	< 5	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	9-33 12/12/98 Primary
Benzene			5	<5.0
Chloroethene			2	<10
Chloroform			100	<5.0
1,1-Dichloroethane				<5.0
1,2-Dichloroethane			5	<5.0
1,1-Dichloroethene			7	<5.0
trans-1,2-Dichloroethene			100	<5.0
cis-1,2-Dichloroethene			70	<5.0
Methylene chloride			5	<5.0
Tetrachloroethene			5	<5.0
Toluene			1000	<5.0
1,1,1-Trichloroethane			200	<5.0
Trichloroethene			5	<5.0
Vinyl Chloride			2	<10
Acetone				<100
Xylene (Total)			10000	<10
Carbon disulfide				<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	9-33	9-33	9-33	9-33	
		DATE	03/19/97	09/26/97	09/26/97	06/10/98	
		RESULT TYPE	US-PMCL	Primary	Primary	Duplicate	Primary
Total Phenols			10	< 10	< 10	< 10	
<p>Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed</p> <p>For RCL PHENOLS</p>							

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	9-33	9-33	9-33	9-33
			DATE	DATE	DATE	DATE
RESULT TYPE			Primary	Primary	Duplicate	Primary
Cyanide		200	< 5	< 5	< 5	< 5
Chromium, Dissolved (Filtered)			---	< 5	< 5	---
Lead, Dissolved (Filtered)			---	< 2.0	< 2.0	---
Nickel, Dissolved (Filtered)			---	< 20	< 20	---
Chromium, Total		100	< 5	---	---	---
Lead, Total		15	< 2	---	---	---
Nickel, Total		100	< 20	---	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 9-33 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	10 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	5.0 U	5.0 U
	CHLOROFORM	UG/L	5.0 U	10 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	ACETONE	UG/L	10 U	10 U	10 U	10 U
	XYLENE (TOTAL)	UG/L	100 U	100 U	100 U	100 U
	CARBON DISULFIDE	UG/L	10 U	10 U	10 U	10 U
		UG/L	5.0 U	5.0 U	5.0 U	5.0 U
TOTAL VOCS:		UG/L	0	0	0	0
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	1.0 J	-	1.3 J	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 9-33		DATE COLLECTED				
			07 DEC 94	13 MAR 95	06 JUN 95	20 SEP 95	06 DEC 95		
			AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
A.VOA	BENZENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	METHYLENE CHLORIDE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	12	J	10 U	10 U	10 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
	TOTAL VOCS:	UG/L	0	0	12	0	0	0	0
E.METALS	LEAD	UG/L	-	-	-	4.2	-	-	-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-	2.0 U	-	-	-	-	-
	NICKEL (DISSOLVED)	UG/L	-	20 U	-	-	-	-	-
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-	-	5 U	-	-
	PHENOLS	UG/L	-	10 U	-	-	10 U	-	-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: 9-33				NOTES	
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD		
01/08/87	11	AQUA		No VOC Detected	
05/05/87	3	AQUA		No VOC Detected	
09/03/87	3	AQUA		No VOC Detected	
01/13/88	3	AQUA		No VOC Detected	
02/19/88	31	AQUA		No VOC Detected	
03/18/88	3	AQUA		No VOC Detected	
09/22/88	3	AQUA		No VOC Detected	
12/09/88	15	AQUA		No VOC Detected	
02/22/89	4	AQUA		No VOC Detected	
05/10/89	35	AQUA	024	No VOC Detected	
09/07/89	4	AQUA	0240	No VOC Detected	
12/17/89	32	AQUA	0240	No VOC Detected	
02/18/90	5	AQUA	0240	No VOC Detected	
05/04/90	33	AQUA	0240	No VOC Detected	
06/04/90	34	AQUA	0240	No VOC Detected	
06/22/90	2	AQUA	0240	No VOC Detected	
10/27/90	3	AQUA	0240	No VOC Detected	
02/28/91	11	AQUA	0240	No VOC Detected	
05/01/91	24	AQUA	0240	No VOC Detected	
08/29/91	11	AQUA	0240	No VOC Detected	
11/12/91	5	AQUA	0240	No VOC Detected	
01/23/92	12	AQUA	0240	No VOC Detected	
04/01/92	32	AQUA	0240	No VOC Detected	
08/22/92	11	AQUA	0240	No VOC Detected	
02/04/93	8	AQUA	0240	No VOC Detected	
02/18/93	1	AQUA	0240	No VOC Detected	
05/11/93	12	AQUA	0240	No VOC Detected	
05/11/93	13	AQUA	0240	No VOC Detected	
08/31/93	2	AQUA	0240	No VOC Detected	
12/02/93	19	AQUA	0240	No VOC Detected	
02/17/94	7	AQUA	0240	No VOC Detected	
05/05/94	12	AQUA	0240	No VOC Detected	
05/05/94	13	AQUA	0240	No VOC Detected	
09/14/94	9	AQUA	0240	No VOC Detected	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

NO RESULT FOR 10/92 SAMPLING EPISODE DUE TO LAB ERROR.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIED SIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

At a gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-1	MW-1	MW-1	MW-1
				03/18/97	06/05/97	09/26/97	12/10/97
				Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5	<5	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10
Acetone				<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-1	MW-1	
		DATE	03/18/97	09/26/97	
		RESULT TYPE	US-PMCL	Primary	Primary
Total Phenols			< 10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	MW-1	MW-1
			03/18/97	09/26/97
RESULT TYPE			Primary	Primary
Cyanide		200	<5	<5
Chromium, Dissolved			---	---
Lead, Dissolved			---	---
Nickel, Dissolved			---	---
Chromium, Total		100	30 J	---
Lead, Total		15	[19] J	---
Nickel, Total		100	[140]	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-2	MW-2	MW-2	MW-2	MW-2
					03/18/97	06/05/97	09/26/97	12/09/97	06/12/98
					Primary	Primary	Primary	Primary	Primary
Benzene	5			5	< 130	< 5	< 25	< 10	< 20
Chloroethene	2			2	< 250	< 2	[70]	[83]	[93]
Chloroform	100			100	< 130	< 5	< 25	< 10	< 20
1,1-Dichloroethane					< 130	260	190	110	220
1,2-Dichloroethane	5			5	< 130	< 5	[49]	< 10	< 20
1,1-Dichloroethene	7			7	< 130	< 5	< 25	< 10	< 20
trans-1,2-Dichloroethene	100			100	< 130	< 5	< 25	14	27
cis-1,2-Dichloroethene	70			70	[2400]	[3500]	[2600]	[950]	[2100]
Methylene chloride	5			5	< 130	< 5	< 25	< 10	< 20
Tetrachloroethene	5			5	< 130	< 5	< 25	< 10	< 20
Toluene	1000			1000	< 130	< 5	< 25	< 10	< 20
1,1,1-Trichloroethane	200			200	[880]	[960]	[500]	[240]	[490]
Trichloroethene	5			5	[170]	< 5	[36]	[19]	[51]
Vinyl Chloride	2			2	< 250	< 2	[70]	[83]	[93]
Acetone					< 2500	< 100	< 500	< 200	< 400
Xylene (Total)	10000			10000	< 250	< 5	< 50	< 20	< 40
Carbon disulfide					< 130	< 5	< 25	< 10	< 20

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[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		MW-2	MW-2
		DATE		12/13/98	12/13/98
		RESULT TYPE	US-PMCL	Primary	Duplicate
Benzene			5	< 25	< 25
Chloroethene			2	[100]	[110]
Chloroform			100	< 25	< 25
1,1-Dichloroethane				240	250
1,2-Dichloroethane			5	[32]	[33]
1,1-Dichloroethene			7	[28] J	[38]
trans-1,2-Dichloroethene			100	38	39
cis-1,2-Dichloroethene			70	[3000]	[3200]
Methylene chloride			5	[38] JB	[49]
Tetrachloroethene			5	< 25	< 25
Toluene			1000	< 25	< 25
1,1,1-Trichloroethane			200	[700] J	< 25
Trichloroethene			5	[40]	[44]
Vinyl Chloride			2	[100]	[110]
Acetone				< 500	< 500
Xylene (Total)			10000	< 50	< 50
Carbon disulfide				< 25	< 25

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For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	MW-2	MW-2	MW-2
		DATE		03/18/97	09/26/97	06/12/98
		RESULT TYPE		Primary	Primary	Primary
Total Phenols				< 10	10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-2	MW-2	MW-2
		DATE	03/18/97	09/26/97	06/12/98
	RESULT TYPE	US-PMCL	Primary	Primary	Primary
Cyanide	200		< 5	< 5	< 5
Chromium, Dissolved			---	---	7.8
Lead, Dissolved			---	---	< 2.0
Nickel, Dissolved			---	---	< 20
Chromium, Total	100		< 5	---	---
Lead, Total	15		12	---	---
Nickel, Total	100		< 20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-3	MW-3	MW-3	MW-3	MW-3
					03/18/97	03/18/97	06/05/97	09/26/97	12/10/97
					Primary	Duplicate	Primary	Primary	Primary
Benzene	5			5	< 5	< 5	< 5	< 5.0	< 5.0
Chloroethene	2			2	< 10	< 10	< 2	< 10	< 10
Chloroform	100			100	< 5	< 5	< 5	< 5.0	< 5.0
1,1-Dichloroethane					< 5	< 5	< 5	5.0	5.1
1,2-Dichloroethane	5			5	< 5	< 5	< 5	< 5.0	< 5.0
1,1-Dichloroethene	7			7	< 5	< 5	< 5	< 5.0	< 5.0
trans-1,2-Dichloroethene	100			100	< 5	< 5	< 5	< 5.0	< 5.0
cis-1,2-Dichloroethene	70			70	38	39	50	57	60
Methylene chloride	5			5	< 5	< 5	< 5	< 5.0	< 5.0
Tetrachloroethene	5			5	< 5	< 5	< 5	< 5.0	< 5.0
Toluene	1000			1000	< 5	< 5	< 5	< 5.0	< 5.0
1,1,1-Trichloroethane	200			200	< 5	< 5	7.6	8.6	6.9
Trichloroethene	5			5	[6.2]	[6]	[6.0]	[8.4]	[5.7]
Vinyl Chloride	2			2	< 10	< 10	< 2	< 10	< 10
Acetone					< 100	< 100	< 100	< 100	< 100
Xylene (Total)	10000			10000	< 10	< 10	< 5	< 10	< 10
Carbon disulfide					< 5	< 5	< 5	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-3
		DATE	12/10/97
		RESULT TYPE	Duplicate
		US-PMCL	
Benzene		5	< 5.0
Chloroethene		2	< 10
Chloroform		100	< 5.0
1,1-Dichloroethane			5.2
1,2-Dichloroethane		5	< 5.0
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	< 5.0
cis-1,2-Dichloroethene		70	62
Methylene chloride		5	< 5.0
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	7.1
Trichloroethene		5	[5.8]
Vinyl Chloride		2	< 10
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

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[I] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-3	MW-3	MW-3	
		DATE	03/18/97	03/18/97	09/26/97	
		RESULT TYPE	US-PMCL	Primary	Duplicate	Primary
Total Phenols			< 10	< 10	< 10	

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For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	MW-3 03/18/97	MW-3 03/18/97	MW-3 09/26/97
	RESULT TYPE		Primary	Duplicate	Primary
Cyanide		200	< 5	< 5	< 5
Chromium, Dissolved			---	---	---
Lead, Dissolved			---	---	---
Nickel, Dissolved			---	---	---
Chromium, Total		100	9.8	20	---
Lead, Total		15	3.6	[19]	---
Nickel, Total		100	< 20	< 20	---

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For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-4	MW-4	MW-4	MW-4	MW-4
				03/18/97	06/04/97	09/26/97	12/10/97	06/12/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	5.6	6.5	7.8
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	11	5.4	10	5.2	6.9
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	[13]	[17]	[20]	[21]	[7.0]
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

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For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-4 12/14/98 Primary
Benzene			5	<5.0
Chloroethene			2	<10
Chloroform			100	<5.0
1,1-Dichloroethane				<5.0
1,2-Dichloroethane			5	<5.0
1,1-Dichloroethene			7	<5.0
trans-1,2-Dichloroethene			100	<5.0
cis-1,2-Dichloroethene			70	<5.0
Methylene chloride			5	<5.0
Tetrachloroethene			5	<5.0
Toluene			1000	<5.0
1,1,1-Trichloroethane			200	<5.0
Trichloroethene			5	[15]
Vinyl Chloride			2	<10
Acetone				<100
Xylene (Total)			10000	<10
Carbon disulfide				<5.0

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For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-4	MW-4	MW-4
DATE	US-PMCL	03/18/97	09/26/97	06/12/98	
RESULT TYPE		Primary	Primary	Primary	
Total Phenols		< 10	< 10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	MW-4	MW-4	MW-4
			03/18/97	09/26/97	06/12/98
RESULT TYPE			Primary	Primary	Primary
Cyanide		200	<5	<5	<5
Chromium, Dissolved			---	---	7.5
Lead, Dissolved			---	---	<2.0
Nickel, Dissolved			---	---	<20
Chromium, Total		100	[2770]	---	---
Lead, Total		15	[707]	---	---
Nickel, Total		100	[620]	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed
 [] = Greater than Action Level

For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-5	MW-5	MW-5	MW-5	MW-5
					03/18/97	06/05/97	09/26/97	12/10/97	06/12/98
					Primary	Primary	Primary	Primary	Primary
Benzene	5			5	< 5	< 5	< 5.0	< 5.0	< 5.0
Chloroethene	2			2	[13]	[12]	[13]	< 10	< 10
Chloroform	100			100	< 5	< 5	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane					< 5	< 5	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane	5			5	< 5	< 5	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	7			7	< 5	< 5	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene	100			100	< 5	< 5	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene	70			70	9.8	11	11	11	7.4
Methylene chloride	5			5	< 5	< 5	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5			5	[5.8]	[8.4]	[13]	[8.8]	[6.8]
Toluene	1000			1000	< 5	< 5	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane	200			200	9	11	16	33	8.9
Trichloroethene	5			5	[24]	[28]	[42]	[18]	[24]
Vinyl Chloride	2			2	[13]	[12]	[13]	< 10	< 10
Acetone					< 100	< 100	< 100	< 100	< 100
Xylene (Total)	10000			10000	< 10	< 5	< 10	< 10	< 10
Carbon disulfide					< 5	< 5	< 5.0	< 5.0	< 5.0

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For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-5 12/14/98 Primary
Benzene			5	<5.0
Chloroethene			2	[11]
Chloroform			100	<5.0
1,1-Dichloroethane				<5.0
1,2-Dichloroethane			5	<5.0
1,1-Dichloroethene			7	<5.0
trans-1,2-Dichloroethene			100	<5.0
cis-1,2-Dichloroethene			70	12
Methylene chloride			5	<5.0
Tetrachloroethene			5	[6.7]
Toluene			1000	<5.0
1,1,1-Trichloroethane			200	10
Trichloroethene			5	[28]
Vinyl Chloride			2	[11]
Acetone				<100
Xylene (Total)			10000	<10
Carbon disulfide				<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-5	MW-5	MW-5	
		DATE	03/18/97	09/26/97	06/12/98	
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	MW-5	MW-5	MW-5
			03/18/97	09/26/97	06/12/98
			Primary	Primary	Primary
Cyanide		200	< 5	< 5	< 5
Chromium, Dissolved			---	---	< 5
Lead, Dissolved			---	---	< 2.0
Nickel, Dissolved			---	---	< 20
Chromium, Total		100	[290]	---	---
Lead, Total		15	[152]	---	---
Nickel, Total		100	92	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-7	MW-7	MW-7	MW-7	MW-7
				03/18/97	06/05/97	09/25/97	12/09/97	06/12/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	[63]	[120]	[81]	[95]	[110]
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				15	28	19	16	21
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	[230]	[350]	[290]	[270]	[300]
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	[63]	[120]	[81]	[95]	[110]
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-7
		DATE	12/14/98
		RESULT TYPE	US-PMCL
			Primary
Benzene		5	<5.0
Chloroethene		2	[130]
Chloroform		100	<5.0
1,1-Dichloroethane			14
1,2-Dichloroethane		5	<5.0
1,1-Dichloroethene		7	<5.0
trans-1,2-Dichloroethene		100	<5.0
cis-1,2-Dichloroethene		70	[340]
Methylene chloride		5	<5.0
Tetrachloroethene		5	<5.0
Toluene		1000	<5.0
1,1,1-Trichloroethane		200	<5.0
Trichloroethene		5	<5.0
Vinyl Chloride		2	[130]
Acetone			<100
Xylene (Total)		10000	<10
Carbon disulfide			<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[I] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-7	MW-7	MW-7	
		DATE	03/18/97	09/25/97	06/12/98	
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-7	MW-7	MW-7
			DATE	DATE	DATE
RESULT TYPE	US-PMCL	Primary	Primary	Primary	
Cyanide	200	<5	<5	<5	
Chromium, Dissolved		---	---	5.9	
Lead, Dissolved		---	---	<2.0	
Nickel, Dissolved		---	---	<20	
Chromium, Total	100	75	---	---	
Lead, Total	15	[85]	---	---	
Nickel, Total	100	[110]	---	---	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-8	MW-8
				03/18/97	06/05/97
				Primary	Primary
Benzene			5	< 5	< 5
Chloroethene			2	[14]	< 2
Chloroform			100	< 5	< 5
1,1-Dichloroethane				330	440
1,2-Dichloroethane			5	< 5	< 5
1,1-Dichloroethene			7	5.3	< 5
trans-1,2-Dichloroethene			100	9	< 5
cis-1,2-Dichloroethene			70	[1000]	[1400]
Methylene chloride			5	< 5	< 5
Tetrachloroethene			5	[19]	< 5
Toluene			1000	< 5	< 5
1,1,1-Trichloroethane			200	7.6	< 5
Trichloroethene			5	[78]	[140]
Vinyl Chloride			2	[14]	< 2
Acetone				< 100	< 100
Xylene (Total)			10000	< 10	< 5
Carbon disulfide				< 5	< 5

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For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-8
DATE	03/18/97	RESULT TYPE	US-PMCL
Primary			
Total Phenols	3100		

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	MW-8
	DATE		03/18/97
	RESULT TYPE		Primary
Cyanide		200	6
Chromium, Dissolved			---
Lead, Dissolved			---
Nickel, Dissolved			---
Chromium, Total		100	<5
Lead, Total		15	12
Nickel, Total		100	[150]

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-9 03/18/97	MW-9 06/03/97	MW-9 09/25/97	MW-9 12/08/97	MW-9 06/11/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	[6.2]
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

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For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-9	MW-9
				09/18/98	12/14/98
				Primary	Primary
Benzene			5	< 5.0	< 5.0
Chloroethene			2	< 10	< 10
Chloroform			100	< 5.0	< 5.0
1,1-Dichloroethane				< 5.0	< 5.0
1,2-Dichloroethane			5	< 5.0	< 5.0
1,1-Dichloroethene			7	< 5.0	< 5.0
trans-1,2-Dichloroethene			100	< 5.0	< 5.0
cis-1,2-Dichloroethene			70	< 5.0	< 5.0
Methylene chloride			5	< 5.0	< 5.0
Tetrachloroethene			5	< 5.0	< 5.0
Toluene			1000	< 5.0	< 5.0
1,1,1-Trichloroethane			200	< 5.0	< 5.0
Trichloroethene			5	< 5.0	< 5.0
Vinyl Chloride			2	< 10	< 10
Acetone				< 100	< 100
Xylene (Total)			10000	< 10	< 10
Carbon disulfide				< 5.0	< 5.0

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Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-9	MW-9	MW-9	
		DATE	03/18/97	09/25/97	06/11/98	
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols			80	20	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	MW-9	MW-9	MW-9
			DATE	DATE	DATE
			RESULT TYPE	RESULT TYPE	RESULT TYPE
			03/18/97	09/25/97	06/11/98
			Primary	Primary	Primary
Cyanide		200	9	30	< 5
Chromium, Dissolved			---	---	7.2
Lead, Dissolved			---	---	< 2.0
Nickel, Dissolved			---	---	20
Chromium, Total		100	82	---	---
Lead, Total		15	[48]	---	---
Nickel, Total		100	[100]	---	---

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[] = Greater than Action Level

For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-10	
			06/11/98	12/13/98
DATE	RESULT TYPE	US-PMCL	Primary	Primary
Benzene		5	< 5.0	< 5.0
Chloroethene		2	< 10	< 10
Chloroform		100	< 5.0	< 5.0
1,1-Dichloroethane			12	64
1,2-Dichloroethane		5	< 5.0	< 5.0
1,1-Dichloroethene		7	< 5.0	< 5.0
trans-1,2-Dichloroethene		100	< 5.0	31
cis-1,2-Dichloroethene		70	[91]	[700]
Methylene chloride		5	< 5.0	< 5.0
Tetrachloroethene		5	< 5.0	< 5.0
Toluene		1000	< 5.0	< 5.0
1,1,1-Trichloroethane		200	43	[210]
Trichloroethene		5	[130]	[500]
Vinyl Chloride		2	< 10	< 10
Acetone			< 100	< 100
Xylene (Total)		10000	< 10	< 10
Carbon disulfide			< 5.0	< 5.0

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Analytical Summary - Phenols In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-10
		DATE	06/11/98
		RESULT TYPE	US-PMCL
			Primary
Total Phenols			< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	MW-10
					06/11/98
					Primary
Cyanide				200	< 5
Chromium, Dissolved					< 5
Lead, Dissolved					< 2.0
Nickel, Dissolved					< 20
Chromium, Total				100	---
Lead, Total				15	---
Nickel, Total				100	---

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Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-11
		DATE	06/11/98
		RESULT TYPE	US-PMCL
			Primary
Benzene		5	< 5.0
Chloroethene		2	< 10
Chloroform		100	< 5.0
1,1-Dichloroethane			36
1,2-Dichloroethane		5	< 5.0
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	< 5.0
cis-1,2-Dichloroethene		70	[90]
Methylene chloride		5	< 5.0
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	18
Trichloroethene		5	[8.7]
Vinyl Chloride		2	< 10
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

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For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-11
		DATE	06/11/98
		RESULT TYPE	US-PMCL
			Primary
Total Phenols			10

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Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	MW-11
					06/11/98
					Primary
Cyanide				200	< 5
Chromium, Dissolved					< 5
Lead, Dissolved					< 2.0
Nickel, Dissolved					< 20
Chromium, Total				100	---
Lead, Total				15	---
Nickel, Total				100	---

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For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-12	MW-12
				06/12/98	12/13/98
				Primary	Primary
Benzene			5	<5.0	<5.0
Chloroethene			2	<10	<10
Chloroform			100	<5.0	<5.0
1,1-Dichloroethane				14	<5.0
1,2-Dichloroethane			5	<5.0	<5.0
1,1-Dichloroethene			7	<5.0	<5.0
trans-1,2-Dichloroethene			100	16	7.7
cis-1,2-Dichloroethene			70	[690]	[88]
Methylene chloride			5	<5.0	<5.0
Tetrachloroethene			5	<5.0	<5.0
Toluene			1000	<5.0	<5.0
1,1,1-Trichloroethane			200	16	<5.0
Trichloroethene			5	[180]	[35]
Vinyl Chloride			2	<10	<10
Acetone				<100	<100
Xylene (Total)			10000	<10	<10
Carbon disulfide				<5.0	<5.0

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[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-13 06/10/98	MW-13 12/13/98
				Primary	Primary
Benzene			5	< 5.0	< 5.0
Chloroethene			2	< 10	< 10
Chloroform			100	< 5.0	< 5.0
1,1-Dichloroethane				< 5.0	< 5.0
1,2-Dichloroethane			5	< 5.0	< 5.0
1,1-Dichloroethene			7	< 5.0	< 5.0
trans-1,2-Dichloroethene			100	< 5.0	< 5.0
cis-1,2-Dichloroethene			70	< 5.0	< 5.0
Methylene chloride			5	< 5.0	< 5.0
Tetrachloroethene			5	< 5.0	< 5.0
Toluene			1000	< 5.0	< 5.0
1,1,1-Trichloroethane			200	< 5.0	< 5.0
Trichloroethene			5	< 5.0	< 5.0
Vinyl Chloride			2	< 10	< 10
Acetone				< 100	< 100
Xylene (Total)			10000	< 10	< 10
Carbon disulfide				< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-12
DATE	US-PMCL	06/12/98	Primary
RESULT TYPE	US-PMCL	Primary	
Total Phenols			< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-12
		DATE	06/12/98
		RESULT TYPE	US-PMCL
			Primary
Cyanide			200
Chromium, Dissolved			< 5
Lead, Dissolved			< 2.0
Nickel, Dissolved			< 20
Chromium, Total			100
Lead, Total			15
Nickel, Total			100

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For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	DATE	MW-13	MW-13
				06/10/98	12/13/98
		RESULT TYPE	US-PMCL	Primary	Primary
Benzene			5	< 5.0	< 5.0
Chloroethene			2	< 10	< 10
Chloroform			100	< 5.0	< 5.0
1,1-Dichloroethane				< 5.0	< 5.0
1,2-Dichloroethane			5	< 5.0	< 5.0
1,1-Dichloroethene			7	< 5.0	< 5.0
trans-1,2-Dichloroethene			100	< 5.0	< 5.0
cis-1,2-Dichloroethene			70	< 5.0	< 5.0
Methylene chloride			5	< 5.0	< 5.0
Tetrachloroethene			5	< 5.0	< 5.0
Toluene			1000	< 5.0	< 5.0
1,1,1-Trichloroethane			200	< 5.0	< 5.0
Trichloroethene			5	< 5.0	< 5.0
Vinyl Chloride			2	< 10	< 10
Acetone				< 100	< 100
Xylene (Total)			10000	< 10	< 10
Carbon disulfide				< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-13
DATE	US-PMCL	06/10/98	Primary
Total Phenols			< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	MW-13
					06/10/98
					Primary
Cyanide				200	< 5
Chromium, Dissolved					< 5
Lead, Dissolved					< 2.0
Nickel, Dissolved					< 20
Chromium, Total				100	---
Lead, Total				15	---
Nickel, Total				100	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		S3	S3
		DATE		06/11/98	12/14/98
		RESULT TYPE	US-PMCL	Primary	Primary
Benzene		5		< 5.0	< 5.0
Chloroethene		2		< 10	< 10
Chloroform		100		< 5.0	< 5.0
1,1-Dichloroethane				< 5.0	< 5.0
1,2-Dichloroethane		5		< 5.0	< 5.0
1,1-Dichloroethene		7		< 5.0	< 5.0
trans-1,2-Dichloroethene		100		< 5.0	< 5.0
cis-1,2-Dichloroethene		70		< 5.0	< 5.0
Methylene chloride		5		< 5.0	< 5.0
Tetrachloroethene		5		< 5.0	< 5.0
Toluene		1000		< 5.0	< 5.0
1,1,1-Trichloroethane		200		< 5.0	< 5.0
Trichloroethene		5		< 5.0	< 5.0
Vinyl Chloride		2		< 10	< 10
Acetone				< 100	< 100
Xylene (Total)		10000		< 10	< 10
Carbon disulfide				< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S3
		DATE	06/11/98
		RESULT TYPE	US-PMCL
			Primary
Total Phenols			< 10

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	S3
	DATE		06/11/98
	RESULT TYPE		Primary
Cyanide		200	< 5
Chromium, Dissolved			< 5
Lead, Dissolved			< 2.0
Nickel, Dissolved			< 20
Chromium, Total		100	---
Lead, Total		15	---
Nickel, Total		100	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

OTHER ORGANIC COMPOUNDS

VOLATILE ORGANIC COMPOUNDS		OTHER ORGANIC COMPOUNDS									
1,1-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	1,1-DI- CHLORO- ETHYLENE	TRANS-1,2 DI- CHLORO- ETHYLENE	1,1,1- TRI- CHLORO- ETHANE	1,1,1- TRI- CHLORO- ETHYLENE	1,2 DI- CHLORO- PROPANE	VINYL CHLORIDE	CHLORO- FORM	CHLORO- TOLUENE	CIS-1,2- DICHLORO- ETHENE	BIS (2-ETHYLHEXYL) PHTHALATE
UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

NOTES:
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.

WELL NO. | DATE | SAMPLE # | LAB

S-3	11/05/86	9	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6
	06/05/87	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	09/03/87	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	01/14/88	26	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/08/88	3	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	05/18/88	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	09/23/88	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

TABLE 5

GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS
PAGE 21 OF 43
MONITOR WELLS

GROUNDWATER INVESTIGATIONS
ALLIED CORPORATION
SOUTH BEND, INDIANA
PROJECT # ALCHPX SBIN 012

T A GLEASON ASSOCIATES

Environmental and Geotechnical Services

S3MCPW
07-Oct-88

WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC	CONDUC-	pH	TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES:
				TANCE	ANCE			UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
S-3	9	11/05/86	AQUA					<15	<4	<1	<1	18	52	86	<0.3	<10	<300	<4	<6	415	<0.010	<0.010	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS. < = LESS THAN METAL SAMPLES COLLECTED SINCE 6/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER BLANK SPACE INDICATES ANALYSIS NOT PERFORMED
	18	12/12/87	AQUA	1600			12					16		110						380			
	6	06/05/87	AQUA	1600	7.52		14					<5		<3						30	0.04	0.01	
	4	09/03/87	AQUA	1500	7.43		14					<10		<3						12	<0.005	<0.010	
	26	01/15/88	AQUA	2100	6.86		9					<20		<30						10	<0.02	0.04	
	3	02/08/88	AQUA	2400	7.29		12					<20		<3						10	<0.01	0.913	
	4	5/18/88	AQUA	2300	7.33		14					<30		<5						24	<0.01	0.04	
	4	09/23/88	AQUA	1395	7.05		14.5					<30		<6						<20	<0.01	0.07	

TABLE 3

GROUNDWATER QUALITY ANALYSIS
METALS, CYANIDE
AND PHENOLS
PAGE 13 OF 28
MONITOR WELLS

GROUNDWATER INVESTIGATIONS
ALLIED CORPORATION
SOUTH BEND, INDIANA
PROJECT ALCPX S01N 013

T A GLEASON ASSOCIATES
Environmental and
Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	S4A	S4A	S4A	S4A	S4A
			03/21/97	06/03/97	09/23/97	12/09/97	06/10/98
			Primary	Primary	Primary	Primary	Primary
Benzene		5	<5	<5	<5.0	<5.0	<5.0
Chloroethene		2	<10	<2	<10	<10	<10
Chloroform		100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			14	31	24	23	33
1,2-Dichloroethane		5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene		7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene		100	<5	<5	<5.0	<5.0	5.2
cis-1,2-Dichloroethene		70	[210]	[300]	[220]	[210]	[280]
Methylene chloride		5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene		5	<5	<5	<5.0	<5.0	<5.0
Toluene		1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene		5	[6.6]	<5	<5.0	<5.0	<5.0
Vinyl Chloride		2	<10	<2	<10	<10	<10
Acetone			<100	<100	<100	<100	<100
Xylene (Total)		10000	<10	<5	<10	<10	<10
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S4A DATE 12/14/98 Primary
Benzene			5	< 5.0
Chloroethene			2	< 10
Chloroform			100	< 5.0
1,1-Dichloroethane				33
1,2-Dichloroethane			5	< 5.0
1,1-Dichloroethene			7	< 5.0
trans-1,2-Dichloroethene			100	6.8
cis-1,2-Dichloroethene			70	[260]
Methylene chloride			5	[11]
Tetrachloroethene			5	< 5.0
Toluene			1000	< 5.0
1,1,1-Trichloroethane			200	< 5.0
Trichloroethene			5	< 5.0
Vinyl Chloride			2	< 10
Acetone				< 100
Xylene (Total)			10000	< 10
Carbon disulfide				< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S4A	S4A
		DATE	03/21/97	09/23/97
		RESULT TYPE	US-PMCL	Primary
			10	10
Total Phenols				

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	S4A	S4A
				DATE	DATE
RESULT TYPE				Primary	Primary
Cyanide			200	< 5	< 5
Chromium, Dissolved				---	---
Lead, Dissolved				---	---
Nickel, Dissolved				---	---
Chromium, Total			100	16	---
Lead, Total			15	[26]	---
Nickel, Total			100	< 20	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-4A DATE COLLECTED			
			12 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	10 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	25 U	5.0 U		
	CHLOROETHANE	UG/L	50 U	10 U	5.0 U	5.0 U
	CHLOROFORM	UG/L	25 U	5.0 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	23 J	25	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	25 U	5.0 U	16	5.0 U
	1,1-DICHLOROETHENE	UG/L	25 U	5.2	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	14 J	5.2	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	310	250	5.0 U	6.2
	METHYLENE CHLORIDE	UG/L	25 U		150	230
	TETRACHLOROETHENE	UG/L	25 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	25 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	25 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	25 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 J	7.9	5.0 U	5.6
	ACETONE	UG/L	50 U	10 U	10 U	10 U
	XYLENE (TOTAL)	UG/L	500 U	100 U	100 U	100 U
	CARBON DISULFIDE	UG/L	50 U	10 U	10 U	10 U
		25 U	5.0 U	5.0 U	7.5	
TOTAL VOCS:		UG/L	357	293.3	166	249.3
E.METALS	CHROMIUM	UG/L	5 U	-	43	-
	LEAD	UG/L	2.0 U	-	53	-
	NICKEL	UG/L	20 U	-	81	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-4A DATE COLLECTED		07 DEC 94		14 MAR 95		07 JUN 95		19 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L		5 U				5.0 U	2.2	J		10 U		25 U
	CHLOROETHANE	UG/L		10 U				10 U		10 U		20 U		50 U
	1,1-DICHLOROETHANE	UG/L	62			43			11		34		15	
	1,2-DICHLOROETHANE	UG/L		5 U			5.0 U			5.0 U		10 U		25 U
	1,1-DICHLOROETHENE	UG/L	9.1			12				5.0 U		7.5	J	25 U
	TRANS-1,2-DICHLOROETHENE	UG/L	40			21			2.5	J		10		25 U
	CIS-1,2-DICHLOROETHENE	UG/L	200			200			75			320		25 U
	METHYLENE CHLORIDE	UG/L		5 U			5.0 U			5.0 U		10 U		25 U
	TETRACHLOROETHENE	UG/L		-			5.0 U			5.0 U		10 U		25 U
	TOLUENE	UG/L		5 U			5.0 U			5.0 U		10 U		25 U
	1,1,1-TRICHLOROETHANE	UG/L		5 U			5.0 U		3.0	J		10 U		25 U
	TRICHLOROETHENE	UG/L	6.5			7		5.0 U		5.0 U		10 U		25 U
	VINYL CHLORIDE	UG/L		10 U			10 U			5.0 U		11		25 U
	ACETONE	UG/L		100 U			100 U			10 U		20 U		50 U
	XYLENE (TOTAL)	UG/L		10 U			10 U		2.9	J		200 U		500 U
												20 U		50 U
	TOTAL VOCS:	UG/L		317.6			283			96.6		382.5		175
E.METALS	LEAD	UG/L		-			-			-		13		-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-			2.0 U			-		-		-
	NICKEL (DISSOLVED)	UG/L		-			20 U			-		-		-
H.MISC	CYANIDE, TOTAL	UG/L		-			25 U			-		5 U		-
	PHENOLS	UG/L		-			10 U			-		40		-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-4A

DATE SAMPLED	SAMPLE NO.	LAB	MCL		1,1-DI-CHLORO-ETHANE	1,2-DI-CHLORO-ETHANE	1,1-DI-CHLORO-ETHENE	CIS-1,2-DI-CHLORO-ETHENE	TRANS-1,2-DI-CHLORO-ETHENE	1,1,1-TRI-CHLORO-ETHANE	TRI-CHLORO-ETHENE	VINYL CHLORIDE	SUM	NOTES
			METHOD	IPL UG/L	5 UG/L	7 UG/L	P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L	2 UG/L	UG/L		
06/05/87	22	AQUA			1100	ND	200	820	110	200	120	ND	2550	A
09/04/87	27	AQUA			1100	ND	80.0	2000	170	ND	17.0	790	4157	
01/14/88	25	AQUA			1600	ND	180	1800	112	ND	ND	700	4192	
02/08/88	2	AQUA			1500	ND	155	1770	160	ND	ND	900	4495	
05/19/88	7	AQUA			1700	ND	165	2800	ND	ND	ND	437	5102	
05/18/88	8	AQUA			1640	ND	200	2750	ND	ND	ND	373	4963	
09/22/88	7	AQUA			1810	7.0	292	940	154	11.0	40.0	1570	4824	
09/22/88	8	AQUA			1820	7.3	281	920	155	10.0	39.0	1620	4852	
12/16/88	26	AQUA			970	ND	114	1600	135	ND	23.7	633	3476	
02/27/89	43	AQUA			700	ND	110	1400	150	8.7	17.2	270	2656	
06/16/89	37	AQUA	624		660	ND	120	1080	190	ND	ND	ND	2050	
06/16/89	38	AQUA	624		620	ND	110	1040	190	ND	ND	ND	1960	
09/09/89	25	AQUA	8240		500	ND	120	840	190	34	19.7	69.3	1053	
12/13/89	27	AQUA	8240		880	ND	151	760	180	34.1	32.5	41	2079	
03/02/90	37	AQUA	8240		670	ND	92.1	1000	210	27	19	27.4	2046	
06/03/90	23	AQUA	8240		430	ND	84.0	640	180	20.0	19.1	20.9	1395	
08/24/90	22	AQUA	8240		231	ND	9.0	500	60.2	9.5	16.6	ND	826	
10/28/90	14	AQUA	8240		408	ND	86.2	677	178	16.8	25.9	ND	1392	
03/02/91	25	AQUA	8240		176	5.7	39.7	311	50.0	6.2	16.0	12.7	625	
06/02/91	28	AQUA	8240		220	ND	47.2	140	ND	9.3	26.6	ND	311	
08/31/91	30	AQUA	8240		140	ND	53.8	182	46.6	11.3	34.1	10.3	478	
11/13/91	21	AQUA	8240		156	ND	45.2	179	47.2	8.6	36.9	ND	473	
11/13/91	22	AQUA	8240		131	ND	41.5	173	40.6	8.6	37.0	ND	432	
01/23/92	27	AQUA	8240		342	ND	51.8	197	46.3	ND	39.8	ND	677	
01/23/92	28	AQUA	8240		322	ND	48.9	180	45.7	ND	34.6	ND	631	
04/01/92	36	AQUA	8240		127	ND	40.5	169	41.0	6.7	25.1	ND	409	
08/22/92	24	AQUA	8240		171	ND	46.4	238	72.4	ND	26.0	ND	554	
10/31/92	18	AQUA	8240		103	ND	37.2	171	46.6	ND	16.7	ND	375	
10/31/92	19	AQUA	8240		84.1	ND	32.2	149	37.1	ND	15.3	ND	328	
02/04/93	18	AQUA	8240		108	ND	37.8	216	46.7	ND	21.8	ND	430	
05/11/93	18	AQUA	8240		80.5	ND	27.0	161	32.8	ND	13.7	ND	325	
08/31/93	16	AQUA	8240		68.4	ND	17.7	125	20.6	ND	20.6	ND	252	
12/03/93	28	AQUA	8240		89.7	ND	55.2	234	26.4	ND	29.4	ND	435	
12/03/93	29	AQUA	8240		83.2	ND	55.6	223	27.7	ND	29.7	ND	419	
02/18/94	18	AQUA	8240		66.8	ND	17.5	201	22.7	ND	16.8	ND	325	
03/03/94	18	AQUA	8240		77.7	ND	17.9	174	31.0	ND	9.9	ND	311	
09/15/94	31	AQUA	8240		96.7	ND	19.9	230	57.7	ND	10.8	ND	415	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

IPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - AS OF 06/25/87 WELL S-4 WAS REPLACED BY WELL S-4A.

PARAMETER

○ - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SMITH BEND, INDIANA

td gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S9	S9	S9	S9	S9
				03/19/97	06/04/97	09/25/97	12/11/97	06/11/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	[220]	[250]	[190]	[240]	[170]
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	5.8	<5	5.8	<5.0	7.3
cis-1,2-Dichloroethene			70	45	54	54	62	61
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	S9
	DATE	12/14/98
	RESULT TYPE	US-PMCL
		Primary
Benzene	5	< 5.0
Chloroethene	2	< 10
Chloroform	100	< 5.0
1,1-Dichloroethane		< 5.0
1,2-Dichloroethane	5	[240]
1,1-Dichloroethene	7	< 5.0
trans-1,2-Dichloroethene	100	< 5.0
cis-1,2-Dichloroethene	70	[92]
Methylene chloride	5	[6.8] BJ
Tetrachloroethene	5	< 5.0
Toluene	1000	< 5.0
1,1,1-Trichloroethane	200	< 5.0
Trichloroethene	5	< 5.0
Vinyl Chloride	2	< 10
Acetone		< 100
Xylene (Total)	10000	< 10
Carbon disulfide		< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S9	S9	S9
DATE	RESULT TYPE	US-PMCL	03/19/97	09/25/97	06/11/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S9			
			DATE	03/19/97	09/25/97	06/11/98
			RESULT TYPE	US-PMCL	Primary	Primary
Cyanide			200	9	10	<5
Chromium, Dissolved				---	---	8.9
Lead, Dissolved				---	---	<2.0
Nickel, Dissolved				---	---	<20
Chromium, Total			100	<5	---	---
Lead, Total			15	3	---	---
Nickel, Total			100	<20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-9 DATE COLLECTED							
			12 MAR 96 AMOUNT	Q	04 JUN 96 AMOUNT	Q	04 SEP 96 AMOUNT	Q	10 DEC 96 AMOUNT	Q
A.VOA	BENZENE	UG/L	10	U	5.0	U	5.0	U	5.0	U
	CHLOROETHANE	UG/L	20	U	10	U	10	U	10	U
	CHLOROFORM	UG/L	10	U	5.0	U	5.0	U	5.0	U
	1,1-DICHLOROETHANE	UG/L	10	U	5.0	U	5.0	U	5.0	U
	1,2-DICHLOROETHANE	UG/L	250	U	230	U	240	U	270	U
	1,1-DICHLOROETHENE	UG/L	10	U	5.0	U	5.0	U	5.0	U
	TRANS-1,2-DICHLOROETHENE	UG/L	4.8	J	3.4	J	5.0	U	3.1	J
	CIS-1,2-DICHLOROETHENE	UG/L	26	U	26	U	24	U	42	U
	METHYLENE CHLORIDE	UG/L	10	U	5.0	U	5.0	U	5.0	U
	TETRACHLOROETHENE	UG/L	10	U	5.0	U	5.0	U	5.0	U
	TOLUENE	UG/L	10	U	5.0	U	5.0	U	5.0	U
	1,1,1-TRICHLOROETHANE	UG/L	10	U	5.0	U	5.0	U	5.0	U
	TRICHLOROETHENE	UG/L	10	U	5.0	U	5.0	U	5.0	U
	VINYL CHLORIDE	UG/L	20	U	10	U	10	U	10	U
	ACETONE	UG/L	200	U	100	U	100	U	100	U
	XYLENE (TOTAL)	UG/L	20	U	10	U	10	U	10	U
	CARBON DISULFIDE	UG/L	10	U	5.0	U	5.0	U	4.8	J
	TOTAL VOCS:	UG/L	280.8		259.4		264		319.9	
E.METALS	CHROMIUM	UG/L	5	U	-		7.2		-	
	LEAD	UG/L	2.0	U	-		2.0	U	-	
	NICKEL	UG/L	20	U	-		6.9	J	-	
H.MISC	CYANIDE, TOTAL	UG/L	5	U	-		5	U	-	
	PHENOLS	UG/L	10	U	-		10	U	-	

QUALIFIER CODES (Q):

- J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.
 - U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
 - : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.
- NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-9		DATE COLLECTED		07 DEC 94		14 MAR 95		06 JUN 95		19 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q		
A.VOA	BENZENE	UG/L	10 U		10 U											
	CHLOROETHANE	UG/L	20 U		20 U					5.0 U			10 U			10 U
	1,1-DICHLOROETHANE	UG/L	10 U		10 U					10 U			20 U			20 U
	1,2-DICHLOROETHANE	UG/L	363		10 U					5.0 U			10 U			10 U
	1,1-DICHLOROETHENE	UG/L	10 U		330					170			210			250
	TRANS-1,2-DICHLOROETHENE	UG/L	10 U		10 U					5.0 U			10 U			10 U
	CIS-1,2-DICHLOROETHENE	UG/L	21		10 U					2.2	J		10 U			10 U
	METHYLENE CHLORIDE	UG/L	10 U		26					14			22			23
	TETRACHLOROETHENE	UG/L	-		10 U					5.0 U			10 U			10 U
	TOLUENE	UG/L	10 U		10 U					5.0 U			10 U			10 U
	1,1,1-TRICHLOROETHANE	UG/L	10 U		10 U					5.0 U			10 U			10 U
	TRICHLOROETHENE	UG/L	10 U		10 U					5.0 U			10 U			10 U
	VINYL CHLORIDE	UG/L	20 U		20 U					5.0 U			10 U			10 U
	ACETONE	UG/L	200 U		200 U					10 U			9.1	J		20 U
	XYLENE (TOTAL)	UG/L	20 U		20 U					100 U			200 U			200 U
										10 U			20 U			20 U
	TOTAL VOCS:	UG/L	384		356					186.2			241.1			273
E.METALS	LEAD	UG/L	-		-					-			2.0 U			-
E.METALS (D S.)	LEAD (DISSOLVED)	UG/L	-		2.0 U					-			-			-
	NICKEL (DISSOLVED)	UG/L	-		20 U					-			-			-
H.MISC	CYANIDE, TOTAL	UG/L	-		5 U					-			5 U			-
	PHENOLS	UG/L	-		10 U					-			10 U			-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-9				1,2-DI- CHLORO- ETHANE	CIS-1,2- DICHLORO- ETHENE	TRANS-1,2 DICHLORO- ETHENE	SUM	NOTES	
DATE SAMPLED	SAMPLE NO.	LAB	MCL	5	P-70	P-100			
			METHOD	UG/L	UG/L	UG/L	UG/L		
10/01/85	12	AQUA		81.3	ND	2.2	84		
11/03/85	4	AQUA		29	ND	2.3	31		
12/18/85	20	AQUA		210	15	ND	225		
12/18/85	30	AQUA		43.3	ND	ND	43		
02/12/87	12	AQUA		313	ND	23	336		
06/03/87	7	AQUA		460	17	ND	477		
09/03/87	8	AQUA		170	13	ND	183		
01/13/88	8	AQUA		810	43	ND	853		
02/08/88	9	AQUA		440	ND	ND	440		
05/10/88	9	AQUA		440	47.8	ND	488		
09/23/88	9	AQUA		240	ND	ND	240		
12/09/88	4	AQUA		12.3	ND	ND	12		
02/23/89	13	AQUA		9.2	ND	ND	9		
06/10/89	33	AQUA	624	6.7	ND	ND	7		
09/08/89	15	AQUA	8240	No VOC Detected					
12/13/89	28	AQUA	8240	40.3	ND	ND	40		
02/27/90	4	AQUA	8240	40.6	ND	ND	40		
06/01/90	6	AQUA	8240	34.2	ND	ND	34		
08/22/90	4	AQUA	8240	No VOC Detected					
10/27/90	9	AQUA	8240	No VOC Detected					
02/28/91	3	AQUA	8240	7.8	ND	ND	8		
05/31/91	9	AQUA	8240	16.3	ND	ND	16		
08/29/91	14	AQUA	8240	11.7	ND	ND	12		
11/14/91	33	AQUA	8240	15.0	ND	ND	15		
01/22/92	5	AQUA	8240	42.8	ND	ND	43		
03/30/92	12	AQUA	8240	68.8	ND	ND	66		
06/22/92	20	AQUA	8240	127	5.4	ND	132		
10/31/92	27	AQUA	8240	155	7.8	ND	163		
02/03/93	5	AQUA	8240	221	13.8	ND	235		
05/12/93	29	AQUA	8240	223	11.8	ND	235		
09/02/93	34	AQUA	8240	220	16.8	ND	237		
12/02/93	17	AQUA	8240	324	25.7	5.1	355		
02/17/94	9	AQUA	8240	259	18.9	ND	278		
05/05/94	17	AQUA	8240	215	15.8	ND	231		
09/13/94	24	AQUA	8240	240	19.9	ND	259		

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

MPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

ta gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	S15	S15	S15	S15	S15
			03/21/97	06/05/97	09/24/97	09/24/97	12/08/97
			Primary	Primary	Primary	Duplicate	Primary
Benzene		5	<5	<5	<5.0	<5.0	<5.0
Chloroethene		2	18	30	31	32	25
Chloroform		100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			<5	14	14	14	14
1,2-Dichloroethane		5	24	41	<5.0	<5.0	<5.0
1,1-Dichloroethene		7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene		100	<5	6.3	5.4	5.8	<5.0
cis-1,2-Dichloroethene		70	18	35	22	23	<5.0
Methylene chloride		5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene		5	<5	<5	<5.0	<5.0	<5.0
Toluene		1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene		5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride		2	18	30	31	32	25
Acetone			<100	<100	<100	<100	<100
Xylene (Total)		10000	<10	<5	<10	<10	<10
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

|| = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	S15	
		S15	S15
	DATE	06/11/98	12/14/98
	RESULT TYPE	US-PMCL	Primary
Benzene		5	< 5.0
Chloroethene		2	[15]
Chloroform		100	< 5.0
1,1-Dichloroethane			8.6
1,2-Dichloroethane		5	[12]
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	< 5.0
cis-1,2-Dichloroethene		70	16
Methylene chloride		5	< 5.0
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	< 5.0
Trichloroethene		5	< 5.0
Vinyl Chloride		2	[15]
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S15	S15	S15	S15	
		DATE	03/21/97	09/24/97	09/24/97	06/11/98	
		RESULT TYPE	US-PMCL	Primary	Primary	Duplicate	Primary
Total Phenols			< 10	< 10	< 10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S15				
			US-PMCL	03/21/97	09/24/97	09/24/97	06/11/98
			RESULT TYPE	Primary	Primary	Duplicate	Primary
Cyanide			200	< 5	< 5	< 5	< 5
Chromium, Dissolved				---	---	---	7.2
Lead, Dissolved				---	---	---	< 2.0
Nickel, Dissolved				---	---	---	< 20
Chromium, Total			100	44	---	---	---
Lead, Total			15	2.7	---	---	---
Nickel, Total			100	< 20	---	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-15 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	10 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHANE	UG/L	19	13	13	15
	1,2-DICHLOROETHANE	UG/L	5.0 U	6.6	32	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	3.6 J	2.9 J	4.9 J	4.2 J
	CIS-1,2-DICHLOROETHENE	UG/L	8.2	8.2	30	8.1
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	23	17	20	25
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
TOTAL VOCS:	UG/L	53.8	47.7	99.9	52.3	
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	2.0 U	-	2.0 U	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-15		DATE COLLECTED		08 DEC 94		15 MAR 95		06 JUN 95		20 SEP 95		06 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L		5 U		5.0 U					5.0 U		5.0 U			5.0 U
	CHLOROETHANE	UG/L		10 U		10 U					10 U		10 U			10 U
	1,1-DICHLOROETHANE	UG/L	11		10					10			8.9			13
	1,2-DICHLOROETHANE	UG/L		5 U		5.0 U				11			15			3.4
	1,1-DICHLOROETHANE	UG/L		5 U		5.0 U							5.0 U			5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U		5.0 U							5.0 U			5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	19			5.0 U				21			4.2	J		3.7
	METHYLENE CHLORIDE	UG/L		5 U		5.0 U							27			8.4
	TETRACHLOROETHENE	UG/L		-		5.0 U							5.0 U			5.0 U
	TOLUENE	UG/L		5 U		5.0 U							5.0 U			5.0 U
	1,1,1-TRICHLOROETHANE	UG/L		5 U		5.0 U							5.0 U			5.0 U
	TRICHLOROETHENE	UG/L		5 U		5.0 U							5.0 U			5.0 U
	VINYL CHLORIDE	UG/L	23		16								5.0 U			5.0 U
	ACETONE	UG/L		100 U		100 U				21			19			26
	XYLENE (TOTAL)	UG/L		10 U		10 U							10 U			10 U
	TOTAL VOCS:	UG/L	53		26					63			74.1			54.5
E.METALS	LEAD	UG/L		-		-							2.0 U			-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-		2.0 U							-			-
	NICKEL (DISSOLVED)	UG/L		-		20 U							-			-
H.MISC	CYANIDE, TOTAL	UG/L		-		5 U							5 U			-
	PHENOLS	UG/L		-		10 U							10 U			-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	1,1-DI-CHLORO-ETHANE	1,1-DI-CHLORO-ETHANE	1,1,1-TRI-CHLORO-ETHANE	TRANS-1,2-DICHLORO-ETHENE	VINYL CHLORIDE	OTHER VOC	SUM	NOTES	
				NPL UG/L	S UG/L	P-70 UG/L	P-100 UG/L	2 UG/L	UG/L	UG/L		
11/06/86	27	AQUA		ND	1.2	ND	1.5	ND	ND	3		
12/18/86	22	AQUA		No VOC Detected								
06/05/87	6	AQUA		No VOC Detected								
09/03/87	8	AQUA		ND	ND	ND	ND	76	ND	76		
09/03/87	5	AQUA		No VOC Detected								
01/14/88	24	AQUA		22.8	ND	ND	ND	ND	ND	22		
02/08/88	4	AQUA		19.8	ND	ND	ND	ND	ND	19		
05/18/88	8	AQUA		No VOC Detected								
09/23/88	8	AQUA		8.2	ND	ND	ND	ND	ND	8		
12/18/88	24	AQUA		ND	ND	ND	ND	10.9	121	132		
02/23/89	19	AQUA		No VOC Detected								
06/18/89	31	AQUA	024	No VOC Detected								
09/09/89	22	AQUA	0240	ND	ND	ND	ND	10.9	140	151		
12/12/89	22	AQUA	0240	ND	100	240	26.6	18.5	280	665		
03/01/90	40	AQUA	0240	69.3	ND	ND	ND	31.3	42.6	143		
03/03/90	41	AQUA	0240	71.8	ND	ND	ND	32.0	46.1	150		
05/03/90	25	AQUA	0240	37.8	ND	ND	ND	22.4	ND	60		
08/24/90	20	AQUA	0240	12.8	ND	ND	ND	ND	ND	13		
10/28/90	13	AQUA	0240	27.2	ND	ND	178	ND	ND	205		
03/01/91	12	AQUA	0240	26.8	28.8	27.4	ND	40.9	ND	124		
06/01/91	25	AQUA	0240	22.5	24.5	28.8	10.7	25.2	ND	112		
08/31/91	26	AQUA	0240	23.8	17.3	ND	ND	44.4	ND	86		
11/12/91	6	AQUA	0240	ND	5.7	6.1	ND	36.8	ND	49		
01/25/92	34	AQUA	0240	ND	ND	7.5	ND	ND	ND	8		
04/01/92	33	AQUA	0240	21.5	ND	6.0	ND	22.0	ND	50		
08/22/92	21	AQUA	0240	48.0	12.4	5.8	ND	36.8	ND	95		
10/31/92	16	AQUA	0240	17.8	ND	8.8	ND	17.8	ND	43		
02/04/93	19	AQUA	0240	26.2	83.8	50.7	6.7	48.0	ND	200		
05/11/93	18	AQUA	0240	19.1	89.4	45.1	8.9	38.8	ND	179		
08/31/93	15	AQUA	0240	15.4	48.4	36.8	7.0	25.2	ND	133		
12/03/93	25	AQUA	0240	15.8	17.8	38.9	7.9	29.8	ND	110		
02/17/94	14	AQUA	0240	12.3	ND	17.3	ND	30.0	ND	60		
05/05/94	20	AQUA	0240	11.2	ND	8.0	ND	22.5	ND	42		
09/15/94	28	AQUA	0240	10.8	7.8	21.0	ND	23.8	ND	63		

NOTES:

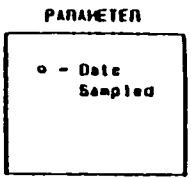
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - ND U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.



SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
INORGANIC COMPOUNDS

ALLIED SIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

Argledson
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	S16		S16		S16		S16	
		DATE	03/20/97	06/03/97	09/24/97	12/08/97	06/11/98		
		RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary	
Benzene		5	<5	<5	<5.0	<5.0	<5.0	<5.0	
Chloroethene		2	<10	<2	<10	<10	<10	<10	
Chloroform		100	<5	<5	<5.0	<5.0	<5.0	<5.0	
1,1-Dichloroethane			<5	<5	<5.0	<5.0	<5.0	<5.0	
1,2-Dichloroethane		5	<5	<5	<5.0	<5.0	<5.0	<5.0	
1,1-Dichloroethene		7	[28]	<5	<5.0	<5.0	<5.0	<5.0	
trans-1,2-Dichloroethene		100	11	<5	18	19	5.5	5.5	
cis-1,2-Dichloroethene		70	[150]	[120]	[91]	[73]	[79]	[79]	
Methylene chloride		5	<5	<5	<5.0	<5.0	<5.0	<5.0	
Tetrachloroethene		5	<5	<5	<5.0	<5.0	<5.0	<5.0	
Toluene		1000	<5	<5	<5.0	<5.0	<5.0	<5.0	
1,1,1-Trichloroethane		200	25	37	27	20	20	20	
Trichloroethene		5	[380]	[650]	[560]	[470]	[460]	[460]	
Vinyl Chloride		2	<10	<2	<10	<10	<10	<10	
Acetone			<100	<100	<100	<100	<100	<100	
Xylene (Total)		10000	<10	<5	<10	<10	<10	<10	
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0	<5.0	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S16
		DATE	12/14/98
		RESULT TYPE	US-PMCL
			Primary
Benzene		5	< 5.0
Chloroethene		2	< 10
Chloroform		100	< 5.0
1,1-Dichloroethane			< 5.0
1,2-Dichloroethane		5	< 5.0
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	26
cis-1,2-Dichloroethene		70	54
Methylene chloride		5	[15]
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	20
Trichloroethene		5	[420]
Vinyl Chloride		2	< 10
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S16	S16	S16
DATE	US-PMCL	03/20/97	09/24/97	06/11/98	
RESULT TYPE		Primary	Primary	Primary	
Total Phenols		< 10	< 10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	S16	S16	S16
			03/20/97	09/24/97	06/11/98
			Primary	Primary	Primary
Cyanide		200	< 5	< 5	< 5
Chromium, Dissolved			---	---	20
Lead, Dissolved			---	---	< 2.0
Nickel, Dissolved			---	---	< 20
Chromium, Total		100	< 5	---	---
Lead, Total		15	< 2	---	---
Nickel, Total		100	< 20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-16 DATE COLLECTED 12 MAR 96		04 JUN 96		04 SEP 96		10 DEC 96	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	25	U	25	U	5.0	U	5.0	U
	CHLOROETHANE	UG/L	50	U	50	U	10	U	10	U
	CHLOROFORM	UG/L	25	U	25	U	5.0	U	3.8	J
	1,1-DICHLOROETHANE	UG/L	25	U	25	U	5.0	U	5.0	U
	1,2-DICHLOROETHANE	UG/L	25	U	25	U	5.0	U	5.0	U
	1,1-DICHLOROETHENE	UG/L	44		43		15		26	
	TRANS-1,2-DICHLOROETHENE	UG/L	29		13	J	17		16	
	CIS-1,2-DICHLOROETHENE	UG/L	440		420		180		170	
	METHYLENE CHLORIDE	UG/L	25	U	25	U	5.0	U	5.0	U
	TETRACHLOROETHENE	UG/L	25	U	25	U	5.0	U	5.0	U
	TOLUENE	UG/L	25	U	25	U	5.0	U	5.0	U
	1,1,1-TRICHLOROETHANE	UG/L	36		32		27		35	
	TRICHLOROETHENE	UG/L	400		370		360		400	
	VINYL CHLORIDE	UG/L	210		50		10	U	10	U
	ACETONE	UG/L	500	U	500	U	100	U	100	U
	XYLENE (TOTAL)	UG/L	50	U	50	U	10	U	10	U
	CARBON DISULFIDE	UG/L	25	U	25	U	5.0	U	5.0	U
TOTAL VOCS:		UG/L	1159		928		599		650.8	
E.METALS	CHROMIUM	UG/L	5	U	-		5.0	U	-	
	LEAD	UG/L	0.92	J	-		1.5	J	-	
	NICKEL	UG/L	8	J	-		6.9	J	-	
H.MISC	CYANIDE, TOTAL	UG/L	5	U	-		5	U	-	
	PHENOLS	UG/L	10	U	-		10	U	-	

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-16		DATE COLLECTED		07 DEC 94		14 MAR 95		07 JUN 95		19 SEP 95		06 DEC 95				
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q			
A.VOA	BENZENE	UG/L	10	U					25	U									
	CHLOROETHANE	UG/L	20	U					50	U				25	U	25	U		
	1,1-DICHLOROETHANE	UG/L	10	U					25	U	3.1	J	5.4	J		25	U		
	1,2-DICHLOROETHANE	UG/L	10	U					25	U		25	U				25	U	
	1,1-DICHLOROETHENE	UG/L	10	U					25	U	5.2	J	7.4	J			13		
	TRANS-1,2-DICHLOROETHENE	UG/L	12						25	U	29		15	J			16		
	CIS-1,2-DICHLOROETHENE	UG/L	59		49				67				230				320		
	METHYLENE CHLORIDE	UG/L	10	U					25	U		25	U		25	U		25	U
	TETRACHLOROETHENE	UG/L	-						25	U		25	U		25	U		25	U
	TOLUENE	UG/L	10	U					25	U		25	U		25	U		25	U
	1,1,1-TRICHLOROETHANE	UG/L	25						25	U	18	J	19	J			23		
	TRICHLOROETHENE	UG/L	261		240				250				250				250		
	VINYL CHLORIDE	UG/L	56		620				360				430				160		
	ACETONE	UG/L		200	U			500	U			500	U		500	U		500	U
	XYLENE (TOTAL)	UG/L		20	U			50	U			50	U		50	U		50	U
TOTAL VOCS:	UG/L	413		909				732.3				956.8				782			
E.METALS	LEAD	UG/L	-					-				0.7	J			-			
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-				2.0	U				-				-			
	NICKEL (DISSOLVED)	UG/L	-				20	U				-				-			
H.MISC	CYANIDE, TOTAL	UG/L	-				5	U				-		5	U		-		
	PHENOLS	UG/L	-				10	U				-		10	U		-		

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-16

DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	CIS-1, 2-DICHLOROETHENE	TRANS-1, 2-DICHLOROETHENE	1, 1, 1-TRICHLOROETHANE	TRI-CHLOROETHENE	SUM	NOTES	
				P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L			
11/16/86	11	AQUA		No VOC Detected						
12/18/86	19	AQUA		ND	ND	22.5	70.1	93		
12/18/86	29	AQUA		ND	ND	21.5	83.0	85		
02/12/87	11	AQUA		ND	4.4	23.3	95.0	123		
05/05/87	12	AQUA		5.6	8.6	18.0	57.0	85		
09/04/87	28	AQUA		ND	ND	ND	65.0	65		
01/15/88	27	AQUA		ND	ND	15.0	58.0	73		
02/09/88	12	AQUA		ND	ND	13.5	53.0	67		
05/19/88	23	AQUA		6.8	ND	10.9	92.0	70		
09/23/88	14	AQUA		ND	ND	20.0	76.0	96		
12/18/88	29	AQUA		6.2	ND	18.7	62.1	87		
02/24/89	20	AQUA		8.1	ND	15.7	60.4	82		
05/08/89	12	AQUA	824	8.2	8.4	18.4	66.7	104		
09/10/89	34	AQUA	8240	8.1	8.7	20.2	58.2	96		
12/13/89	31	AQUA	8240	10.8	8.0	22.5	94.6	137		
03/03/90	44	AQUA	8240	19.8	ND	17.9	73.4	111		
06/03/90	19	AQUA	8240	19.4	8.6	19.4	83.6	131		
08/23/90	16	AQUA	8240	No VOC Detected						
10/29/90	30	AQUA	8240	11.3	ND	20.8	82.0	114		
03/04/91	36	AQUA	8240	ND	ND	ND	35.8	36		
06/02/91	29	AQUA	8240	ND	ND	10.3	46.7	57		
08/31/91	33	AQUA	8240	8.1	ND	ND	64.5	70		
11/13/91	32	AQUA	8240	8.1	ND	15.5	67.1	91		
01/26/92	37	AQUA	8240	16.4	ND	19.4	95.5	131		
04/02/92	45	AQUA	8240	28.1	ND	19.9	98.7	147		
08/22/92	18	AQUA	8240	37.3	5.8	22.1	141	206		
10/31/92	20	AQUA	8240	42.8	ND	19.1	91.4	153		
02/05/93	24	AQUA	8240	48.3	ND	20.1	155	223		
05/12/93	23	AQUA	8240	42.1	ND	16.5	109	188		
09/01/93	27	AQUA	8240	28.8	ND	19.8	136	183		
12/03/93	32	AQUA	8240	ND	38.1	21.4	188	248		
02/18/94	25	AQUA	8240	17.8	ND	8.9	81.0	108		
03/06/94	27	AQUA	8240	32.3	8.7	21.8	143	206		
09/15/94	23	AQUA	8240	48.6	6.2	18.1	148	222		

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GC/MS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Data Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

W. Gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S17	S17	S17	S17	S17
					03/20/97	06/03/97	09/24/97	12/11/97	06/10/98
					Primary	Primary	Primary	Primary	Primary
Benzene	5				<5	<5	<5.0	<5.0	<5.0
Chloroethene	2				<10	<2	<10	<10	<10
Chloroform	100				<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane					<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane	5				<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene	7				<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene	100				<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene	70				<5	<5	<5.0	<5.0	<5.0
Methylene chloride	5				<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene	5				<5	<5	<5.0	<5.0	<5.0
Toluene	1000				<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	200				34	40	51	37	26
Trichloroethene	5				[16]	[25]	[28]	[25]	[19]
Vinyl Chloride	2				<10	<2	<10	<10	<10
Acetone					<100	<100	<100	<100	<100
Xylene (Total)	10000				<10	<5	<10	<10	<10
Carbon disulfide					<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	S17
	DATE		12/14/98
	RESULT TYPE		Primary
Benzene		5	< 5.0
Chloroethene		2	< 10
Chloroform		100	< 5.0
1,1-Dichloroethane			< 5.0
1,2-Dichloroethane		5	< 5.0
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	< 5.0
cis-1,2-Dichloroethene		70	< 5.0
Methylene chloride		5	< 5.0
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	22
Trichloroethene		5	[18]
Vinyl Chloride		2	< 10
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	S17
Total Phenols					< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	S17
	DATE		03/20/97
	RESULT TYPE		Primary
Cyanide		200	<5
Chromium, Dissolved			---
Lead, Dissolved			---
Nickel, Dissolved			---
Chromium, Total		100	<5
Lead, Total		15	<2
Nickel, Total		100	<20

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-17 DATE COLLECTED 12 MAR 96		04 JUN 96		04 SEP 96		11 DEC 96	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	CHLOROETHANE	UG/L	10	U	10	U	10	U	10	U
	CHLOROFORM	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,1-DICHLOROETHANE	UG/L	4.1	J	4.8	J	3.2	J	5.0	U
	1,2-DICHLOROETHANE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,1-DICHLOROETHENE	UG/L	8.4	J	4.6	J	4.2	J	5.0	U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	METHYLENE CHLORIDE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TETRACHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TOLUENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,1,1-TRICHLOROETHANE	UG/L	97	U	72	U	74	U	5.0	U
	TRICHLOROETHENE	UG/L	21	U	21	U	22	U	46	U
	VINYL CHLORIDE	UG/L	10	U	10	U	10	U	21	U
	ACETONE	UG/L	100	U	100	U	100	U	10	U
	XYLENE (TOTAL)	UG/L	10	U	10	U	10	U	100	U
	CARBON DISULFIDE	UG/L	5.0	U	5.0	U	5.0	U	10	U
TOTAL VOCS:	UG/L	130.5		102.4		103.4		67		
E.METALS	CHROMIUM	UG/L	5	U	-		4.1	J	-	
	LEAD	UG/L	2.0	U	-		0.6	J	-	
	NICKEL	UG/L	20	U	-		20	U	-	
H.MISC	CYANIDE, TOTAL	UG/L	5	U	-		5	U	-	
	PHENOLS	UG/L	10	U	-		10	U	-	

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

SAMPLE ID
S-17
DATE COLLECTED

GROUP	PARAMETER NAME	UNITS	08 DEC 94		15 MAR 95		07 JUN 95		19 SEP 95		06 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	CHLOROETHANE	UG/L		50 U		50 U		50 U		50 U		10 U
	1,1-DICHLOROETHANE	UG/L	88		110		39		21	J	12	
	1,2-DICHLOROETHANE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	1,1-DICHLOROETHENE	UG/L	65		56		24	J	14	J	22	
	TRANS-1,2-DICHLOROETHENE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	METHYLENE CHLORIDE	UG/L		25 U		25 U	3.2	J		25 U		5.0 U
	TETRACHLOROETHENE	UG/L		-		25 U		25 U		25 U		5.0 U
	TOLUENE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	1000		700		300		220		140	
	TRICHLOROETHENE	UG/L	51		27		20	J	27		30	
	VINYL CHLORIDE	UG/L		50 U		50 U		50 U		50 U		10 U
	ACETONE	UG/L		500 U		500 U		500 U		500 U		100 U
	XYLENE (TOTAL)	UG/L		50 U		50 U		50 U		50 U		10 U
TOTAL VOCS:	UG/L		1204		893		386.2		282		204	
E.METALS	LEAD	UG/L		-		-			2.0 U		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-		2.0 U					-	
	NICKEL (DISSOLVED)	UG/L		-		20 U					-	
H.MISC	CYANIDE, TOTAL	UG/L		-		5 U			5 U		-	
	PHENOLS	UG/L		-		10 U			10 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-17				1, 1-DI- CHLORO- ETHANE	1, 2-DI- CHLORO- ETHANE	1, 1-DI- CHLORO- ETHENE	CIS-1, 2- DICHLORO- ETHENE	TRANS-1, 2 DICHLORO- ETHENE	1, 1, 1-TRI CHLORO- ETHANE	TRI- CHLORO- ETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	NCL METHOD	NPL UG/L	8 UG/L	7 UG/L	P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L	UG/L	
11/16/86	16	AQUA		4.3	1.6	ND	ND	ND	ND	12.0	18	
01/07/87	4	AQUA		ND	ND	ND	ND	ND	ND	94.8	93	
02/12/87	3	AQUA		ND	ND	ND	ND	7.9	ND	116	124	
06/05/87	15	AQUA		ND	ND	ND	5.6	ND	ND	80.0	86	
09/03/87	20	AQUA		ND	ND	ND	ND	ND	ND	88.0	86	
01/14/88	22	AQUA		ND	ND	ND	6.8	ND	ND	68.0	77	
02/18/88	33	AQUA		ND	ND	ND	6.8	ND	ND	75.0	81	
05/19/88	26	AQUA		ND	ND	ND	ND	ND	ND	60.7	61	
09/23/88	12	AQUA		ND	ND	ND	ND	ND	ND	78.0	78	
02/23/89	17	AQUA		ND	ND	ND	ND	ND	ND	75.9	76	
06/09/89	27	AQUA	824	ND	ND	ND	ND	ND	ND	65.7	68	
09/08/89	13	AQUA	8240	ND	ND	ND	ND	ND	ND	53.8	54	
12/12/89	23	AQUA	8240	ND	ND	ND	5.1	ND	ND	62.4	68	
03/02/90	26	AQUA	8240	ND	ND	ND	6.9	ND	ND	42.4	49	
06/04/90	33	AQUA	8240	ND	ND	ND	6.2	ND	ND	42.8	49	
08/24/90	34	AQUA	8240	ND	ND	ND	6.9	ND	ND	35.0	42	
08/24/90	35	AQUA	8240	ND	ND	ND	6.5	ND	ND	33.6	40	
10/28/90	22	AQUA	8240	ND	ND	ND	ND	9.6	ND	40.4	50	
03/02/91	24	AQUA	8240	ND	ND	ND	8.2	ND	ND	29.6	38	
06/02/91	30	AQUA	8240	ND	ND	ND	ND	ND	ND	27.2	27	
08/31/91	31	AQUA	8240	ND	ND	ND	ND	ND	ND	32.6	33	
08/31/91	32	AQUA	8240	ND	ND	ND	ND	ND	ND	33.0	33	
11/13/91	23	AQUA	8240	ND	ND	ND	5.5	ND	ND	27.6	33	
01/26/92	39	AQUA	8240	ND	ND	ND	ND	ND	ND	24.5	25	
04/02/92	42	AQUA	8240	ND	ND	ND	7.6	ND	ND	31.2	39	
04/02/92	43	AQUA	8240	ND	ND	ND	10.3	ND	ND	38.9	49	
08/23/92	27	AQUA	8240	ND	ND	ND	5.7	ND	ND	27.0	33	
10/31/92	24	AQUA	8240	ND	ND	ND	ND	ND	ND	17.3	17	
02/06/93	34	AQUA	8240	ND	ND	ND	19.3	ND	ND	28.9	48	
02/06/93	35	AQUA	8240	ND	ND	ND	20.5	ND	ND	36.6	57	
05/11/93	15	AQUA	8240	ND	ND	ND	ND	ND	ND	16.9	17	
08/31/93	13	AQUA	8240	ND	ND	ND	ND	ND	ND	23.7	24	
08/31/93	14	AQUA	8240	ND	ND	ND	ND	ND	ND	22.5	23	
12/02/93	20	AQUA	8240	ND	ND	ND	5.2	ND	ND	34.0	39	
12/02/93	21	AQUA	8240	ND	ND	ND	5.2	ND	ND	35.3	41	
02/19/94	40	AQUA	8240	ND	ND	ND	ND	ND	ND	23.8	24	
05/03/94	19	AQUA	8240	12.8	ND	ND	ND	ND	37.7	16.1	67	
09/15/94	25	AQUA	8240	136	ND	44.6	ND	ND	637	43.2	761	

NOTES:
 OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
 ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.
 NPL - ND U.S. EPA PUBLISHED LEVEL
 P - PROPOSED
 VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER
 ○ - Date Sampled

SHALLOW MONITOR WELLS
 GROUNDWATER QUALITY ANALYSIS
 ORGANIC COMPOUNDS

ALLIEDSIGNAL, INC.
 GROUNDWATER INVESTIGATIONS
 SMITH BEND, INDIANA

trigleason
 associates
 Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S20	S20	S20	S20	S20
				03/20/97	06/04/97	09/23/97	12/09/97	06/09/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	\$20
		DATE	12/14/98
		RESULT TYPE	US-PMCL
			Primary
Benzene		5	< 5.0
Chloroethene		2	< 10
Chloroform		100	< 5.0
1,1-Dichloroethane			< 5.0
1,2-Dichloroethane		5	< 5.0
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	< 5.0
cis-1,2-Dichloroethene		70	< 5.0
Methylene chloride		5	< 5.0
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	< 5.0
Trichloroethene		5	< 5.0
Vinyl Chloride		2	< 10
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S20	S20	S20
		DATE	03/20/97	09/23/97	06/09/98
		RESULT TYPE	US-PMCL Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	S20			
		DATE	03/20/97	09/23/97	06/09/98
		RESULT TYPE	US-PMCL	Primary	Primary
Cyanide		200	< 5	< 5	< 5
Chromium, Dissolved			---	---	< 5
Lead, Dissolved			---	---	< 2.0
Nickel, Dissolved			---	---	< 20
Chromium, Total		100	< 5	---	---
Lead, Total		15	3.6	---	---
Nickel, Total		100	< 20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-20 DATE COLLECTED 13 MAR 96		05 JUN 96		05 SEP 96		11 DEC 96	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	CHLOROETHANE	UG/L	10	U	10	U	10	U	10	U
	CHLOROFORM	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,1-DICHLOROETHANE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,2-DICHLOROETHANE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,1-DICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	METHYLENE CHLORIDE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TETRACHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TOLUENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,1,1-TRICHLOROETHANE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TRICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U
	ACETONE	UG/L	100	U	100	U	100	U	100	U
	XYLENE (TOTAL)	UG/L	10	U	10	U	10	U	10	U
	CARBON DISULFIDE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
TOTAL VOCS:		UG/L	0		0		0		0	
E.METALS	CHROMIUM	UG/L	5	U	-		5.0	U	-	
	LEAD	UG/L	2.0	U	-		2.0	U	-	
	NICKEL	UG/L	20	U	-	5.4	J	-	-	
H.MISC	CYANIDE, TOTAL	UG/L	5	U	-		5	U	-	
	PHENOLS	UG/L	10	U	-		10	U	-	

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.
U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.
NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-20		DATE COLLECTED		06 DEC 94		13 MAR 95		06 JUN 95		20 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q		
A.VOA	BENZENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	CHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U		10 U		10 U	
	1,1-DICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,2-DICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,1-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TRANS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	CIS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	METHYLENE CHLORIDE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TETRACHLOROETHENE	UG/L	-		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TOLUENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,1,1-TRICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TRICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	VINYL CHLORIDE	UG/L	10 U		10 U		10 U		10 U		10 U		10 U		10 U	
	ACETONE	UG/L	100 U		100 U		100 U		100 U		100 U		100 U		100 U	
	XYLENE (TOTAL)	UG/L	10 U		10 U		10 U		10 U		10 U		10 U		10 U	
	TOTAL VOCs:	UG/L	0		0		0		0		0		0		0	
E.METALS	LEAD	UG/L	-		-		-		-		-		2.0 U		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.0 U		-		-		-		-		-	
	NICKEL (DISSOLVED)	UG/L	-		20 U		-		-		-		-		-	
H.MISC	CYANIDE, TOTAL	UG/L	-		19		-		-		-		5 U		-	
	PHENOLS	UG/L	-		10 U		-		-		-		10 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-20				MCL METHOD	NOTES
DATE SAMPLED	SAMPLE NO.	LAB			
11/07/85	30	AQUA			No VOC Detected
02/12/87	9	AQUA			No VOC Detected
06/05/87	18	AQUA			No VOC Detected
09/03/87	18	AQUA			No VOC Detected
01/13/88	7	AQUA			No VOC Detected
02/09/88	19	AQUA			No VOC Detected
05/19/88	19	AQUA			No VOC Detected
09/25/88	23	AQUA			No VOC Detected
09/25/88	24	AQUA			No VOC Detected
12/09/88	5	AQUA			No VOC Detected
03/23/89	8	AQUA			No VOC Detected
06/09/89	22	AQUA	824		No VOC Detected
09/09/89	29	AQUA	8240		No VOC Detected
12/11/89	3	AQUA	8240		No VOC Detected
12/11/89	4	AQUA	8240		No VOC Detected
03/02/90	36	AQUA	8240		No VOC Detected
06/01/90	7	AQUA	8240		No VOC Detected
08/22/90	6	AQUA	8240		No VOC Detected
10/27/90	4	AQUA	8240		No VOC Detected
03/28/91	5	AQUA	8240		No VOC Detected
06/01/91	13	AQUA	8240		No VOC Detected
08/28/91	6	AQUA	8240		No VOC Detected
11/12/91	7	AQUA	8240		No VOC Detected
01/25/92	31	AQUA	8240		No VOC Detected
03/31/92	17	AQUA	8240		No VOC Detected
06/22/92	12	AQUA	8240		No VOC Detected
10/30/92	9	AQUA	8240		No VOC Detected
02/04/93	9	AQUA	8240		No VOC Detected
05/11/93	5	AQUA	8240		No VOC Detected
06/31/93	4	AQUA	8240		No VOC Detected
12/01/93	2	AQUA	8240		No VOC Detected
02/17/94	4	AQUA	8240		No VOC Detected
03/05/94	8	AQUA	8240		No VOC Detected
09/14/94	11	AQUA	8240		No VOC Detected

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.



SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedsignal
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S21						
			DATE	US-PMCL	03/20/97	06/04/97	09/26/97	12/10/97	06/10/98
					Primary	Primary	Primary	Primary	Primary
Benzene	5		<5	<5	<5.0	<5.0	<5.0		
Chloroethene	2		<10	<2	<10	<10	<10		
Chloroform	100		<5	<5	<5.0	<5.0	<5.0		
1,1-Dichloroethane			<5	<5	<5.0	<5.0	<5.0		
1,2-Dichloroethane	5		<5	<5	<5.0	<5.0	<5.0		
1,1-Dichloroethene	7		<5	<5	<5.0	<5.0	<5.0		
trans-1,2-Dichloroethene	100		16	29	20	18	24		
cis-1,2-Dichloroethene	70		22	36	25	23	33		
Methylene chloride	5		<5	<5	<5.0	<5.0	<5.0		
Tetrachloroethene	5		<5	<5	<5.0	<5.0	<5.0		
Toluene	1000		<5	<5	<5.0	<5.0	<5.0		
1,1,1-Trichloroethane	200		<5	<5	<5.0	<5.0	<5.0		
Trichloroethene	5		[28]	[31]	[42]	[46]	[38]		
Vinyl Chloride	2		<10	<2	<10	<10	<10		
Acetone			<100	<100	<100	<100	<100		
Xylene (Total)	10000		<10	<5	<10	<10	<10		
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0		

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	S21
	DATE		12/14/98
	RESULT TYPE	US-PMCL	Primary
Benzene		5	< 5.0
Chloroethene		2	< 10
Chloroform		100	< 5.0
1,1-Dichloroethane			< 5.0
1,2-Dichloroethane		5	< 5.0
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	13
cis-1,2-Dichloroethene		70	22
Methylene chloride		5	< 5.0
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	< 5.0
Trichloroethene		5	[25]
Vinyl Chloride		2	< 10
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S21	S21	S21	
		DATE	03/20/97	09/26/97	06/10/98	
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10	

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S21	S21	S21
		DATE	03/20/97	09/26/97	06/10/98
		RESULT TYPE	Primary	Primary	Primary
		US-PMCL			
Cyanide		200	< 5	< 5	< 5
Chromium, Dissolved			---	---	8.8
Lead, Dissolved			---	---	< 2.0
Nickel, Dissolved			---	---	< 20
Chromium, Total		100	5.6	---	---
Lead, Total		15	3	---	---
Nickel, Total		100	< 20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-21 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	18	18	17	9.3
	CIS-1,2-DICHLOROETHENE	UG/L	25	25	25	15
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	20	21	21	19
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	10 U
TOTAL VOCS:	UG/L	63	64	63	86.3	
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	23	-	0.7	-
	NICKEL	UG/L	10	J	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

SAMPLE ID
S-21
DATE COLLECTED

06 DEC 94

13 MAR 95

06 JUN 95

20 SEP 95

05 DEC 95

GROUP	PARAMETER NAME	UNITS	06 DEC 94		13 MAR 95		06 JUN 95		20 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	5	U								
	CHLOROETHANE	UG/L	10	U		5.0	U	5.0	U		5.0	U
	1,1-DICHLOROETHANE	UG/L	5	U		10	U	10	U		10	U
	1,2-DICHLOROETHANE	UG/L	5	U		5.0	U	5.0	U		5.0	U
	1,1-DICHLOROETHENE	UG/L	5	U		5.0	U	5.0	U		5.0	U
	TRANS-1,2-DICHLOROETHENE	UG/L	5	U		5.0	U	5.0	U		5.0	U
	CIS-1,2-DICHLOROETHENE	UG/L	7.9		18		33		15		15	
	METHYLENE CHLORIDE	UG/L	14		25		38		21		21	
	TETRACHLOROETHENE	UG/L		5	U		5.0	U		5.0	U	
	TOLUENE	UG/L		5	U		5.0	U		5.0	U	
	1,1,1-TRICHLOROETHANE	UG/L		5	U		5.0	U		5.0	U	
	TRICHLOROETHENE	UG/L	16		21		11		15		16	
	VINYL CHLORIDE	UG/L		10	U		10	U		10	U	
	ACETONE	UG/L		100	U		100	U		100	U	
	XYLENE (TOTAL)	UG/L		10	U		10	U		10	U	
TOTAL VOCs:	UG/L		37.9			64			51		52	
E.METALS	LEAD	UG/L		-		-			2.0	U		
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-		2.0	U					
	NICKEL (DISSOLVED)	UG/L		-		20	U					
H.MISC	CYANIDE, TOTAL	UG/L		-		5	U			5	U	
	PHENOLS	UG/L		-		10	U			10	U	

QUALIFIER CODES (Q):

U: THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-21				CIS-1, 2-DICHLOROETHENE	TRANS-1, 2-DICHLOROETHENE	TRI-CHLOROETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-70 UG/L	P-100 UG/L	S UG/L	UG/L	
11/06/85	17	AQJA		ND	116	ND	116	
12/17/85	13	AQJA		ND	69.3	ND	69	
02/11/87	5	AQJA		ND	88.5	ND	89	
05/05/87	17	AQJA		5.0	30.0	ND	35	
06/05/87	18	AQJA		5.8	34.0	ND	40	
09/03/87	14	AQJA		50.0	13.0	ND	63	
01/14/89	11	AQJA		53.2	20.4	ND	74	
02/09/88	22	AQJA		60.0	33.0	ND	93	
03/18/88	13	AQJA		137	11.1	ND	148	
09/23/88	13	AQJA		50.0	49.0	ND	107	
12/08/88	10	AQJA		68.0	32.0	ND	99	
02/23/89	10	AQJA		64.1	32.7	ND	97	
05/09/89	24	AQJA	024	48.3	24.0	ND	72	
09/10/89	41	AQJA	0240	72.5	41.6	ND	114	
12/11/89	9	AQJA	0240	9.3	ND	ND	9	
03/02/90	32	AQJA	0240	90.6	45.0	6.0	131	
06/02/90	15	AQJA	0240	87.3	52.5	ND	140	
08/23/90	10	AQJA	0240	48.4	28.0	6.7	82	
10/20/90	18	AQJA	0240	110	50.7	ND	169	
10/20/90	20	AQJA	0240	107	55.1	ND	163	
03/03/91	28	AQJA	0240	69.3	38.2	ND	108	
06/01/91	18	AQJA	0240	31.1	121	ND	152	
08/28/91	3	AQJA	0240	33.5	21.8	6.1	61	
11/12/91	3	AQJA	0240	33.7	19.7	6.7	60	
01/21/92	2	AQJA	0240	28.2	14.8	ND	43	
03/30/92	8	AQJA	0240	28.8	14.0	7.5	51	
08/26/92	3	AQJA	0240	28.1	14.3	8.4	51	
10/30/92	13	AQJA	0240	47.8	28.0	8.6	84	
02/03/93	3	AQJA	0240	78.1	81.7	5.8	135	
05/11/93	3	AQJA	0240	70.3	55.0	ND	125	
08/31/93	12	AQJA	0240	41.4	33.8	5.1	80	
12/01/93	7	AQJA	0240	79.5	67.8	5.3	153	
02/18/94	3	AQJA	0240	38.8	27.5	5.9	70	
05/04/94	3	AQJA	0240	28.1	18.7	5.4	50	
09/12/94	2	AQJA	0240	11.9	8.3	8.6	28	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

t a gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S22										
			DATE	03/22/97		06/04/97		09/23/97		12/10/97		06/09/98	
				RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Chloroethene			2	<10	<2	<10	<10	<10	<10	<10	<10		
Chloroform			100	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
trans-1,2-Dichloroethene			100	69	91	97	92	71					
cis-1,2-Dichloroethene			70	46	66	64	63	53					
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Toluene			1000	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Vinyl Chloride			2	<10	<2	<10	<10	<10	<10	<10	<10		
Acetone				<100	<100	<100	<100	<100	<100	<100	<100		
Xylene (Total)			10000	<10	<5	<10	<10	<10	<10	<10	<10		
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S22 DATE 12/14/98 Primary
Benzene			5	< 5.0
Chloroethene			2	< 10
Chloroform			100	< 5.0
1,1-Dichloroethane				< 5.0
1,2-Dichloroethane			5	< 5.0
1,1-Dichloroethene			7	< 5.0
trans-1,2-Dichloroethene			100	86
cis-1,2-Dichloroethene			70	59
Methylene chloride			5	< 5.0
Tetrachloroethene			5	< 5.0
Toluene			1000	< 5.0
1,1,1-Trichloroethane			200	< 5.0
Trichloroethene			5	< 5.0
Vinyl Chloride			2	< 10
Acetone				< 100
Xylene (Total)			10000	< 10
Carbon disulfide				< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S22	S22	S22	
		DATE	03/22/97	09/23/97	06/09/98	
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	S22	S22	S22
					03/22/97	09/23/97	06/09/98
					Primary	Primary	Primary
Cyanide				200	< 5	< 5	< 5
Chromium, Dissolved					---	---	< 5
Lead, Dissolved					---	---	< 2.0
Nickel, Dissolved					---	---	< 20
Chromium, Total				100	7.4	---	---
Lead, Total				15	< 2	---	---
Nickel, Total				100	< 20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-22 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U			
	CHLOROETHANE	UG/L	10 U	5.0 U	5.0 U	5.0 U
	CHLOROFORM	UG/L	5.0 U	10 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	92	73	77	70
	METHYLENE CHLORIDE	UG/L	66	55	57	55
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOTAL VOCS:	UG/L	158	128	134	125
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	2.0 U	-	1.6	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-22 DATE COLLECTED						
			08 DEC 94 AMOUNT Q	13 MAR 95 AMOUNT Q	06 JUN 95 AMOUNT Q	20 SEP 95 AMOUNT Q	05 DEC 95 AMOUNT Q		
A.VOA	BENZENE	UG/L	5 U		5.0 U				
	CHLOROETHANE	UG/L	10 U		10 U		5.0 U		5.0 U
	1,1-DICHLOROETHANE	UG/L	5 U		5.0 U		10 U		10 U
	1,2-DICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U
	1,1-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	66		78		79		77
	CIS-1,2-DICHLOROETHENE	UG/L	54		57				53
	METHYLENE CHLORIDE	UG/L	5 U		5.0 U		5.0 U		5.0 U
	TETRACHLOROETHENE	UG/L	-		5.0 U		5.0 U		5.0 U
	TOLUENE	UG/L	5 U		5.0 U		5.0 U		5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U
	TRICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U
	VINYL CHLORIDE	UG/L	10 U		10 U		10 U		10 U
	ACETONE	UG/L	100 U		100 U		100 U		100 U
	XYLENE (TOTAL)	UG/L	10 U		10 U		10 U		10 U
TOTAL VOCS:		UG/L	----- 120	----- 135	----- 79	----- 113	----- 130		
E.METALS	LEAD	UG/L	-	-	-	2.0 U	-	-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-	2.0 U	-	-	-	-	
	NICKEL (DISSOLVED)	UG/L	-	20 U	-	-	-	-	
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-	5 U	-	-	
	PHENOLS	UG/L	-	10 U	-	10 U	-	-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-22				CIS-1, 2-DICHLOROETHENE	TRANS-1, 2-DICHLOROETHENE	SLM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL	P-70	P-100	UG/L	
			METHOD	UG/L	UG/L		
11/06/86	18	AQJA		ND	164	164	
01/07/87	8	AQJA		50	75.8	128	
01/07/87	7	AQJA		50	73.8	124	
02/12/87	8	AQJA		ND	132	132	
02/12/87	7	AQJA		ND	109	109	
06/05/87	28	AQJA		41	69	110	
09/03/87	12	AQJA		57	41	98	
01/13/88	8	AQJA		41.5	ND	42	
02/09/88	23	AQJA		48	61	109	
05/18/88	13	AQJA		77.5	27.7	105	
05/18/88	18	AQJA		82	25.2	107	
09/23/88	22	AQJA		21	45	66	
02/22/89	8	AQJA		43.1	38.8	82	
02/22/89	7	AQJA		35.7	37.5	73	
06/09/89	19	AQJA	824	33	40.7	74	
06/09/89	28	AQJA	824	37.9	42.1	80	
09/08/89	28	AQJA	8240	38.4	45.8	84	
12/11/89	8	AQJA	8240	37.7	68.8	85	
03/01/90	21	AQJA	8240	59.8	74.4	134	
06/01/90	11	AQJA	8240	45.1	71.9	117	
08/22/90	7	AQJA	8240	39.9	60.1	100	
08/22/90	8	AQJA	8240	40.7	61.4	102	
10/27/90	6	AQJA	8240	69.3	82.8	142	
02/28/91	7	AQJA	8240	35.9	48.4	84	
06/01/91	16	AQJA	8240	52.8	168.0	221	
08/28/91	5	AQJA	8240	34.1	61.5	86	
11/13/91	12	AQJA	8240	45.8	78.5	122	
01/25/92	33	AQJA	8240	50.8	85.8	137	
03/31/92	14	AQJA	8240	41.3	64.5	106	
08/22/92	15	AQJA	8240	61.7	100.0	162	
08/22/92	18	AQJA	8240	63.9	91.3	145	
02/04/93	11	AQJA	8240	56.7	91.8	148	
02/04/93	12	AQJA	8240	63.7	96.0	160	
02/10/93	2	AQJA	8240	64.7	80.0	135	
05/11/93	9	AQJA	8240	67.0	90.0	147	
08/31/93	7	AQJA	8240	45.8	78.6	124	A
12/01/93	6	AQJA	8240	65.1	113.0	178	
02/18/94	23	AQJA	8240	46.8	79.1	126	
05/04/94	8	AQJA	8240	38.3	62.1	100	
08/14/94	7	AQJA	8240	64.9	89.7	144	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

NO RESULTS FOR 10/92 SAMPLING EPISODE DUE TO LAB ERROR.

A - METHYLENE CHLORIDE 18.3 UG/L

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedsignal
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		S23	S23	S23	S23	S23
		DATE		03/22/97	06/04/97	09/23/97	12/10/97	06/10/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary
Benzene	5		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethene	2		< 10	< 2	< 10	< 10	< 10	< 10
Chloroform	100		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane			< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane	5		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	7		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene	100		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene	70		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride	5		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	1000		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane	200		< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene	5		< 5	< 5	< 5.0	[5.1]	[5.2]	
Vinyl Chloride	2		< 10	< 2	< 10	< 10	< 10	< 10
Acetone			< 100	< 100	< 100	< 100	< 100	< 100
Xylene (Total)	10000		< 10	< 5	< 10	< 10	< 10	< 10
Carbon disulfide			< 5	< 5	< 5.0	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	S23
	DATE		12/14/98
	RESULT TYPE	US-PMCL	Primary
Benzene		5	< 5.0
Chloroethene		2	< 10
Chloroform		100	< 5.0
1,1-Dichloroethane			< 5.0
1,2-Dichloroethane		5	< 5.0
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	< 5.0
cis-1,2-Dichloroethene		70	< 5.0
Methylene chloride		5	< 5.0
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	< 5.0
Trichloroethene		5	[9.8]
Vinyl Chloride		2	< 10
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S23	S23	S23
			DATE	DATE	DATE
			RESULT TYPE	US-PMCL	Primary
Total Phenols			< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	S23	S23	S23
			DATE	DATE	DATE
RESULT TYPE			Primary	Primary	Primary
Cyanide		200	<5	<5	11
Chromium, Dissolved			---	---	<5
Lead, Dissolved			---	---	<2.0
Nickel, Dissolved			---	---	<20
Chromium, Total		100	<5	---	---
Lead, Total		15	<2	---	---
Nickel, Total		100	<20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-23 DATE COLLECTED 13 MAR 96		05 JUN 96		05 SEP 96		11 DEC 96	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	CHLOROETHANE	UG/L	10	U	10	U	10	U	10	U
	CHLOROFORM	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,1-DICHLOROETHANE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,2-DICHLOROETHANE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,1-DICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	METHYLENE CHLORIDE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TETRACHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TOLUENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	1,1,1-TRICHLOROETHANE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	TRICHLOROETHENE	UG/L	5.0	U	5.0	U	5.0	U	5.0	U
	VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U
	ACETONE	UG/L	100	U	100	U	10	U	10	U
	XYLENE (TOTAL)	UG/L	10	U	10	U	100	U	100	U
	CARBON DISULFIDE	UG/L	5.0	U	5.0	U	10	U	10	U
	TOTAL VOCs:	UG/L	0		0		0		0	
E.METALS	CHROMIUM	UG/L	5	U	-		5.0	U	-	
	LEAD	UG/L	2.0	U	-		2.0	U	-	
	NICKEL	UG/L	7	J	-		20	U	-	
H.MISC	CYANIDE, TOTAL	UG/L	5	U	-		5	U	-	
	PHENOLS	UG/L	10	U	-		10	U	-	

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
 SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID		S-23		DATE COLLECTED		08 DEC 94		15 MAR 95		06 JUN 95		20 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q

A.VOA	BENZENE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	CHLOROETHANE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
	1,1-DICHLOROETHANE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	1,2-DICHLOROETHANE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	1,1-DICHLOROETHENE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	TRANS-1,2-DICHLOROETHENE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	CIS-1,2-DICHLOROETHENE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	METHYLENE CHLORIDE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	TETRACHLOROETHENE	UG/L	-		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	TOLUENE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	1,1,1-TRICHLOROETHANE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	TRICHLOROETHENE	UG/L	5	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
	ACETONE	UG/L	100	U	100	U	100	U	100	U	100	U	100	U	100	U	100	U
	XYLENE (TOTAL)	UG/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
	TOTAL VOCS:	UG/L	0		0		0		0		0		0		0		0	
E.METALS	LEAD	UG/L	-		-		-		-		2.0	U	-		-		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.0	U	-		-		-		-		-		-	
	NICKEL (DISSOLVED)	UG/L	-		20	U	-		-		-		-		-		-	
H.MISC	CYANIDE, TOTAL	UG/L	-		5	U	-		-		5	U	-		-		-	
	PHENOLS	UG/L	-		10	U	-		-		10	U	-		-		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
 NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-23				CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-78 UG/L	P-100 UG/L	UG/L	
11/08/85	10	ADJA		ND	4.5	5	A
01/07/87	8	ADJA		No VOC Detected			
02/11/87	8	ADJA		No VOC Detected			
06/03/87	21	ADJA		No VOC Detected			
09/03/87	13	ADJA		No VOC Detected			
01/13/88	8	ADJA		No VOC Detected			
02/08/88	24	ADJA		No VOC Detected			
03/18/88	17	ADJA		6.4	ND	6	
09/24/88	17	ADJA		No VOC Detected			
12/08/88	7	ADJA		No VOC Detected			
02/22/89	8	ADJA		No VOC Detected			
06/09/89	17	ADJA	024	No VOC Detected			
09/09/89	27	ADJA	0240	No VOC Detected			
12/11/89	7	ADJA	0240	No VOC Detected			
03/02/90	23	ADJA	0240	No VOC Detected			
06/01/90	10	ADJA	0240	No VOC Detected			
08/22/90	9	ADJA	0240	No VOC Detected			
10/27/90	7	ADJA	0240	No VOC Detected			
02/28/91	8	ADJA	0240	No VOC Detected			
06/01/91	17	ADJA	0240	No VOC Detected			
08/28/91	4	ADJA	0240	No VOC Detected			
11/13/91	19	ADJA	0240	No VOC Detected			
03/31/92	15	ADJA	0240	No VOC Detected			
06/22/92	17	ADJA	0240	No VOC Detected			
02/04/93	13	ADJA	0240	No VOC Detected			
02/18/93	3	ADJA	0240	No VOC Detected			
03/11/93	8	ADJA	0240	No VOC Detected			
06/31/93	8	ADJA	0240	No VOC Detected			
12/01/93	8	ADJA	0240	No VOC Detected			
03/29/94	47	ADJA	0240	No VOC Detected			
05/04/94	5	ADJA	0240	No VOC Detected			
09/14/94	6	ADJA	0240	No VOC Detected			

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

MCL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - B19 (2-ETHYLHEXYL) PHTHALATE REPORTED 3.4 UG/L

WELL NOT SAMPLED 01/92.

NO RESULTS FOR 10/92 SAMPLING EPISODE DUE TO LAB ERROR.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

Argleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	S25	S25	S25	S25	S25
			03/20/97	06/04/97	09/23/97	12/10/97	06/09/98
			Primary	Primary	Primary	Primary	Primary
Benzene		5	<5	<5	<5.0	<5.0	<5.0
Chloroethene		2	<10	<2	<10	<10	<10
Chloroform		100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane		5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene		7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene		100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene		70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride		5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene		5	<5	<5	<5.0	<5.0	<5.0
Toluene		1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene		5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride		2	<10	<2	<10	<10	<10
Acetone			<100	<100	<100	<100	<100
Xylene (Total)		10000	<10	<5	<10	<10	<10
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S25 12/14/98 Primary
Benzene			5	<5.0
Chloroethene			2	<10
Chloroform			100	<5.0
1,1-Dichloroethane				<5.0
1,2-Dichloroethane			5	<5.0
1,1-Dichloroethene			7	<5.0
trans-1,2-Dichloroethene			100	<5.0
cis-1,2-Dichloroethene			70	5.2
Methylene chloride			5	<5.0
Tetrachloroethene			5	<5.0
Toluene			1000	<5.0
1,1,1-Trichloroethane			200	<5.0
Trichloroethene			5	<5.0
Vinyl Chloride			2	<10
Acetone				<100
Xylene (Total)			10000	<10
Carbon disulfide				<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S25	S25	S25
DATE	RESULT TYPE	US-PMCL	03/20/97	09/23/97	06/09/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	S25	S25	S25
				03/20/97	09/23/97	06/09/98
				Primary	Primary	Primary
DATE	RESULT TYPE					
Cyanide			200	< 5	< 5	< 5
Chromium, Dissolved				---	---	< 5
Lead, Dissolved				---	---	< 2.0
Nickel, Dissolved				---	---	< 20
Chromium, Total			100	7.3	---	---
Lead, Total			15	[30]	---	---
Nickel, Total			100	< 20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-25 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	3.1 J	3.0 J	2.3 J	3.2 J
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
TOTAL VOCs:	UG/L	3.1	3	2.3	3.2	
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	6.5	-	0.9 J	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10	-	10	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.
U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.
NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

		SAMPLE ID S-25		DATE COLLECTED		08 DEC 94		13 MAR 95		06 JUN 95		20 SEP 95		05 DEC 95	
GROUP	PARAMETER NAME	UNITS	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	
A.VOA	BENZENE	UG/L	5 U		5.0 U				5.0 U				5.0 U		5.0 U
	CHLOROETHANE	UG/L	10 U		10 U				10 U				10 U		10 U
	1,1-DICHLOROETHANE	UG/L	5 U		5.0 U				5.0 U				5.0 U		5.0 U
	1,2-DICHLOROETHANE	UG/L	5 U		5.0 U				5.0 U				5.0 U		5.0 U
	1,1-DICHLOROETHENE	UG/L	5 U		5.0 U				5.0 U				5.0 U		5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U				5.0 U				5.0 U		5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U				5.0 U				5.0 U		5.0 U
	METHYLENE CHLORIDE	UG/L	5 U		5.0 U			3.8	J		2.6	J		3.9	J
	TETRACHLOROETHENE	UG/L	-		5.0 U				5.0 U				5.0 U		5.0 U
	TOLUENE	UG/L	5 U		5.0 U				5.0 U				5.0 U		5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5 U		5.0 U				5.0 U				5.0 U		5.0 U
	TRICHLOROETHENE	UG/L	5 U		5.0 U				5.0 U				5.0 U		5.0 U
	VINYL CHLORIDE	UG/L	10 U		10 U				10 U				10 U		10 U
	ACETONE	UG/L	100 U		100 U				100 U				100 U		100 U
	XYLENE (TOTAL)	UG/L	10 U		10 U				10 U				10 U		10 U
	TOTAL VOCS:	UG/L	0		0			3.8			2.6		3.9		
E.METALS	LEAD	UG/L	-		-				-		5.3		-		-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.0 U				-		-		-		-
	NICKEL (DISSOLVED)	UG/L	-		20 U				-		-		-		-
H.MISC	CYANIDE, TOTAL	UG/L	-		5 U				-		5 U		-		-
	PHENOLS	UG/L	-		10 U				-		10 U		-		-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-25				1,1-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	1,1,2- TRICHLORO- ETHANE	TRANS-1,2 DICHLORO- ETHENE	1,1,1-TRI- CHLORO- ETHANE	TRI- CHLORO- ETHENE	SUM	NOTES	
DATE SAMPLED	SAMPLE NO.	LAB	HCL METHOD	NPL UG/L	5 UG/L	P-70 UG/L	P-100 UG/L	P-100 UG/L	5 UG/L	UG/L		
07/10/87	1	AQUA		No VOC Detected								
09/03/87	11	AQUA		No VOC Detected								
01/15/88	32	AQUA		No VOC Detected								
02/09/88	20	AQUA		No VOC Detected								
05/18/88	18	AQUA		ND	ND	7.3	ND	ND	ND	7		
09/25/88	25	AQUA		No VOC Detected								
12/08/88	8	AQUA	8240	25.2	38.0	79.0	9.9	6.5	9.6	164		
02/22/89	8	AQUA		No VOC Detected								
02/25/89	32	AQUA		No VOC Detected								
08/08/89	21	AQUA	824	No VOC Detected								
09/09/89	28	AQUA	8240	No VOC Detected								
12/11/89	5	AQUA	8240	No VOC Detected								
03/03/90	39	AQUA	8240	No VOC Detected								
06/01/90	9	AQUA	8240	No VOC Detected								
08/22/90	6	AQUA	8240	No VOC Detected								
12/27/90	5	AQUA	8240	No VOC Detected								
02/28/91	8	AQUA	8240	No VOC Detected								
06/01/91	15	AQUA	8240	No VOC Detected								
08/29/91	7	AQUA	8240	No VOC Detected								
11/13/91	13	AQUA	8240	No VOC Detected								
01/25/92	32	AQUA	8240	No VOC Detected								
03/31/92	16	AQUA	8240	No VOC Detected								
08/22/92	14	AQUA	8240	No VOC Detected								
10/30/92	4	AQUA	8240	No VOC Detected								
02/04/93	10	AQUA	8240	No VOC Detected								
05/11/93	7	AQUA	8240	ND	ND	5.3	ND	ND	ND	5		
08/31/93	5	AQUA	8240	ND	ND	6.0	ND	ND	ND	6		
12/01/93	4	AQUA	8240	ND	ND	10.7	ND	ND	ND	11		
02/17/94	5	AQUA	8240	ND	ND	7.3	ND	ND	ND	7		
05/04/94	7	AQUA	8240	ND	ND	5.5	ND	ND	ND	6		
09/14/94	12	AQUA	8240	No VOC Detected								

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

the gleason
associates

Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S27		S27		S27	
			DATE	03/20/97	06/05/97	09/23/97	12/09/97	06/10/98
			RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary
Benzene	5		<5	<5	<5.0	<5.0	<5.0	
Chloroethene	2		<10	<2	<10	<10	<10	
Chloroform	100		<5	<5	<5.0	<5.0	<5.0	
1,1-Dichloroethane			<5	<5	17	26	44	
1,2-Dichloroethane	5		<5	<5	<5.0	<5.0	<5.0	
1,1-Dichloroethene	7		<5	<5	<5.0	<5.0	<5.0	
trans-1,2-Dichloroethene	100		11	15	18	16	14	
cis-1,2-Dichloroethene	70		21	26	31	30	29	
Methylene chloride	5		<5	<5	<5.0	<5.0	<5.0	
Tetrachloroethene	5		<5	<5	<5.0	<5.0	<5.0	
Toluene	1000		<5	<5	<5.0	<5.0	<5.0	
1,1,1-Trichloroethane	200		<5	<5	<5.0	<5.0	<5.0	
Trichloroethene	5		[23]	[25]	[36]	[36]	[32]	
Vinyl Chloride	2		<10	<2	<10	<10	<10	
Acetone			<100	<100	<100	<100	<100	
Xylene (Total)	10000		<10	<5	<10	<10	<10	
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	S27
		DATE		12/14/98
		RESULT TYPE		Primary
Benzene			5	<5.0
Chloroethene			2	<10
Chloroform			100	<5.0
1,1-Dichloroethane				50
1,2-Dichloroethane			5	<5.0
1,1-Dichloroethene			7	[9.9]
trans-1,2-Dichloroethene			100	16
cis-1,2-Dichloroethene			70	29
Methylene chloride			5	<5.0
Tetrachloroethene			5	<5.0
Toluene			1000	<5.0
1,1,1-Trichloroethane			200	<5.0
Trichloroethene			5	[32]
Vinyl Chloride			2	<10
Acetone				<100
Xylene (Total)			10000	<10
Carbon disulfide				<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE		S27	S27	S27
	DATE		03/20/97	09/23/97	06/10/98
	RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	S27	S27	S27
			DATE	DATE	DATE
RESULT TYPE			Primary	Primary	Primary
Cyanide		200	7	<5	<5
Chromium, Dissolved			---	---	<5
Lead, Dissolved			---	---	<2.0
Nickel, Dissolved			---	---	<20
Chromium, Total		100	19	---	---
Lead, Total		15	[52]	---	---
Nickel, Total		100	<20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-27 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U			
	CHLOROETHANE	UG/L	10 U	5.0 U	5.0 U	5.0 U
	CHLOROFORM	UG/L	5.0 U	10 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	21	15	14	15
	METHYLENE CHLORIDE	UG/L	27	23	21	25
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	39	32	27	27
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
TOTAL VOCS:	UG/L	87	70	62	78	
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	3.8	-	5.4	-
	NICKEL	UG/L	20 U	-	6.0	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-27		DATE COLLECTED		08 DEC 94		14 MAR 95		06 JUN 95		20 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q		
A.VOA	BENZENE	UG/L		5 U												
	CHLOROETHANE	UG/L		10 U					5.0 U					5.0 U		5.0 U
	1,1-DICHLOROETHANE	UG/L		5 U					10 U					10 U		10 U
	1,2-DICHLOROETHANE	UG/L		5 U					5.0 U					5.0 U		5.0 U
	1,1-DICHLOROETHENE	UG/L		5 U					5.0 U					5.0 U		5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U					5.0 U					5.0 U		5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	15			17					21		16		20	
	METHYLENE CHLORIDE	UG/L	22			25				24			22		24	
	TETRACHLOROETHENE	UG/L		5 U					5.0 U					5.0 U		5.0 U
	TOLUENE	UG/L		-					5.0 U					5.0 U		5.0 U
	1,1,1-TRICHLOROETHANE	UG/L		5 U					5.0 U					5.0 U		5.0 U
	TRICHLOROETHENE	UG/L		5 U					5.0 U					5.0 U		5.0 U
	VINYL CHLORIDE	UG/L	52			52					41		41		37	
	ACETONE	UG/L		10 U					10 U					10 U		10 U
	XYLENE (TOTAL)	UG/L		100 U					100 U					100 U		100 U
		UG/L		10 U					10 U					10 U		10 U
	TOTAL VOCS:	UG/L	89			94					86		79		81	
E.METALS	LEAD	UG/L		-					-				9.8		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-				2.0 U					-		-	
	NICKEL (DISSOLVED)	UG/L		-				20 U					-		-	
H.MISC	CYANIDE, TOTAL	UG/L		-				5 U					5 U		-	
	PHENOLS	UG/L		-				10 U					10 U		-	

QUALIFIER CODES (Q):

U: THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-27				CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	TRI-CHLOROETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-70 UG/L	P-100 UG/L	S UG/L	UG/L	
07/10/87	8	ADJA		9.4	10	90	109	
09/04/87	28	ADJA		7.9	8	100	116	
01/15/88	33	ADJA		9.8	18	95	125	
02/18/88	32	ADJA		12	15	81	109	
05/19/88	27	ADJA		24.5	18.4	74.5	118	
09/23/88	27	ADJA		11	26	85	122	
12/08/88	2	ADJA		13.3	21	60	114	
02/23/89	12	ADJA		11.1	17	97.1	125	
05/09/89	25	ADJA	824	10.5	12.3	66	109	
09/08/89	18	ADJA	8240	14.8	19.5	78.8	113	
12/11/89	11	ADJA	8240	14.8	20.4	100	135	
02/28/90	11	ADJA	8240	20.4	22.3	83.1	126	
02/28/90	12	ADJA	8240	20	20.8	84.6	126	
05/02/90	17	ADJA	8240	17.4	21.6	84.5	124	
08/24/90	23	ADJA	8240	17.9	17.9	78.0	113	
10/28/90	17	ADJA	8240	20.8	20.9	91.4	132	
02/28/91	9	ADJA	8240	18.1	12.4	76.4	107	
05/01/91	22	ADJA	8240	22.5	60.0	68.7	151	
08/28/91	8	ADJA	8240	14.8	21.8	66.0	93	
11/13/91	18	ADJA	8240	20.8	23.1	84.1	97	
01/25/92	38	ADJA	8240	17.1	18.8	85.2	91	
03/31/92	18	ADJA	8240	18.8	17.8	57.0	91	
08/23/92	25	ADJA	8240	18.5	18.8	58.8	92	
02/04/93	16	ADJA	8240	23.5	19.8	75.3	119	
02/10/93	5	ADJA	8240	28.4	24.2	90.2	143	
05/11/93	5	ADJA	8240	21.4	21.8	58.2	101	
08/31/93	8	ADJA	8240	21.1	21.7	46.5	89	
12/01/93	8	ADJA	8240	59.2	48.3	59.2	159	
02/17/94	8	ADJA	8240	27.3	23.8	ND	51	
05/05/94	18	ADJA	8240	21.1	19.8	34.8	75	
09/14/94	13	ADJA	8240	29.7	18.7	41.0	81	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

MPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

NO RESULTS FOR 10/92 SAMPLING EPISODE DUE TO LAB ERROR.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedsignal
associates

Environmental and Geotechnical Services

INTERMEDIATE MONITORING WELLS

Analytical Summary - VOCs In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	7-50		7-50		7-50	
		DATE	US-PMCL	07/18/97	06/09/98	12/12/98	
				Primary	Primary	Primary	
Benzene		5		<5	<5.0	<5.0	
Chloroethene		2		<2	<10	<10	
Chloroform		100		<5	<5.0	<5.0	
1,1-Dichloroethane				<5	<5.0	<5.0	
1,2-Dichloroethane		5		<5	<5.0	<5.0	
1,1-Dichloroethene		7		<5	<5.0	<5.0	
trans-1,2-Dichloroethene		100		<5	<5.0	<5.0	
cis-1,2-Dichloroethene		70		<5	<5.0	<5.0	
Methylene chloride		5		<5	<5.0	<5.0	
Tetrachloroethene		5		<5	<5.0	<5.0	
Toluene		1000		<5	<5.0	<5.0	
1,1,1-Trichloroethane		200		<5	<5.0	<5.0	
Trichloroethene		5		<5	<5.0	<5.0	
Vinyl Chloride		2		<2	<10	<10	
Acetone				<100	<100	<100	
Xylenes (Total)		10000		<5	<10	<10	
Carbon disulfide				<5	<5.0	<5.0	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Intermediate Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	7-50
		DATE	06/09/98
		RESULT TYPE	US-PMCL
			Primary
Total Phenols			< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics In Groundwater
 Intermediate Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	7-50
	DATE		06/09/98
	RESULT TYPE		Primary
Cyanide		200	< 5
Chromium, Dissolved			< 5
Lead, Dissolved			< 2.0
Nickel, Dissolved			< 20
Chromium, Total		100	---
Lead, Total		15	---
Nickel, Total		100	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

7500CHW
25-Oct-88

PRIORITY POLLUTANTS VOLATILE ORGANIC COMPOUNDS (VOC)													OTHER ORGANIC COMPOUNDS							
1,1-DI-	1,2-DI-	1,1-DI-	TRANS-1,2	1,1,1-	DI-	TRI-	TRI-	1,2 DI-												
CHLORO-	CHLORO-	CHLORO-	CHLORO-	CHLORO-	CHLORO-	CHLORO-	CHLORO-	VINYL	CHLORO-									CIS-1, 2-		
ETHANE	ETHANE	ETHYLENE	ETHYLENE	ETHANE	ETHYLENE	PROPANE	CHLORIDE	FORM	TOLUENE	ETHENE										
UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
7-50	11/07/86	32	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			

NOTES:
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.
VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

TABLE 5
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS
PAGE 10 OF 43
MONITOR WELLS
GROUNDWATER INVESTIGATIONS
ALLIED CORPORATION
SOUTH BEND, INDIANA
PROJECT # ALCPX SBIN 013
T A GLEASON ASSOCIATES
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	8D					
		US-PMCL	03/21/97	06/03/97	09/24/97	12/08/97	06/11/98
			Primary	Primary	Primary	Primary	Primary
Benzene		5	<5	<5	<5.0	<5.0	<5.0
Chloroethene		2	<10	<2	<10	<10	<10
Chloroform		100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane		5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene		7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene		100	27	35	23	21	29
cis-1,2-Dichloroethene		70	[230]	[310]	[240]	[220]	[260]
Methylene chloride		5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene		5	<5	<5	<5.0	<5.0	<5.0
Toluene		1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene		5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride		2	<10	<2	<10	<10	<10
Acetone			<100	<100	<100	<100	<100
Xylene (Total)		10000	<10	<5	<10	<10	<10
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	8D
	DATE	12/12/98
	RESULT TYPE	US-PMCL
		Primary
Benzene	5	< 5.0
Chloroethene	2	< 10
Chloroform	100	< 5.0
1,1-Dichloroethane		< 5.0
1,2-Dichloroethane	5	< 5.0
1,1-Dichloroethene	7	< 5.0
trans-1,2-Dichloroethene	100	32
cis-1,2-Dichloroethene	70	[220]
Methylene chloride	5	[7.2] B
Tetrachloroethene	5	< 5.0
Toluene	1000	< 5.0
1,1,1-Trichloroethane	200	< 5.0
Trichloroethene	5	< 5.0
Vinyl Chloride	2	< 10
Acetone		< 100
Xylene (Total)	10000	< 10
Carbon disulfide		< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

Analytical Summary - Phenols In Groundwater
 Intermediate Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	8D	8D	8D
		DATE	03/21/97	09/24/97	06/11/98
		RESULT TYPE	US-PMCL Primary	Primary	Primary
Total Phenols			< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	8D	8D	8D
RESULT TYPE	US-PMCL	Primary	Primary	Primary
Cyanide	200	161	90	110
Chromium, Dissolved		---	---	13
Lead, Dissolved		---	---	< 2.0
Nickel, Dissolved		---	---	< 20
Chromium, Total	100	11	---	---
Lead, Total	15	< 2	---	---
Nickel, Total	100	< 20	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Intermediate Monitoring Well

SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 8-D DATE COLLECTED			
			12 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	12 DEC 96 AMOUNT Q
A.VOA	1,2-DICHLOROETHANE	UG/L	10 U			
	1,1-DICHLOROETHENE	UG/L	10 U	25 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	6.9 J	25 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	97	30	23	21
	TOLUENE	UG/L		270	240	200
	TRICHLOROETHENE	UG/L	10 U	25 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	25 U	5.0 U	5.0 U
	CARBON DISULFIDE	UG/L	20 U	50 U	10 U	10 U
			UG/L	10 U	25 U	5.0 U
TOTAL VOCS:	UG/L	103.9	300	263	221	
E.METALS	LEAD	UG/L	2.0 U	-	1.6 J	-
	NICKEL	UG/L	20 U	-	5.8 J	-
H.MISC	CYANIDE, TOTAL	UG/L	220	-	180	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

Intermediate Monitoring Well

SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 8-D DATE COLLECTED					
			07 DEC 94 AMOUNT Q	14 MAR 95 AMOUNT Q	07 JUN 95 AMOUNT Q	19 SEP 95 AMOUNT Q	06 DEC 95 AMOUNT Q	
A.VOA	1,2-DICHLOROETHANE	UG/L		5 U	5.0 U	10 U		
	1,1-DICHLOROETHENE	UG/L		5 U	5.0 U		10 U	10 U
	TRANS-1,2-DICHLOROETHENE	UG/L	33		18	2.6 J	10 U	10 U
	CIS-1,2-DICHLOROETHENE	UG/L	244		200	34	9.6 J	19
	TRICHLOROETHENE	UG/L		5 U	5.0 U	270	89	180
	VINYL CHLORIDE	UG/L		10 U	10 U	6.9 J	10 U	10 U
TOTAL VOCS:	UG/L	277		218	313.5	98.6	199	
E.METALS	LEAD	UG/L	-	-	-	1.8 J	-	-
H.MISC	CYANIDE, TOTAL	UG/L	-	1100	-	250	-	-

QUALIFIER CODES (Q):

U: THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
 NOTE: THIS DATA DID NOT UNDERGO AN ERN QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: B-0

DATE	SAMPLE NO.	LAB	METHOD	MCL	CONCENTRATION (ug/L)					
					1,1-D1-ETHENE	1,1-D1-ETHENE	1,1-D1-ETHENE	1,1-D1-ETHENE	1,1-D1-ETHENE	1,1-D1-ETHENE
07/10/87	5	AQUA		NO	720	27	10	10	747	10
09/01/87	30	AQUA		NO	800	NO	NO	800	NO	NO
01/15/88	28	AQUA		NO	840	NO	NO	840	NO	NO
01/19/88	29	AQUA		NO	855	NO	NO	855	NO	NO
02/09/88	13	AQUA		NO	770	NO	NO	770	NO	NO
02/09/88	14	AQUA		NO	630	NO	NO	630	NO	NO
05/19/88	23	AQUA		NO	1608	24	10	1692	10	10
09/24/88	19	AQUA		NO	420	32	20	472	20	20
12/10/88	32	AQUA		NO VOC Detected						
02/29/89	35	AQUA		NO	570	33.1	10	24.5	628	10
06/08/89	11	AQUA	624	NO	600	37.2	10.3	656	10.3	10.3
09/10/89	35	AQUA		5.4	560	35.6	NO	619	17.7	NO
12/13/89	33	AQUA		NO	440	27.5	NO	460	NO	NO
12/13/89	34	AQUA		NO	440	27.5	NO	460	NO	NO
03/02/90	15	AQUA		NO	780	41.5	NO	833	11.6	NO
06/03/90	22	AQUA		NO	430	35.6	NO	466	NO	NO
10/23/90	15	AQUA		NO VOC Detected						
02/29/90	31	AQUA		NO	448	42.3	NO	513	16.6	NO
03/01/91	21	AQUA		NO	336	31.2	NO	379	12.2	NO
06/01/91	11	AQUA		NO	555	62.0	NO	417	NO	NO
06/01/91	12	AQUA		NO	332	67.8	NO	400	NO	NO
08/31/91	34	AQUA		NO	309	33.8	NO	340	NO	NO
11/14/91	35	AQUA		NO	323	30.8	NO	354	NO	NO
01/26/92	36	AQUA		NO	324	39.6	NO	364	NO	NO
04/02/92	41	AQUA		NO	403	59.8	NO	463	NO	NO
08/21/92	9	AQUA		NO	430	45.7	NO	476	NO	NO
10/31/92	23	AQUA		NO	318	31.3	NO	349	NO	NO
02/05/93	33	AQUA		NO	340	29.9	NO	370	NO	NO
03/12/93	24	AQUA		NO	375	47.7	NO	423	NO	NO
09/02/93	31	AQUA		NO	282	40.5	NO	323	NO	NO
09/02/93	32	AQUA		NO	288	42.0	NO	330	NO	NO
12/02/93	23	AQUA		NO	344	58.5	NO	409	NO	NO
02/18/94	21	AQUA		NO	247	27.6	NO	273	NO	NO
02/18/94	22	AQUA		NO	324	35.1	NO	359	NO	NO
05/06/94	28	AQUA		NO	240	29.2	NO	269	NO	NO
09/19/94	22	AQUA		NO	260	32.2	NO	292	NO	NO

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

NO - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL.

P - PROPOSED.

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

Intermediate Monitoring Well
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIESTON INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

It. O'Brien
Associates
Environmental and Geotechnical Services

DEEP MONITORING WELLS

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	2D	2D	2D	2D	2D
				03/22/97	06/03/97	09/23/97	12/08/97	06/11/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	[12]	[16]	[14]	[10]	[7.9]
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	10	17	16	15	15
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	2D
	DATE	12/12/98
	RESULT TYPE	US-PMCL
		Primary
Benzene		< 5.0
Chloroethene		< 10
Chloroform		< 5.0
1,1-Dichloroethane		< 5.0
1,2-Dichloroethane		[7.8]
1,1-Dichloroethene		< 5.0
trans-1,2-Dichloroethene		< 5.0
cis-1,2-Dichloroethene		18
Methylene chloride		< 5.0
Tetrachloroethene		< 5.0
Toluene		< 5.0
1,1,1-Trichloroethane		< 5.0
Trichloroethene		< 5.0
Vinyl Chloride		< 10
Acetone		< 100
Xylene (Total)		< 10
Carbon disulfide		< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	2D	2D	2D
		DATE	03/22/97	09/23/97	06/11/98
		RESULT TYPE	US-PMCL	Primary	Primary
Total Phenols			< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed
 For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	2D	2D	2D
	DATE	03/22/97	09/23/97	06/11/98
	RESULT TYPE	US-PMCL	Primary	Primary
Cyanide		200	< 5	< 5
Chromium, Dissolved			---	7.6
Lead, Dissolved			---	< 2.0
Nickel, Dissolved			---	< 20
Chromium, Total		100	9.4	---
Lead, Total		15	< 2	---
Nickel, Total		100	< 20	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

DEEP MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 2-D DATE COLLECTED			
			14 MAR 95 AMOUNT Q	07 JUN 95 AMOUNT Q	19 SEP 95 AMOUNT Q	06 DEC 95 AMOUNT Q
A.VOA	1,2-DICHLOROETHANE	UG/L	18	16		
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	16
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	17	14	11	14
	TRICHLOROETHENE	UG/L	24	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
TOTAL VOCS:	UG/L	59	30	11	30	
E.METALS	LEAD	UG/L	-	-	2.0 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-

QUALIFIER CODES (Q):

U: THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

DEEP MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID		DATE COLLECTED		12 MAR 96		04 JUN 96		05 SEP 96		12 DEC 96	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	1,2-DICHLOROETHANE	UG/L	16		15		14		15		13		13	
	1,1-DICHLOROETHENE	UG/L		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	17		15		11		11		13		13	
	TOLUENE	UG/L		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U
	TRICHLOROETHENE	UG/L		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U
	VINYL CHLORIDE	UG/L		10 U		10 U		10 U		10 U		10 U		10 U
	CARBON DISULFIDE	UG/L		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U
	TOTAL VOCS:	UG/L	33		30		25		25		28		28	
E.METALS	LEAD	UG/L	9.4					2.0 U						
	NICKEL	UG/L		20 U				20 U						
H.MISC	CYANIDE, TOTAL	UG/L		5 U				5 U						
	PHENOLS	UG/L	10					10 U						

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.
U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.
NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SOURCE: 2-D				1,2-DI- CHLORO- ETHANE	CIS-1,2- DICHLORO- ETHENE	TRI- CHLORO- ETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL	5	P-70	5		
			METHOD	UG/L	UG/L	UG/L	UG/L	
12/10/86	2	AQUA		20.4	ND	ND	20	
06/05/87	11	AQUA		25	ND	ND	25	
09/03/87	19	AQUA		24	ND	ND	24	
01/15/88	34	AQUA		34	ND	ND	34	
02/09/88	11	AQUA		25	ND	ND	25	
05/10/88	24	AQUA		34.2	ND	ND	34	
09/24/88	20	AQUA		28	ND	ND	28	
12/10/88	27	AQUA		22	ND	ND	22	
12/10/88	28	AQUA		21.4	ND	ND	21	
02/24/89	19	AQUA		24.8	13.4	ND	38	
06/06/89	18	AQUA	024	26.8	22.4	ND	49	
09/09/89	31	AQUA	0240	22.6	24.6	ND	47	
12/13/89	30	AQUA	0240	21	14.6	ND	36	
03/01/90	20	AQUA	0240	23.8	31.8	ND	56	
06/03/90	20	AQUA	0240	20.8	26.3	ND	47	
08/23/90	19	AQUA	0240	18.0	17.7	ND	34	
10/29/90	27	AQUA	0240	20.8	26.8	ND	47	
10/20/90	28	AQUA	0240	19.4	25.1	ND	45	
03/02/91	26	AQUA	0240	14.7	13.7	ND	28	
03/30/91	4	AQUA	0240	14.7	5.1	ND	20	
08/31/91	35	AQUA	0240	15.8	14.8	ND	30	
11/14/91	41	AQUA	0240	18.8	12.7	ND	20	
01/24/92	25	AQUA	0240	18.2	9.3	ND	28	
04/02/92	46	AQUA	0240	17.4	12.2	ND	30	
08/21/92	7	AQUA	0240	23.6	13.1	ND	37	
10/31/92	33	AQUA	0240	ND	9.4	16.0	25	
02/05/93	31	AQUA	0240	22.8	21.3	ND	44	
05/12/93	37	AQUA	0240	17.8	11.1	ND	29	
08/02/93	28	AQUA	0240	20.8	11.1	ND	31	
12/03/93	31	AQUA	0240	21.2	15.7	ND	37	
02/10/94	28	AQUA	0240	19.1	12.8	ND	32	
05/06/94	30	AQUA	0240	13.9	10.8	ND	25	
09/13/94	9	AQUA	0240	18.8	11.3	ND	28	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

DEEP MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSONAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedson
associates

Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	4D
	DATE	06/10/98
RESULT TYPE	US-PMCL	Primary
Benzene	5	< 5.0
Chloroethene	2	< 10
Chloroform	100	< 5.0
1,1-Dichloroethane		< 5.0
1,2-Dichloroethane	5	< 5.0
1,1-Dichloroethene	7	< 5.0
trans-1,2-Dichloroethene	100	< 5.0
cis-1,2-Dichloroethene	70	14
Methylene chloride	5	< 5.0
Tetrachloroethene	5	< 5.0
Toluene	1000	< 5.0
1,1,1-Trichloroethane	200	< 5.0
Trichloroethene	5	< 5.0
Vinyl Chloride	2	< 10
Acetone		< 100
Xylene (Total)	10000	< 10
Carbon disulfide		< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	4D	4D
DATE	US-PMCL	06/10/98	06/10/98
RESULT TYPE		Primary	Duplicate
Total Phenols		< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	4D	4D	
				DATE
	RESULT TYPE	US-PMCL	Primary	Duplicate
Cyanide		200	< 5 UJ	19
Chromium, Dissolved			< 5	< 5
Lead, Dissolved			< 2.0	< 2.0
Nickel, Dissolved			< 20	< 20
Chromium, Total		100	---	---
Lead, Total		15	---	---
Nickel, Total		100	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

400CMW
25-Oct-88

WELL NO.	DATE	SAMPLE #	LAB	PRIORITY POLLUTANTS VOLATILE ORGANIC COMPOUNDS (VOC)								OTHER ORGANIC COMPOUNDS			
				1,1-DI- ETHANE	1,2-DI- ETHANE	1,1-DI- ETHYLENE	DI- ETHYLENE	TRANS-1,2 ETHYLENE	1,1- ETHANE	TRI- ETHYLENE	TRI- PROPANE	1,2 DI- CHLORIDE	VINYL CHLORIDE	CHLORO- FORM	TOLUENE
				UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
4-D	10/14/86	31	AQUA	ND	ND	ND	11.4	ND	ND	ND	ND	ND	ND		
	01/07/87	5	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	02/11/87	2	AQUA	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND		
	06/05/87	14	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	09/04/87	21	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.8		
	01/14/88	21	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	02/09/88	17	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.8		
	03/14/88	1	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	11.3**	8.0		
	05/18/88	12	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	18.0		
													33.4		
	09/24/88	16	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.2		

NOTES:
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.

**NOTE: TOLUENE WAS NOT DETECTED IN 6 PREVIOUS SAMPLINGS. A RESAMPLING ON 3/14/88 DETECTED NO TOLUENE. BASED ON PREVIOUS DATA & THE RETEST, WE CONCLUDE THAT THE 2/9/88 SAMPLING DATA IS AN ANOMOLY.

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

TABLE 5

GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS
PAGE 4 OF 43
MONITOR WELLS

GROUNDWATER INVESTIGATIONS
ALLIED CORPORATION
SOUTH BEND, INDIANA
PROJECT # ALCHPX SBIN 013

T A GLEASON ASSOCIATES
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	5D	5D	5D	5D	5D
				03/20/97	06/04/97	09/24/97	12/10/97	06/10/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0 E	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	5D		
		DATE	DATE	
		RESULT TYPE	US-PMCL	Duplicate
Benzene		5	< 5.0	< 5.0
Chloroethene		2	< 10	< 10
Chloroform		100	< 5.0	< 5.0
1,1-Dichloroethane			< 5.0	< 5.0
1,2-Dichloroethane		5	< 5.0	< 5.0
1,1-Dichloroethene		7	< 5.0	< 5.0
trans-1,2-Dichloroethene		100	< 5.0	< 5.0
cis-1,2-Dichloroethene		70	< 5.0	< 5.0
Methylene chloride		5	< 5.0	< 5.0
Tetrachloroethene		5	< 5.0	< 5.0
Toluene		1000	< 5.0	< 5.0
1,1,1-Trichloroethane		200	< 5.0	< 5.0
Trichloroethene		5	< 5.0	< 5.0
Vinyl Chloride		2	< 10	< 10
Acetone			< 100	< 100
Xylene (Total)		10000	< 10	< 10
Carbon disulfide			< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	5D	5D	5D	5D
	DATE	03/20/97	09/24/97	06/10/98	06/10/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary	Duplicate
Total Phenols		<10	<10	<10	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	5D	5D	5D	5D
			DATE	DATE	DATE	DATE
			RESULT TYPE	Primary	Primary	Primary
Cyanide		200	< 5	< 5	< 5	< 5
Chromium, Dissolved			---	---	< 5	< 5
Lead, Dissolved			---	---	< 2.0	< 2.0
Nickel, Dissolved			---	---	< 20	< 20
Chromium, Total		100	< 5	---	---	---
Lead, Total		15	< 2	---	---	---
Nickel, Total		100	< 20	---	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

DEEP MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 5-D DATE COLLECTED			
			13 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	3.3 J	3.2 J	3.0 J	3.0 J
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
TOTAL VOCS:	UG/L	3.3	3.2	3.0	3.0	
E.METALS	LEAD	UG/L	2.0 U	-	0.8 J	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

DEEP MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 5-D DATE COLLECTED 07 DEC 94		13 MAR 95		06 JUN 95		20 SEP 95		05 DEC 95		
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	
A.VOA	1,2-DICHLOROETHANE	UG/L	5	U									
	1,1-DICHLOROETHENE	UG/L	5	U		5.0	U	5.0	U	5.0	U	5.0	U
	TRANS-1,2-DICHLOROETHENE	UG/L	5	U		5.0	U	5.0	U	5.0	U	5.0	U
	CIS-1,2-DICHLOROETHENE	UG/L	5	U		5.0	U	5.0	U	5.0	U	5.0	U
	TRICHLOROETHENE	UG/L	5	U		5.0	U	3.4	J	2.8	J	3.0	J
	VINYL CHLORIDE	UG/L	5	U	16		5.0	U		5.0	U	5.0	U
		UG/L	10	U		10	U	10	U	10	U	10	U
	TOTAL VOCs:	UG/L	0		16		3.4		2.8		3.0		
E.METALS	LEAD	UG/L	-		-		-		2.0	U	-		
H.MISC	CYANIDE, TOTAL	UG/L	-		5	U	-		5	U	-		

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: 5-0				CIS-1,2-DICHLORO-ETHYLENE	TOLUENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-7a UG/L	P-2000 UG/L	UG/L	
12/18/86	4	ADJA		10	ND	10	
12/18/86	5	ADJA		10	ND	10	
02/11/87	4	ADJA		No VOC Detected			
06/03/87	19	ADJA		No VOC Detected			
09/03/87	13	ADJA		No VOC Detected			
01/14/88	12	ADJA		No VOC Detected			
02/09/88	21	ADJA		ND	6.7	7	A
03/14/88	2	ADJA		6.1	ND	6	
05/18/88	14	ADJA		10.4	ND	10	
09/23/88	15	ADJA		No VOC Detected			
12/08/88	9	ADJA		No VOC Detected			
02/23/89	31	ADJA		5.4	ND	5	
06/09/89	23	ADJA	824	No VOC Detected			
09/10/89	36	ADJA	8240	5.5	ND	6	
12/11/89	8	ADJA	8240	7.5	ND	8	
02/28/90	9	ADJA	8240	6.2	ND	6	
06/02/90	14	ADJA	8240	6.4	ND	6	
08/24/90	20	ADJA	8240	No VOC Detected			
10/26/90	21	ADJA	8240	5.7	ND	6	
03/03/91	27	ADJA	8240	No VOC Detected			
05/30/91	2	ADJA	8240	No VOC Detected			
08/28/91	2	ADJA	8240	No VOC Detected			
11/12/91	2	ADJA	8240	No VOC Detected			
01/21/92	1	ADJA	8240	No VOC Detected			
03/30/92	7	ADJA	8240	No VOC Detected			
08/28/92	2	ADJA	8240	No VOC Detected			
10/30/92	12	ADJA	8240	No VOC Detected			
02/03/93	2	ADJA	8240	No VOC Detected			
05/11/93	1	ADJA	8240	No VOC Detected			
08/31/93	11	ADJA	8240	No VOC Detected			
12/01/93	1	ADJA	8240	No VOC Detected			
02/16/94	2	ADJA	8240	No VOC Detected			
05/04/94	2	ADJA	8240	No VOC Detected			
09/12/94		ADJA	8240	No VOC Detected			

NOTES:
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.
NPL - NO U.S. EPA PUBLISHED LEVEL
P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - TOLUENE WAS NOT DETECTED IN 6 PREVIOUS SAMPLING EPISODES. A RESAMPLING ON 03/14/88 DETECTED NO TOLUENE. BASED ON PREVIOUS DATA & THE RETEST, WE CONCLUDED THAT THE 02/09/88 SAMPLING DATA ARE ANOMALOUS.



DEEP MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

ha gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	D5	D5	D5
				06/11/98	12/12/98	12/12/98
				Primary	Primary	Duplicate
Benzene			5	< 5.0	< 5.0	< 5.0
Chloroethene			2	< 10	< 10	< 10
Chloroform			100	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane				< 5.0	< 5.0	< 5.0
1,2-Dichloroethane			5	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene			7	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene			100	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene			70	< 5.0	< 5.0	< 5.0
Methylene chloride			5	< 5.0	< 5.0	< 5.0
Tetrachloroethene			5	< 5.0	< 5.0	< 5.0
Toluene			1000	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane			200	< 5.0	< 5.0	< 5.0
Trichloroethene			5	< 5.0	< 5.0	< 5.0
Vinyl Chloride			2	< 10	< 10	< 10
Acetone				< 100	< 100	< 100
Xylene (Total)			10000	< 10	< 10	< 10
Carbon disulfide				< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
Deep Monitoring Wells
Quarterly Monitoring Program - 12/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	D5
		DATE	06/11/98
		RESULT TYPE	US-PMCL
			Primary
Total Phenols			< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	D5
		DATE	06/11/98
		RESULT TYPE	US-PMCL
			Primary
Cyanide		200	< 5
Chromium, Dissolved			< 5
Lead, Dissolved			< 2.0
Nickel, Dissolved			< 20
Chromium, Total		100	---
Lead, Total		15	---
Nickel, Total		100	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

D50CPW
25-Oct-88

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)													OTHER ORGANIC COMPOUNDS			
1,1-DI-	1,2-DI-	1,1-DI-	DI-	TRI-	TRI-	1,2-DI-							CIS-1,2-	BASE	BIS	
CHLORO-	CHLORO-	CHLORO-	CHLORO-	CHLORO-	CHLORO-	CHLORO-	VINYL	CHLORO-					DICHLORO-	NEUTRAL	(2-ETHYLNEXYL)	
ETHANE	ETHANE	ETHYLENE	ETHYLENE	ETHANE	ETHYLENE	PROPANE	CHLORIDE	FORM					TOLUENE	ETHENE	COMPOUNDS	PHthalate
UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
D-5	11/06/86	22	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		4.6
	12/18/86	22	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	3.3

NOTES:
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.
VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	D7	D7	D7	D7	D7
			03/22/97	06/03/97	09/24/97	12/11/97	06/09/98
			Primary	Primary	Primary	Primary	Primary
Benzene		5	<5	<5	<5.0	<5.0	<5.0
Chloroethene		2	<10	<2	<10	<10	<10
Chloroform		100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane		5	[13]	[14]	[14]	[14]	<5.0
1,1-Dichloroethene		7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene		100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene		70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride		5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene		5	<5	<5	<5.0	<5.0	<5.0
Toluene		1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene		5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride		2	<10	<2	<10	<10	<10
Acetone			<100	<100	<100	<100	<100
Xylene (Total)		10000	<10	<5	<10	<10	<10
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	D7
		DATE	12/13/98
		RESULT TYPE	US-PMCL
			Primary
Benzene		5	< 5.0
Chloroethene		2	< 10
Chloroform		100	< 5.0
1,1-Dichloroethane			< 5.0
1,2-Dichloroethane		5	[23]
1,1-Dichloroethene		7	< 5.0
trans-1,2-Dichloroethene		100	< 5.0
cis-1,2-Dichloroethene		70	< 5.0
Methylene chloride		5	< 5.0
Tetrachloroethene		5	< 5.0
Toluene		1000	< 5.0
1,1,1-Trichloroethane		200	< 5.0
Trichloroethene		5	< 5.0
Vinyl Chloride		2	< 10
Acetone			< 100
Xylene (Total)		10000	< 10
Carbon disulfide			< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Inorganics In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	D7	D7	D7
RESULT TYPE	US-PMCL	Primary	Primary	Primary	
Cyanide	200	<5	<5	<5	
Chromium, Dissolved		---	---	<5	
Lead, Dissolved		---	---	<2.0	
Nickel, Dissolved		---	---	<20	
Chromium, Total	100	<5	---	---	
Lead, Total	15	<2	---	---	
Nickel, Total	100	<20	---	---	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	D7	D7	D7
RESULT TYPE	US-PMCL	Primary	Primary	Primary	
Total Phenols		10	< 10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

DEEP MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID D-7			
			DATE COLLECTED 12 MAR 96	04 JUN 96	04 SEP 96	10 DEC 96
			AMOUNT	AMOUNT	AMOUNT	AMOUNT
A.VOA	1,2-DICHLOROETHANE	UG/L	19	15	15	20
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOTAL VOCS:	UG/L	19	15	15	20
E.METALS	LEAD	UG/L	2.0 U	-	0.6 J	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SOURCE: D-7				1,2-DI- CHLORO- ETHENE	CIS-1,2- DICHLORO- ETHENE	TRANS-1,2 DICHLORO- ETHENE	VINYL CHLORIDE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL	5	P-70	P-100	2		
			METHOD	UG/L	UG/L	UG/L	UG/L	UG/L	
10/01/85	10	AQJA		689	ND	20.2	ND	709	
11/09/85	28	AQJA		437	ND	15.7	ND	453	
01/07/87	9	AQJA		802	40	ND	ND	842	
02/12/87	14	AQJA		812	ND	30	ND	842	
05/03/87	9	AQJA		690	33	ND	ND	923	
06/05/87	10	AQJA		800	31	ND	ND	931	
09/03/87	17	AQJA		800	ND	ND	ND	800	
09/03/87	18	AQJA		750	ND	ND	ND	750	
01/14/88	14	AQJA		710	30	ND	ND	740	
02/08/88	18	AQJA		680	ND	ND	ND	680	
07/18/88	28	AQJA		1103	48.2	ND	19.1	1232	
09/24/88	29	AQJA		780	26	ND	ND	806	
12/09/88	15	AQJA		483	22.1	ND	10	515	
12/09/88	17	AQJA		435	21.8	ND	10	467	
02/24/89	21	AQJA		380	18.4	ND	ND	398	
05/10/89	35	AQJA	624	310	15.3	ND	ND	326	
09/09/89	30	AQJA	8240	300	14	ND	ND	314	
12/12/89	24	AQJA	8240	290	10.8	ND	ND	301	
03/01/90	22	AQJA	8240	340	15.3	ND	ND	355	
05/03/90	27	AQJA	8240	340	11.8	ND	ND	352	
08/23/90	17	AQJA	8240	284	9.3	ND	ND	293	
10/27/90	18	AQJA	8240	437	12.9	ND	ND	450	
03/01/91	16	AQJA	8240	239	17.7	ND	ND	257	
05/01/91	19	AQJA	8240	227	ND	ND	ND	227	
08/31/91	29	AQJA	8240	151	6.7	ND	ND	158	
11/13/91	14	AQJA	8240	123	8.4	ND	ND	131	
01/23/92	18	AQJA	8240	148	5.5	ND	ND	155	
04/01/92	39	AQJA	8240	78.5	ND	ND	ND	79	
08/23/92	38	AQJA	8240	82.1	ND	ND	ND	82	
10/30/92	14	AQJA	8240	60.8	ND	ND	ND	61	
02/03/93	8	AQJA	8240	89.4	ND	ND	ND	89	
05/12/93	38	AQJA	8240	34.8	ND	ND	ND	35	
08/31/93	19	AQJA	8240	20.4	ND	ND	ND	20	
12/03/93	30	AQJA	8240	11.8	ND	ND	ND	11	
02/17/94	11	AQJA	8240	13.4	ND	ND	ND	13	
02/17/94	12	AQJA	8240	13.6	ND	ND	ND	14	
05/03/94	15	AQJA	8240	19.0	ND	ND	ND	19	
09/14/94	15	AQJA	8240	18.3	ND	ND	ND	19	
09/14/94	18	AQJA	8240	18.8	ND	ND	ND	20	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Data Sampled

Intermediate Monitoring Well
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

Tagleason
associates
Environmental and Geotechnical Services

DEEP MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID D-7 DATE COLLECTED				
			07 DEC 94 AMOUNT Q	14 MAR 95 AMOUNT Q	07 JUN 95 AMOUNT Q	19 SEP 95 AMOUNT Q	05 DEC 95 AMOUNT Q
A.VOA	1,2-DICHLOROETHANE	UG/L	25	24	21	14	18
	1,1-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U	10 U
TOTAL VOCS:	UG/L	25	24	21	14	18	
E.METALS	LEAD	UG/L	-	-	-	2.0 U	-
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-	5 U	-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	E3 03/18/97		E3 06/04/97		E3 09/26/97	
			Primary	Duplicate	Primary	Primary	Duplicate	
			RESULT TYPE					
Benzene		5	<5	<5	<5	[5.0] J	<5.0 UJ	
Chloroethene		2	[17]	[18]	[24]	[32]	[20]	
Chloroform		100	<5	<5	<5	<5.0	<5.0	
1,1-Dichloroethane			<5	<5	10	8.4	6.8	
1,2-Dichloroethane		5	<5	<5	<5	<5.0	<5.0	
1,1-Dichloroethene		7	<5	<5	<5	<5.0	<5.0	
trans-1,2-Dichloroethene		100	<5	<5	<5	<5.0	<5.0	
cis-1,2-Dichloroethene		70	14	15	24	15	14	
Methylene chloride		5	<5	<5	<5	<5.0	<5.0	
Tetrachloroethene		5	<5	<5	<5	<5.0	<5.0	
Toluene		1000	<5	<5	<5	<5.0	<5.0	
1,1,1-Trichloroethane		200	<5	<5	<5	<5.0	<5.0	
Trichloroethene		5	<5	<5	<5	<5.0	<5.0	
Vinyl Chloride		2	[17]	[18]	[24]	[32]	[20]	
Acetone			<100	<100	<100	<100	<100	
Xylene (Total)		10000	<10	<10	<5	<10	<10	
Carbon disulfide			<5	<5	<5	<5.0	<5.0	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	E3	E3	E3	E3	E3
			12/10/97	03/17/98	06/12/98	09/18/98	12/13/98
			Primary	Primary	Primary	Primary	Primary
Benzene		5	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroethene		2	[27]	[17]	<10	[24]	<10
Chloroform		100	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethane			17	6.1	6.1	7.7	5.3
1,2-Dichloroethane		5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		7	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene		100	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene		70	<5.0	13	18	21	19
Methylene chloride		5	<5.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5	<5.0	<5.0	<5.0	<5.0	<5.0
Toluene		1000	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene		5	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride		2	[27]	[17]	<10	[24]	<10
Acetone			<100	<100	<100	<100	<100
Xylene (Total)		10000	<10	<10	<10	<10	<10
Carbon disulfide			<5.0	<5.0	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[I] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	E3	E3	E3	E3	E3
				US-PMCL	03/18/97	03/18/97	09/26/97	09/26/97
				Primary	Duplicate	Primary	Duplicate	Primary
Total Phenols				10 J	40	< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	E3	E3	E3	E3	E3						
							DATE	03/18/97	03/18/97	09/26/97	09/26/97	03/17/98
							RESULT TYPE	US-PMCL	Primary	Duplicate	Primary	Duplicate
Cyanide		200	< 5	< 5	< 5	< 5	< 5					
Chromium, Dissolved			---	---	---	---	---					
Lead, Dissolved			---	---	---	---	---					
Nickel, Dissolved			---	---	---	---	---					
Chromium, Total		100	< 5	< 5	---	---	18					
Lead, Total		15	< 2	< 2	---	---	4.8					
Nickel, Total		100	< 20	< 20	---	---	< 20					

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

NAPHTHA RECOVERY WELLS
 SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID E-3 DATE COLLECTED		04 SEP 96		10 DEC 96	
			04 JUN 96 AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	4.3	J	4.4	J	4.0	J
	CHLOROETHANE	UG/L	7.0	J		10 U		10 U
	1,1-DICHLOROETHANE	UG/L		5.0 U	8.7		9.6	
	1,1-DICHLOROETHENE	UG/L	10			5.0 U		5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L		5.0 U		5.0 U		5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	19		12		16	
	VINYL CHLORIDE	UG/L	20		13		20	
	ACETONE	UG/L		100 U		100 U		100 U
	2-BUTANONE	UG/L		100 U		100 U		100 U
	CARBON DISULFIDE	UG/L		5.0 U		5.0 U	22	
TOTAL VOCS:	UG/L	60.3		38.1		71.6		
E.METALS	LEAD	UG/L	-		0.6	J		-
H.MISC	CYANIDE, TOTAL	UG/L	-			5 U		-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

NAPHTHA RECOVERY WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID E-3 DATE COLLECTED		09 DEC 94		15 MAR 95		07 JUN 95		19 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L		5 U			5.0 U	4.8	J	4.9	J	5.1		
	CHLOROETHANE	UG/L		10 U			10 U	8.2	J	10		12		
	1,1-DICHLOROETHANE	UG/L	8.9		9			7.0		7.2		9.2		
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U			5.0 U		5.0 U		5.0 U		5.0 U	
	CIS-1,2-DICHLOROETHENE	UG/L	38		24			17		18		18		
	VINYL CHLORIDE	UG/L	20		21			14		23		26		
	ACETONE	UG/L		100 U			100 U		100 U		100 U		100 U	
	2-BUTANONE	UG/L	215				100 U		100 U		100 U		100 U	
TOTAL VOCS:	UG/L	281.9		54			51		63.1		70.3			
E.METALS	LEAD	UG/L	-			-		-		2.0 U		-		
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-			2.0 U		-		-		-		
H.MISC	CYANIDE, TOTAL	UG/L	-		14			-		5 U		-		

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: E-3				BENZENE	1,1-DI- CHLORO- ETHANE	1,1-DI- CHLORO- ETHENE	ETHYL BENZENE	TOLUENE	CIS-1,2- DICHLORO- ETHENE	TRANS-1,2 DICHLORO- ETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	METHOD	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
03/25/87	7	AQJA		72	66	ND	10	10	63	10	201	
01/14/88	19	AQJA		60	25	ND	9.4	9.2	48	10	152	
02/10/88	29	AQJA		60	26	ND	11	8.5	81	70	237	
05/19/88	34		8240	43	28.8	ND	7.8	10	86	10	163	
09/23/88	32	AQJA		81	28	ND	5.6	ND	28	11	124	
12/09/88	21	AQJA		30.4	21.8	ND	10	ND	64.2	10	116	
02/24/89	28	AQJA		42.7	28.8	ND	ND	ND	74	7.2	151	
06/07/89	8	AQJA	824	82.1	18.7	ND	ND	ND	45.8	6.9	164	
09/07/89	8	AQJA	8240	46.3	18.1	ND	ND	9.7	52.4	7.8	134	
12/12/89	20	AQJA	8240	77.8	24.4	ND	7.4	24.1	32.5	8	172	
03/01/90	18	AQJA	8240	72.3	20.1	ND	7.4	25.1	59.2	7	191	
06/04/90	31	AQJA	8240	66.7	23.3	ND	ND	ND	50.6	8	139	
08/24/90	28	AQJA	8240	30.8	13.8	ND	ND	ND	32.0	5.2	82	
08/24/90	27	AQJA	8240	30.9	13.7	ND	ND	ND	31.0	5.1	82	
10/30/90	36	AQJA	8240	31.5	20.2	ND	ND	ND	51.4	6.0	109	
03/04/91	34	AQJA	8240	15.8	13.8	ND	ND	ND	33.9	5.3	71	
06/03/91	35	AQJA	8240	15.8	12.2	ND	ND	ND	9.7	ND	38	A
08/30/91	29	AQJA	8240	11.7	8.7	ND	ND	ND	20.0	ND	40	
11/14/91	37	AQJA	8240	11.9	13.8	ND	ND	ND	30.5	ND	56	
01/24/92	17	AQJA	8240	13.3	ND	ND	ND	ND	27.2	ND	41	
03/30/92	8	AQJA	8240	14.5	9.7	ND	ND	ND	22.1	ND	46	
08/24/92	34	AQJA	8240	14.3	ND	ND	ND	ND	17.7	6.7	41	
11/02/92	44	AQJA	8240	10.7	ND	ND	ND	ND	8.1	ND	10	
02/09/93	41	AQJA	8240	8.7	ND	ND	ND	ND	ND	ND	9	
06/18/93	1	AQJA	8240	8.4	ND	9.1	ND	ND	21.4	5.1	44	
12/11/93	48	AQJA	8240	ND	ND	ND	ND	ND	ND	ND	ND	
05/09/94	43	AQJA	8240	ND	7.9	ND	ND	ND	12.4	ND	20	
09/19/94	42	AQJA	8240	ND	8.8	ND	ND	ND	21.4	ND	20	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - METHYLENE CHLORIDE 8.5 UG/L

WELL NOT SAMPLED AUGUST, 1993 DUE TO IMPERATIVE PUMP.

PARAMETER

○ - Data Sampled

NAPHTHA RECOVERY WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIED SIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

t. a. gleason
associates
Environmental and Geotechnical Services

SOURCE: E-3 (CONT'D)

DATE	SAMPLE NO.	LAB	METHOD	CARBON TETRA-CHLORIDE	TRI-CHLORO-ETHYLENE	VINYL CHLORIDE	TOTAL XYLENES	OTHER VOC	SUM	NOTES
03/25/87	7	AQUA		ND	ND	ND	23	ND	23	
01/14/88	18	AQUA		ND	ND	ND	ND	ND	0	
02/10/88	28			ND	ND	ND	ND	ND	0	
03/19/88	34		0240	29.8	22.8	18.3	15	ND	66	
03/23/88	32	AQUA		ND	ND	ND	9.2	ND	9	
12/08/88	21	AQUA		41.7	ND	26.7	189	ND	557	
02/24/89	28	AQUA		49.8	ND	28.3	520	ND	696	
06/07/89	8	AQUA	624	108	ND	19.2	7.1	ND	126	
09/07/89	8	AQUA	0240	ND	ND	29.2	7.8	400	437	
12/12/89	20	AQUA	0240	ND	ND	13.8	070	684	684	
03/01/90	18	AQUA	0240	74.4	ND	18.8	620	722	630	
06/04/90	31	AQUA	0240	81.2	ND	22.7	6.3	550	630	
08/24/90	26	AQUA	0240	34.7	ND	14.4	ND	ND	49	
08/24/90	27	AQUA	0240	33.3	ND	11.0	ND	ND	47	
10/30/90	36	AQUA	0240	68.8	ND	33.8	ND	ND	102	
03/04/91	34	AQUA	0240	ND	ND	ND	ND	ND	0	
06/03/91	35	AQUA	0240	ND	ND	13.1	ND	ND	13	A
08/30/91	20	AQUA	0240	ND	ND	13.8	ND	ND	14	
11/14/91	37	AQUA	0240	ND	ND	ND	ND	ND	0	
01/24/92	17	AQUA	0240	ND	ND	ND	ND	ND	0	
03/30/92	8	AQUA	0240	ND	ND	ND	ND	ND	0	
08/24/92	34	AQUA	0240	12.8	ND	12.2	ND	ND	24	
11/02/92	44	AQUA	0240	14.7	ND	ND	ND	ND	15	
02/03/93	41	AQUA	0240	ND	ND	ND	ND	ND	0	
08/18/93	1	AQUA	0240	ND	ND	17.2	ND	ND	17	
12/11/93	40	AQUA	0240	ND	ND	ND	ND	ND	ND	
05/08/94	43	AQUA	0240	17.2	ND	10.8	ND	ND	28	
09/18/94	42	AQUA	0240	ND	ND	14.1	ND	ND	14	

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

MPL - ND U.S. EPA PUBLISHED LEVEL.

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - METIMETRIC CARBONIE 6.8 UO/L WELL NOT SAMPLED AUGUST, 1993 DUE TO INDETERMINATE PLUM.

PARAMETER

o - Date Sampled

NAPHTHIA RECOVERY WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALTEODIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA



G. E. Johnson Associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	RWB16	RWB16	RWB16	RWB16	RWB16
			03/18/97	06/04/97	09/26/97	12/10/97	12/10/97
			Primary	Primary	Primary	Primary	Duplicate
Benzene		5	[20]	[27]	[45]	[64]	[71]
Chloroethene		2	<10	<2	<10	<10	<10
Chloroform		100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane		5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene		7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene		100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene		70	<5	<5	5.8	<5.0	<5.0
Methylene chloride		5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene		5	<5	<5	<5.0	<5.0	<5.0
Toluene		1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene		5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride		2	<10	<2	<10	<10	<10
Acetone			<100	<100	<100	<100	<100
Xylene (Total)		10000	<10	<5	<10	<10	<10
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE		RWB16	RWB16	RWB16	RWB16	RWB16
	DATE		03/17/98	06/12/98	09/17/98	12/14/98	12/14/98
	RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Duplicate
Benzene		5	[63]	[55]	[76]	[71]	[70]
Chloroethene		2	< 10	< 10	< 10	< 10	< 10
Chloroform		100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene		7	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene		100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene		70	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene		1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane		200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride		2	< 10	< 10	< 10	< 10	< 10
Acetone			< 100	< 100	< 100	< 100	< 100
Xylene (Total)		10000	< 10	< 10	< 10	< 10	< 10
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed
 [] = Greater than Action Level

Analytical Summary - Phenols In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	RWB16	RWB16	RWB16	
		DATE	03/18/97	09/26/97	03/17/98	
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols			20	< 10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		RWB16	RWB16	RWB16
		DATE		03/18/97	09/26/97	03/17/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Cyanide			200	< 5	< 5	< 5
Chromium, Dissolved				---	---	---
Lead, Dissolved				---	---	---
Nickel, Dissolved				---	---	---
Chromium, Total			100	< 5	---	24
Lead, Total			15	< 2	---	< 2.0
Nickel, Total			100	< 20	---	< 20

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

NAPHTHA RECOVERY WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID RWB-16 DATE COLLECTED			
			12 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	10 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	25	33	18	22
	CHLOROETHANE	UG/L	10 U	5.0 J	10 U	7.1 J
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	3.2 J	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	3.0 J	6.0	4.5 J	3.7 J
	CIS-1,2-DICHLOROETHENE	UG/L	2.2 J	12	4.1 J	3.0 J
	VINYL CHLORIDE	UG/L	10 U	6.5 J	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	2-BUTANONE	UG/L	100 U	100 U	100 U	100 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOTAL VOCS:	UG/L	30.2	62.5	29.8	35.8
E.METALS	LEAD	UG/L	18	-	1.7 J	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

NAPHTHA RECOVERY WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID RWB-16 DATE COLLECTED		15 MAR 95		07 JUN 95		19 SEP 95		05 DEC 95	
			09 DEC 94	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	45		44		37		24		16	
	CHLOROETHANE	UG/L		10 U		10 U	6.9	J	5.4	J	6.3	J
	1,1-DICHLOROETHANE	UG/L		5 U		5.0 U		5.0 U	6.7	J	3.0	J
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U		5.0 U		5.0 U	3.5	J	3.4	J
	CIS-1,2-DICHLOROETHENE	UG/L		5 U	5		4.1	J	3.7	J	3.6	J
	VINYL CHLORIDE	UG/L		10 U		10 U		10 U	5.4	J	2.6	J
	ACETONE	UG/L		100 U		100 U		100 U		100 U		100 U
	2-BUTANONE	UG/L		100 U		100 U		100 U		100 U		100 U
	TOTAL VOCS:	UG/L	45		49		48		48.7		34.9	
E.METALS	LEAD	UG/L		-		-		-	13			
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-	2.1			-				
H.MISC	CYANIDE, TOTAL	UG/L		-		5 U		-		5 U		

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: RMB-16

DATE SAMPLED	SAMPLE NO.	LAB	MCL	No VOC Detected															
				MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L								
DATE	SAMPLE NO.	LAB	MCL	No VOC Detected															
				MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L								
DATE	SAMPLE NO.	LAB	MCL	No VOC Detected															
				MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L								
03/25/87	8	AQUA	22	NO	NO	16	NO	16	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
09/04/87	35	AQUA																	
01/14/88	20	AQUA																	
02/18/88	38	AQUA																	
09/18/88	39	AQUA																	
09/19/88	39	AQUA																	
09/25/88	33	AQUA																	
12/09/88	22	AQUA																	
02/24/89	29	AQUA																	
06/07/89	8	AQUA	824																
09/07/89	8	AQUA																	
09/07/89	8	AQUA																	
09/07/89	10	AQUA																	
12/12/89	21	AQUA																	
03/01/90	19	AQUA																	
06/04/90	32	AQUA																	
08/24/90	28	AQUA																	
10/10/90	37	AQUA																	
03/04/91	35	AQUA																	
06/03/91	36	AQUA																	
06/03/91	37	AQUA																	
08/30/91	21	AQUA																	
11/14/91	38	AQUA																	
11/14/91	39	AQUA																	
01/24/92	18	AQUA																	
01/24/92	19	AQUA																	
03/20/92	8	AQUA																	
08/24/92	35	AQUA																	
11/02/92	43	AQUA																	
02/05/93	38	AQUA																	
02/05/93	38	AQUA																	
05/12/93	34	AQUA																	
09/01/93	24	AQUA																	
09/01/93	29	AQUA																	
12/04/93	39	AQUA																	
02/19/94	37	AQUA																	
02/18/94	38	AQUA																	
05/07/94	41	AQUA																	
08/18/94	43	AQUA																	
09/16/94	43	AQUA																	

NOTES:
 OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
 NO - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.
 MFL - NO U.S. EPA PUBLISHED LEVEL.
 P - PROPOSED.
 VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.
 A - METHYLENE CHLORIDE 9.0 MG/L.

PARAMETER

o - Data

o - Sampled

HAPPHITA RECOVERY WELLS
 GROUNDWATER QUALITY ANALYSIS
 ORGANIC COMPOUNDS

ALLIENIGAL, INC.
 GROUNDWATER INVESTIGATORS
 SOUTH BEND, INDIANA

The Geopon
 Associates
 Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	RWB22	RWB22	RWB22	RWB22	RWB22
			03/18/97	06/04/97	06/04/97	12/10/97	03/17/98
			Primary	Primary	Duplicate	Primary	Primary
Benzene		5	< 5	< 5	< 5	< 5.0	< 5.0
Chloroethene		2	< 10	< 2	< 2	< 10	< 10
Chloroform		100	< 5	< 5	< 5	< 5.0	< 5.0
1,1-Dichloroethane			< 5	5.6	6.4	7.0	9.9
1,2-Dichloroethane		5	< 5	< 5	< 5	< 5.0	< 5.0
1,1-Dichloroethene		7	< 5	< 5	< 5	< 5.0	< 5.0
trans-1,2-Dichloroethene		100	< 5	< 5	< 5	< 5.0	< 5.0
cis-1,2-Dichloroethene		70	15	18	20	19	24
Methylene chloride		5	< 5	< 5	< 5	< 5.0	< 5.0
Tetrachloroethene		5	< 5	< 5	< 5	< 5.0	< 5.0
Toluene		1000	< 5	< 5	< 5	< 5.0	< 5.0
1,1,1-Trichloroethane		200	< 5	< 5	< 5	< 5.0	< 5.0
Trichloroethene		5	< 5	< 5	< 5	< 5.0	< 5.0
Vinyl Chloride		2	< 10	< 2	< 2	< 10	< 10
Acetone			< 100	< 100	< 100	< 100	< 100
Xylene (Total)		10000	< 10	< 5	< 5	< 10	< 10
Carbon disulfide			< 5	< 5	< 5	< 5.0	< 5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE		RWB22	RWB22	RWB22
	DATE		06/12/98	09/17/98	12/14/98
	RESULT TYPE	US-PMCL	Primary	Primary	Primary
Benzene		5	< 5.0	< 5.0	< 5.0
Chloroethene		2	< 10	< 10	< 10
Chloroform		100	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane			5.2	6.3	5.2
1,2-Dichloroethane		5	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene		7	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene		100	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene		70	17	23	18
Methylene chloride		5	< 5.0	< 5.0	< 5.0
Tetrachloroethene		5	< 5.0	< 5.0	< 5.0
Toluene		1000	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane		200	< 5.0	< 5.0	< 5.0
Trichloroethene		5	< 5.0	< 5.0	< 5.0
Vinyl Chloride		2	< 10	< 10	< 10
Acetone			< 100	< 100	< 100
Xylene (Total)		10000	< 10	< 10	< 10
Carbon disulfide			< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	RWB22	RWB22
		DATE	03/18/97	03/17/98
		RESULT TYPE	US-PMCL	Primary
			< 10	< 10
Total Phenols			< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE		RWB22	RWB22
	DATE		03/18/97	03/17/98
	RESULT TYPE	US-PMCL	Primary	Primary
Cyanide		200	< 5	< 5
Chromium, Dissolved			---	---
Lead, Dissolved			---	---
Nickel, Dissolved			---	---
Chromium, Total		100	< 5	20
Lead, Total		15	< 2	< 2.0
Nickel, Total		100	< 20	< 20

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

NAPHTHA RECOVERY WELLS
 SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID RWB-22 DATE COLLECTED		04 JUN 96		04 SEP 96		10 DEC 96	
			12 MAR 96 AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	2.4	J	3.3	J		5.0	3.7	J
	CHLOROETHANE	UG/L		10 U		10 U		10 U		10 U
	1,1-DICHLOROETHANE	UG/L	5.9		8.0		8.8		8.1	
	1,1-DICHLOROETHENE	UG/L		5.0 U		5.0 U		5.0 U		5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.4		4.8	J	5.3		4.9	J
	CIS-1,2-DICHLOROETHENE	UG/L	25		26		27		24	
	VINYL CHLORIDE	UG/L		10 U		10 U		10 U		10 U
	ACETONE	UG/L		100 U		100 U		100 U		100 U
	2-BUTANONE	UG/L		100 U		100 U		100 U		100 U
	CARBON DISULFIDE	UG/L		5.0 U		5.0 U		5.0 U		100 U
TOTAL VOCS:	UG/L	38.7		42.1		41.1		55.7		
E.METALS	LEAD	UG/L	2.0	U	-		2.0	U	-	
H.MISC	CYANIDE, TOTAL	UG/L	5	U	-		5	U	-	

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

NAPHTHA RECOVERY WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID RWB-22 DATE COLLECTED		09 DEC 94		15 MAR 95		07 JUN 95		19 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q		
A.VOA	BENZENE	UG/L		5 U			5.0 U		3.5	J	3.2	J	2.1	J
	CHLOROETHANE	UG/L		10 U			10 U							
	1,1-DICHLOROETHANE	UG/L	8.0		8			8.6	10 U		10 U		10 U	
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U	6				5.0 U		6.4	J	5.4	J
	CIS-1,2-DICHLOROETHENE	UG/L	27		30			32			4.4		4.1	J
	VINYL CHLORIDE	UG/L		10 U							25		23	
	ACETONE	UG/L	129				10 U		10 U		10 U		10 U	10 U
	2-BUTANONE	UG/L	385				100 U		100 U		100 U		100 U	100 U
	TOTAL VOCS:	UG/L	549		44			44.1			39		34.6	
E.METALS	LEAD	UG/L	-		-		-		-		2.0 U		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		-		2.0 U		-		-		-	
H.MISC	CYANIDE, TOTAL	UG/L	-		8		-		-		5 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: RWB-22			BENZENE	CARBON TETRA-CHLORIDE	1,1-DI-CHLORO-ETHANE	ETHYL BENZENE	TOLUENE	TOTAL XYLENES	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	5 UG/L	1PL UG/L	1PL UG/L	P-700 UG/L	P-2000 UG/L	P-10000 UG/L	UG/L
03/26/87	8	ADQJA		184	ND	124	84	ND	199	601
09/04/87	34	ADQJA		ND	420	ND	81	ND	160	661
01/14/88	17	ADQJA		117	70	48	47	22	85	389
01/14/88	18	ADQJA		122	90	53	51	24	91	431
02/10/88	27	ADQJA		170	110	89	73	61	140	613
02/10/88	28	ADQJA		151	ND	51	70	140	140	552
05/19/88	32	ADQJA		118	33.8	48.2	103	79.5	133	518
05/19/88	33	ADQJA		118	33.7	47.9	98.8	34.7	113	488
09/23/88	38	ADQJA		ND	ND	8.3	ND	ND	ND	8
12/09/88	20	ADQJA		63.8	ND	29.7	41	18.4	80	243
02/24/89	27	ADQJA		110	62.8	28.8	62.9	34.4	100	388
06/07/89	4	ADQJA	824	158	64.8	23.4	31.9	42.1	87.1	429
09/07/89	7	ADQJA	8240	100	ND	19.3	47.1	13.1	84.7	264
12/12/89	19	ADQJA	8240	ND	ND	24.2	27	ND	36.8	88
03/01/90	17	ADQJA	8240	82.8	ND	17.4	37.3	5.2	44.1	187
06/04/90	29	ADQJA	8240	76.7	ND	18.4	35.4	12.3	44.2	188
06/04/90	30	ADQJA	8240	78.3	ND	19.3	35.2	12.2	44	187
08/24/90	26	ADQJA	8240	45.7	10.1	16.7	32.8	8.1	64.7	167
10/30/90	35	ADQJA	8240	53.8	28.8	21.8	30.6	7.4	48.2	189
03/04/91	32	ADQJA	8240	21.2	ND	25.1	15.7	ND	24.4	86
03/04/91	33	ADQJA	8240	26.2	ND	13.0	20.0	ND	34.8	94
06/03/91	38	ADQJA	8240	5.8	ND	14.2	ND	ND	ND	29
11/14/91	36	ADQJA	8240	10.8	ND	ND	ND	ND	ND	11
01/24/92	16	ADQJA	8240	14.4	ND	ND	8.9	ND	11.8	32
03/30/92	4	ADQJA	8240	5.9	ND	10.7	ND	ND	ND	17
08/24/92	33	ADQJA	8240	6.1	ND	18.7	ND	ND	ND	22
11/02/92	42	ADQJA	8240	5.8	ND	9.1	ND	ND	ND	15
02/05/93	29	ADQJA	8240	ND	ND	17.4	ND	ND	ND	17
05/12/93	33	ADQJA	8240	ND	ND	12.9	ND	ND	ND	13
09/01/93	23	ADQJA	8240	ND	ND	12.5	ND	ND	ND	13
12/04/93	33	ADQJA	8240	ND	ND	23.3	ND	ND	ND	23
12/04/93	34	ADQJA	8240	ND	ND	21.1	ND	ND	ND	21
02/19/94	36	ADQJA	8240	ND	ND	7.9	ND	ND	ND	8
05/07/94	39	ADQJA	8240	ND	ND	8.8	ND	ND	ND	9
05/07/94	40	ADQJA	8240	ND	ND	8.9	ND	ND	ND	9
08/18/94	39	ADQJA	8240	ND	ND	8.7	ND	ND	ND	8
09/16/94	48	ADQJA	8240	ND	ND	8.0	ND	ND	ND	8

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

WELL NOT SAMPLED AUGUST, 1991 DUE TO IMPROVATIVE PUMP.

PARAMETER

o - Date Sampled

NAPHTHA RECOVERY WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedsignal
associates
Environmental and Geotechnical Services

SOURCE: RMB-22 (CONT'D)

DATE SAMPLED	NO. SAMPLE	LAB	MCL	METHOD					
				ETHENE	1,1-DICHLORO-ETHENE	1,1,1-TRICHLORO-ETHENE	1,1,2-TRICHLORO-ETHENE	P-100	5
DATE	SAMPLE NO.	LAB	MCL	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
09/26/87	8	ADVA		ND	ND	ND	ND	ND	ND
09/04/87	34	ADVA		ND	ND	ND	ND	ND	ND
01/14/88	17	ADVA		ND	ND	ND	ND	ND	ND
01/14/88	18	ADVA		ND	ND	ND	ND	ND	ND
02/10/88	27	ADVA		ND	ND	ND	ND	ND	ND
02/10/88	28	ADVA		ND	ND	ND	ND	ND	ND
02/10/88	29	ADVA		ND	ND	ND	ND	ND	ND
02/10/88	30	ADVA		ND	ND	ND	ND	ND	ND
02/10/88	31	ADVA		ND	ND	ND	ND	ND	ND
02/10/88	32	ADVA		ND	ND	ND	ND	ND	ND
09/19/88	33	ADVA		ND	ND	ND	ND	ND	ND
09/23/88	30	ADVA		ND	ND	ND	ND	ND	ND
12/09/88	20	ADVA		ND	ND	ND	ND	ND	ND
02/24/89	27	ADVA		ND	ND	ND	ND	ND	ND
06/07/89	4	ADVA	524	ND	ND	ND	ND	ND	ND
09/07/89	7	ADVA		ND	ND	ND	ND	ND	ND
12/12/89	19	ADVA		ND	ND	ND	ND	ND	ND
07/01/90	17	ADVA		ND	ND	ND	ND	ND	ND
06/04/90	29	ADVA		ND	ND	ND	ND	ND	ND
06/04/90	30	ADVA		ND	ND	ND	ND	ND	ND
06/04/90	25	ADVA		ND	ND	ND	ND	ND	ND
10/30/90	35	ADVA		ND	ND	ND	ND	ND	ND
07/04/91	32	ADVA		ND	ND	ND	ND	ND	ND
03/04/91	33	ADVA		ND	ND	ND	ND	ND	ND
06/03/91	38	ADVA		ND	ND	ND	ND	ND	ND
11/14/91	36	ADVA		ND	ND	ND	ND	ND	ND
01/24/92	16	ADVA		ND	ND	ND	ND	ND	ND
07/30/92	4	ADVA		ND	ND	ND	ND	ND	ND
08/24/92	33	ADVA		ND	ND	ND	ND	ND	ND
11/02/92	42	ADVA		ND	ND	ND	ND	ND	ND
02/05/93	20	ADVA		ND	ND	ND	ND	ND	ND
09/12/93	33	ADVA		ND	ND	ND	ND	ND	ND
09/01/93	23	ADVA		ND	ND	ND	ND	ND	ND
12/04/93	33	ADVA		ND	ND	ND	ND	ND	ND
12/04/93	34	ADVA		ND	ND	ND	ND	ND	ND
02/10/94	36	ADVA		ND	ND	ND	ND	ND	ND
05/07/94	38	ADVA		ND	ND	ND	ND	ND	ND
09/07/94	40	ADVA		ND	ND	ND	ND	ND	ND
09/10/94	39	ADVA		ND	ND	ND	ND	ND	ND
09/10/94	40	ADVA		ND	ND	ND	ND	ND	ND
09/10/94	32,4	ADVA		ND	ND	ND	ND	ND	ND

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.
 MFL - NO U.S. EPA PUBLISHED LEVEL
 P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT GCMS SCAN FOR PRIORITY POLLUTANT VOCs. EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

WELL NOT SAMPLED AGAIN, 1991 DUE TO INDEFINITE MFL.

PARAMETER
 o - Date
 o - Sampled

NAPHTHA RECOVERY WELLS
 GROUNDWATER QUALITY ANALYSIS
 ORGANIC COMPOUNDS

ALTEOSIGNAL INC.
 GROUNDWATER INVESTIGATIONS
 SOUTH BEND, INDIANA

ALTEOSIGNAL
 Associates
 Environmental and Geotechnical Services

VOC RECOVERY WELLS

Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	EW-1					
			DATE	EW-1	EW-1	EW-1	EW-1	EW-1
				06/03/97	06/03/97	09/24/97	12/11/97	12/11/97
RESULT TYPE	US-PMCL	Primary	Duplicate	Primary	Primary	Duplicate		
Benzene	5		< 5	< 5	< 5.0	< 5.0	< 5.0	
Chloroethene	2		< 2	< 2	[15]	< 10 UJ	[20]	
Chloroform	100		< 5	< 5	< 5.0	< 5.0	< 5.0	
1,1-Dichloroethane			27	27	23	< 5.0	< 5.0	
1,2-Dichloroethane	5		< 5	< 5	< 5.0	< 5.0	< 5.0	
1,1-Dichloroethene	7		< 5	< 5	< 5.0	< 5.0	< 5.0	
trans-1,2-Dichloroethene	100		86	90	61	56	60	
cis-1,2-Dichloroethene	70		[260]	[260]	[200]	[210]	[230]	
Methylene chloride	5		< 5	< 5	< 5.0	< 5.0	< 5.0	
Tetrachloroethene	5		< 5	< 5	< 5.0	< 5.0	< 5.0	
Toluene	1000		< 5	< 5	< 5.0	< 5.0	< 5.0	
1,1,1-Trichloroethane	200		< 5	< 5	< 5.0	< 5.0	< 5.0	
Trichloroethene	5		[19]	[71]	[61]	[84]	[87]	
Vinyl Chloride	2		< 2	< 2	[15]	< 10 UJ	[20]	
Acetone			< 100	< 100	< 100	< 100	< 100	
Xylene (Total)	10000		< 5	< 5	< 10	< 10	< 10	
Carbon disulfide			< 5	< 5	< 5.0	< 5.0	< 5.0	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	EW-1	EW-1	EW-1	EW-1	EW-1
					03/17/98	03/17/98	06/16/98	09/17/98	12/13/98
					Primary	Duplicate	Primary	Primary	Primary
Benzene	5				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethene	2				< 10	< 10	[15]	[27]	[27]
Chloroform	100				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane					< 5.0	19	20	26	26
1,2-Dichloroethane	5				< 5.0	< 5.0	< 5.0	[7.0]	[6.3]
1,1-Dichloroethene	7				< 5.0	< 5.0	< 5.0	< 5.0	5.8
trans-1,2-Dichloroethene	100				52	58	57	77	69
cis-1,2-Dichloroethene	70				[210]	[200]	[200]	[270]	[240]
Methylene chloride	5				< 5.0	< 5.0	< 5.0	< 5.0	[5.9] B
Tetrachloroethene	5				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	1000				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane	200				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene	5				[170]	[150]	[150]	[200]	[180]
Vinyl Chloride	2				< 10	< 10	[15]	[27]	[27]
Acetone					< 100	< 100	< 100	< 100	< 100
Xylene (Total)	10000				< 10	< 10	< 10	< 10	< 10
Carbon disulfide					< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

Analytical Summary - Phenols In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	EW-1	EW-1	EW-1
DATE	US-PMCL	09/24/97	03/17/98	03/17/98
RESULT TYPE	Primary	Primary	Duplicate	
Total Phenols		< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	EW-1	EW-1	EW-1
				DATE	DATE	DATE
		RESULT TYPE		Primary	Primary	Duplicate
Cyanide			200	7	20	20
Chromium, Dissolved				---	---	---
Lead, Dissolved				---	---	---
Nickel, Dissolved				---	---	---
Chromium, Total			100	---	12	15
Lead, Total			15	---	[132]	2.7
Nickel, Total			100	---	< 20	< 20

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	EW-2	EW-2	EW-2	EW-2
			06/16/98	09/17/98	09/17/98	12/13/98
			Primary	Primary	Duplicate	Primary
Benzene		5	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethene		2	< 10	< 10	< 10	< 10
Chloroform		100	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane			41	47	48	43
1,2-Dichloroethane		5	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene		7	< 5.0	6.5	6.5	5.8
trans-1,2-Dichloroethene		100	8.6	22	22	28
cis-1,2-Dichloroethene		70	[150]	[190]	[190]	[180]
Methylene chloride		5	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene		5	< 5.0	< 5.0	< 5.0	< 5.0
Toluene		1000	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane		200	39	39	40	33
Trichloroethene		5	[59]	[82]	[83]	[68]
Vinyl Chloride		2	< 10	< 10	< 10	< 10
Acetone			< 100	110	< 100	< 100
Xylene (Total)		10000	< 10	< 10	< 10	< 10
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0

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[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	EW-3	EW-3	EW-3	EW-3	EW-3
			09/24/97	03/17/98	06/16/98	09/17/98	12/13/98
			Primary	Primary	Primary	Primary	Primary
Benzene		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethene		2	< 10	< 10	< 10	< 10	< 10
Chloroform		100	< 5.0	6.7	51	< 5.0	< 5.0
1,1-Dichloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene		7	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
trans-1,2-Dichloroethene		100	[110]	75	93	[100]	94
cis-1,2-Dichloroethene		70	65	36	[74]	45	43
Methylene chloride		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene		5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene		1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane		200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene		5	[39]	[29]	[28]	[39]	[34]
Vinyl Chloride		2	< 10	< 10	< 10	< 10	< 10
Acetone			< 100	< 100	< 100	140	< 100
Xylene (Total)		10000	< 10	< 10	< 10	< 10	< 10
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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[] = Greater than Action Level

Analytical Summary - Phenols In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	EW-3	EW-3
DATE	09/24/97	03/17/98	
RESULT TYPE	US-PMCL	Primary	Primary
Total Phenols		< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 12/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	EW-3	EW-3
			DATE	DATE
			RESULT TYPE	RESULT TYPE
Cyanide		200	< 5	< 10
Chromium, Dissolved			---	---
Lead, Dissolved			---	---
Nickel, Dissolved			---	---
Chromium, Total		100	---	15
Lead, Total		15	---	5.1
Nickel, Total		100	---	< 20

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

TRENDLINE PLOTS

- **SHALLOW MONITORING WELLS**
- **DEEP MONITORING WELLS**

**SHALLOW MONITORING WELLS
NEAR ORIGIN OF GROUNDWATER PLUME**

86-10

86-15

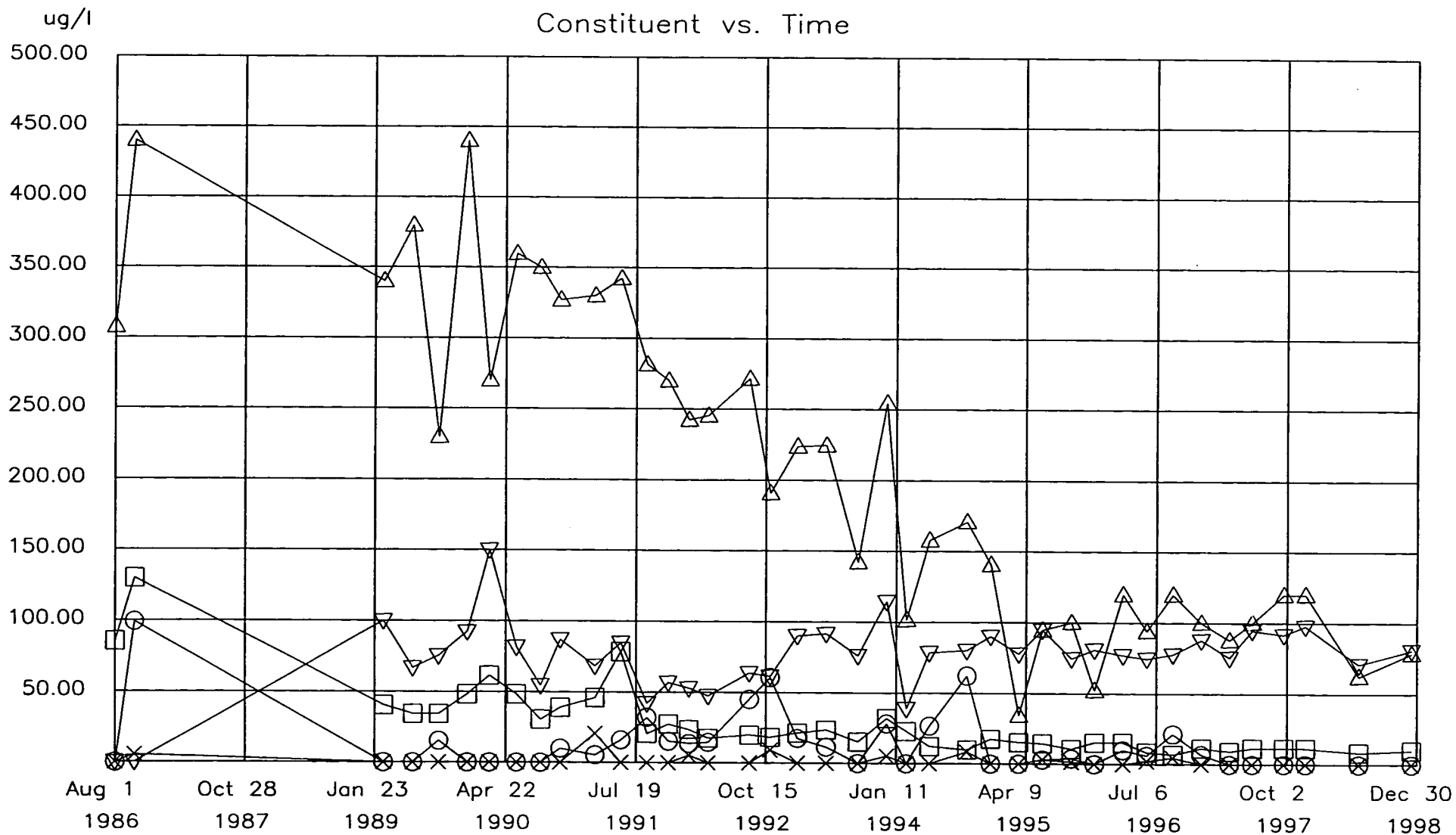
S4A

TCL: VOC

PF Code: T

Site: 86-10

- △ = Trichloroethene
- ▽ = cis-1,2-Dichloroethene
- = trans-1,2-Dichloroethene
- = 1,1,1-Trichloroethane
- × = 1,1-Dichloroethane



TCL: VOC

PF Code: T

Site: 86-15

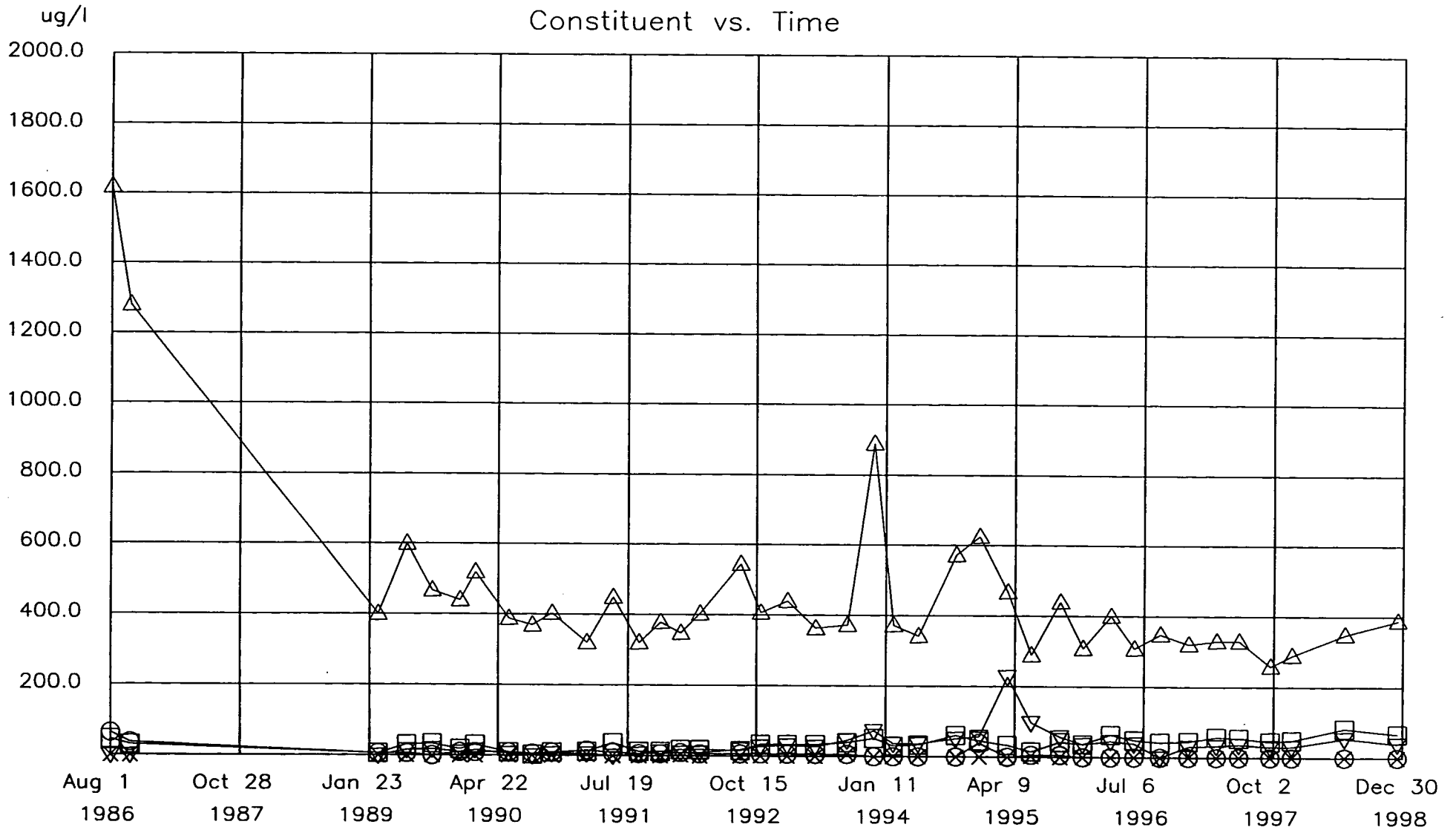
△ = Trichloroethene

▽ = cis-1,2-Dichloroethene

□ = trans-1,2-Dichloroethene

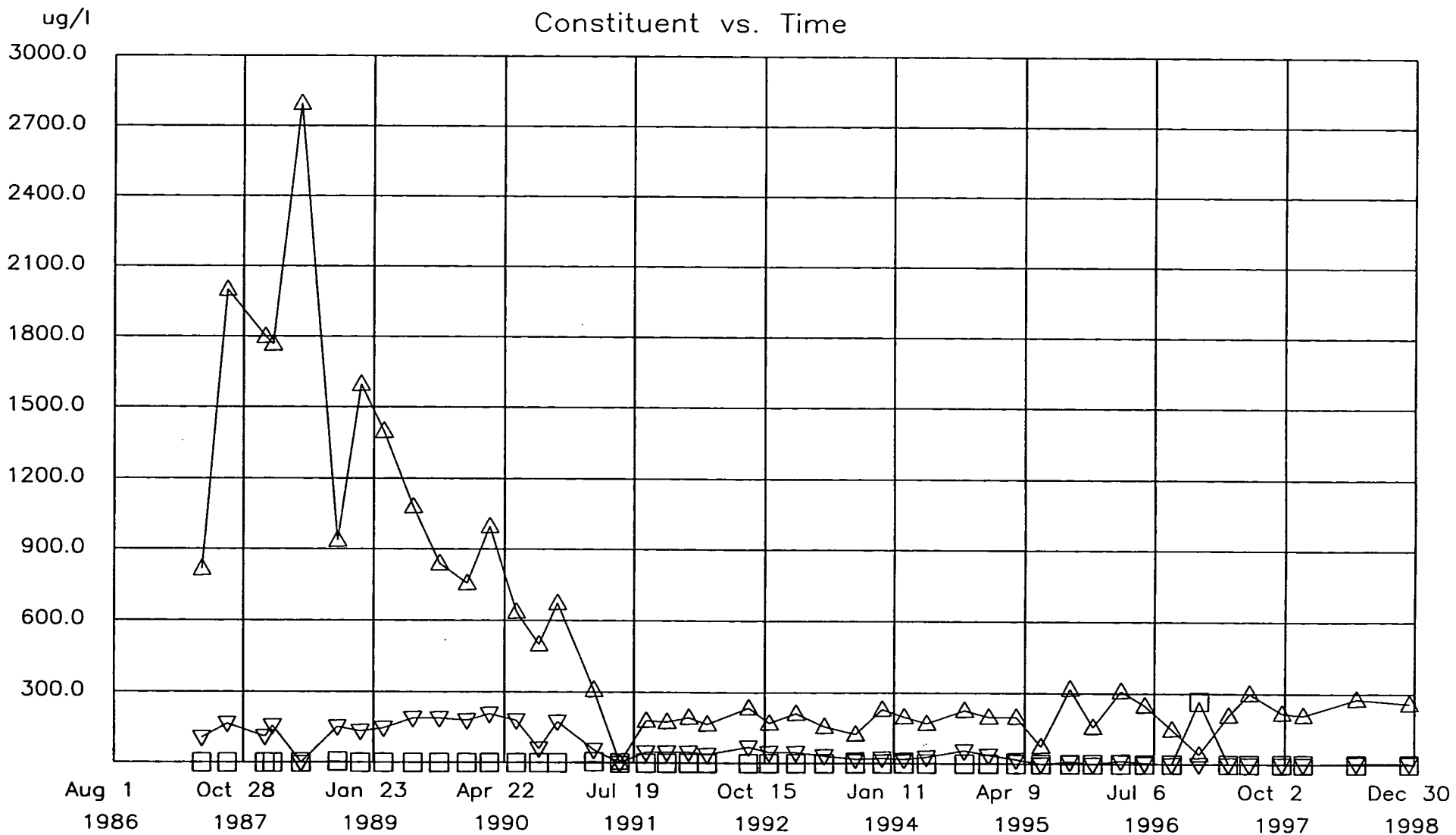
○ = 1,1,1-Trichloroethane

× = 1,1-Dichloroethane



TCL: VOC
PF Code: T
Site: S4A

△ = cis-1,2-Dichloroethene
▽ = trans-1,2-Dichloroethene
□ = 1,2-Dichloroethane



**SHALLOW MONITORING WELLS
IN CENTRAL PORTION OF GROUNDWATER PLUME**

**S9
S24
S27**

TCL: VOC

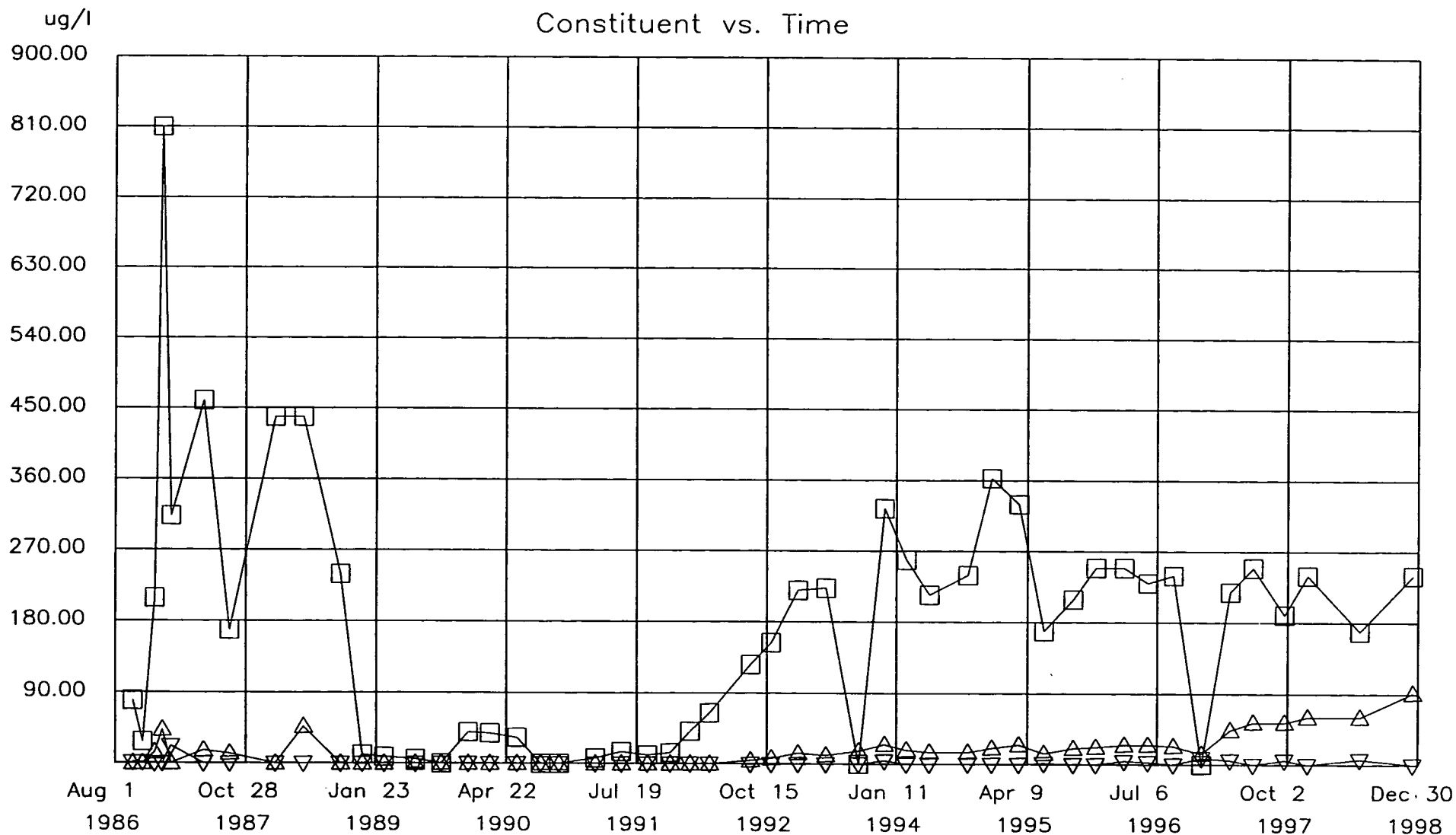
PF Code: T

Site: S9

△ = cis-1,2-Dichloroethene

▽ = trans-1,2-Dichloroethene

□ = 1,2-Dichloroethane



TCL: VOC

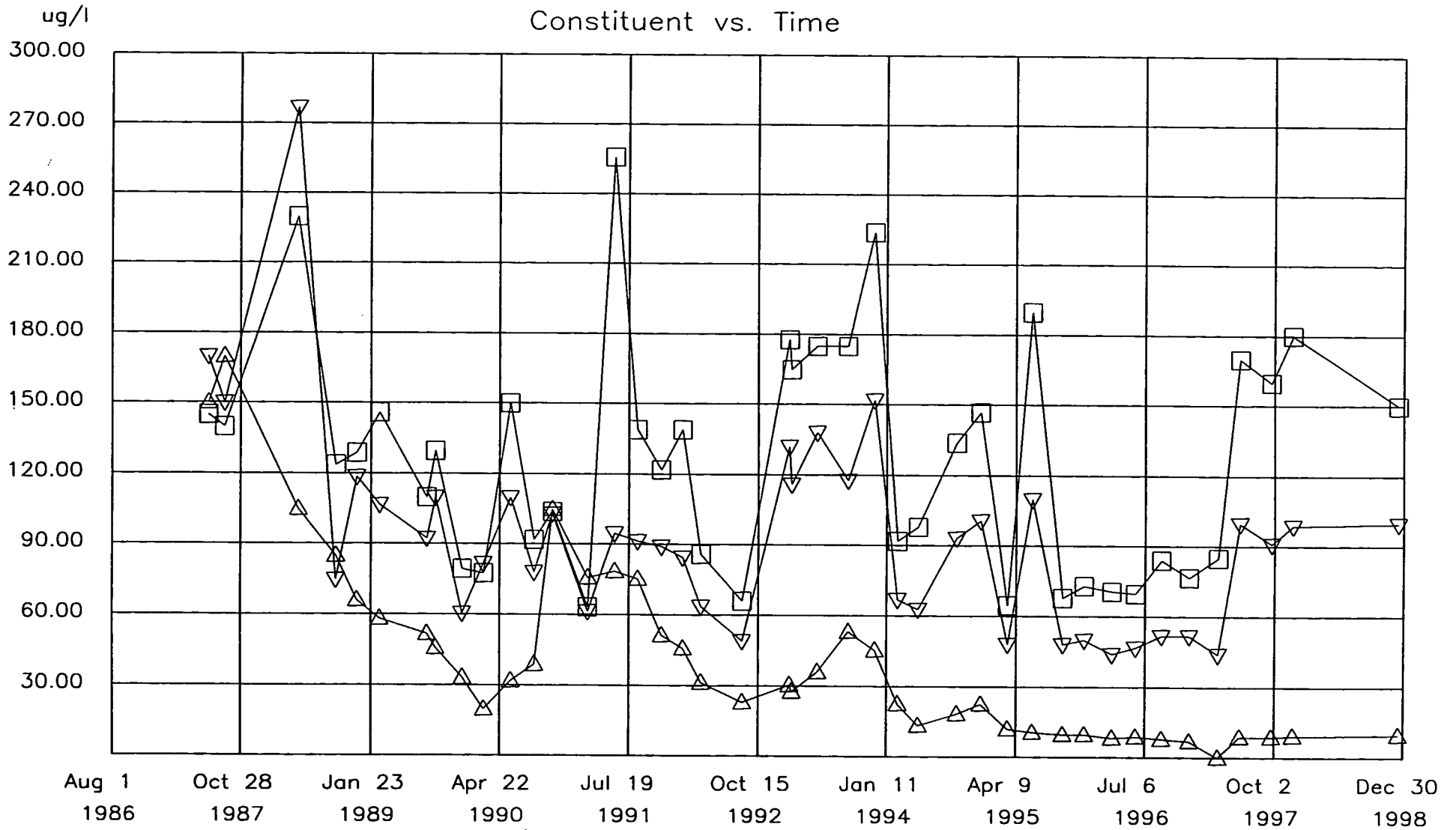
PF Code: T

Site: S24

△ = Trichloroethene

▽ = cis-1,2-Dichloroethene

□ = trans-1,2-Dichloroethene



TCL: VOC

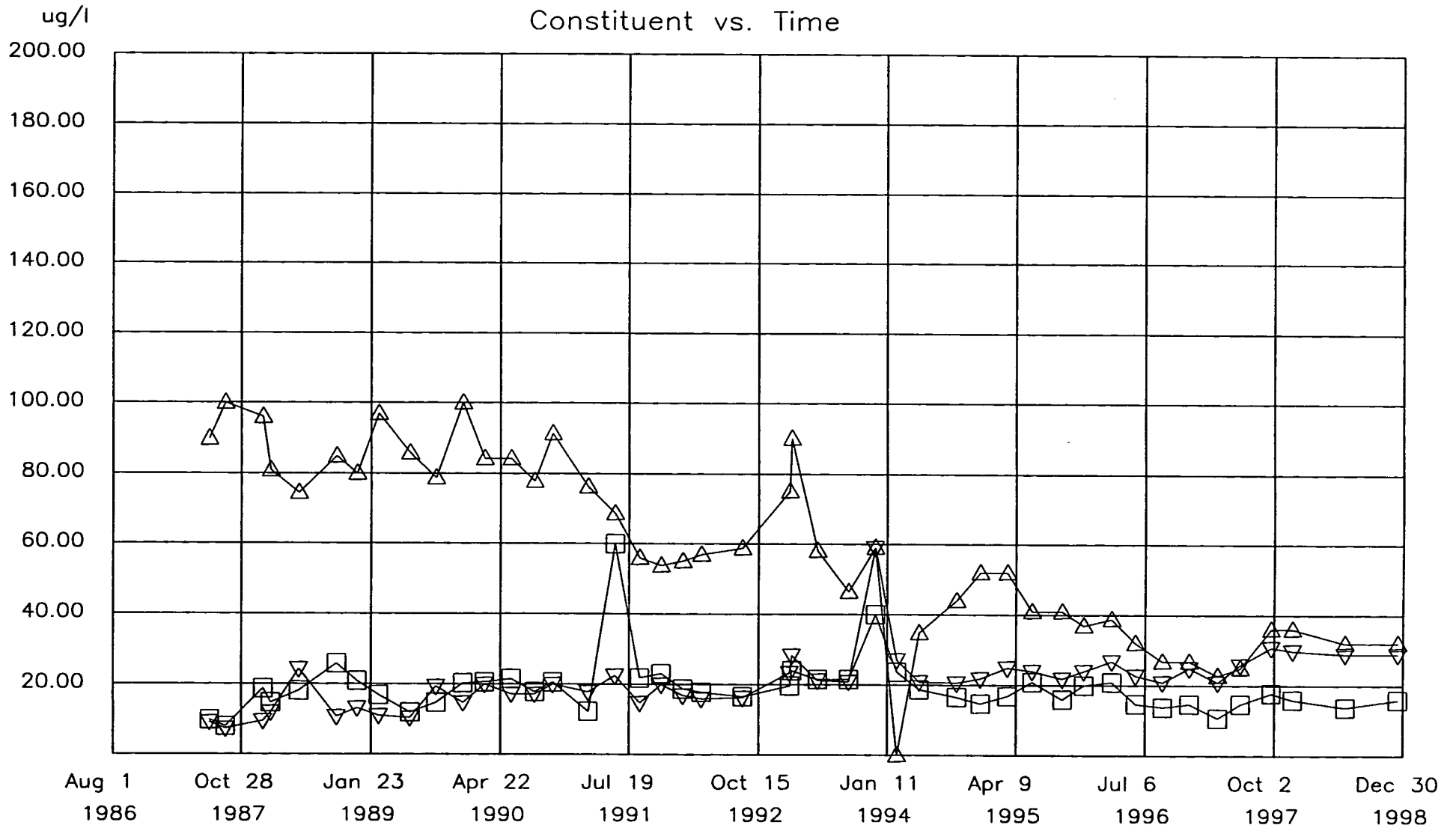
PF Code: T

Site: S27

△ = Trichloroethene

▽ = cis-1,2-Dichloroethene

□ = trans-1,2-Dichloroethene



**SHALLOW MONITORING WELLS
DOWNGRAIDENT BOUNDARY OF GROUNDWATER PLUME**

**S21
S22
S25**

TCL: VOC

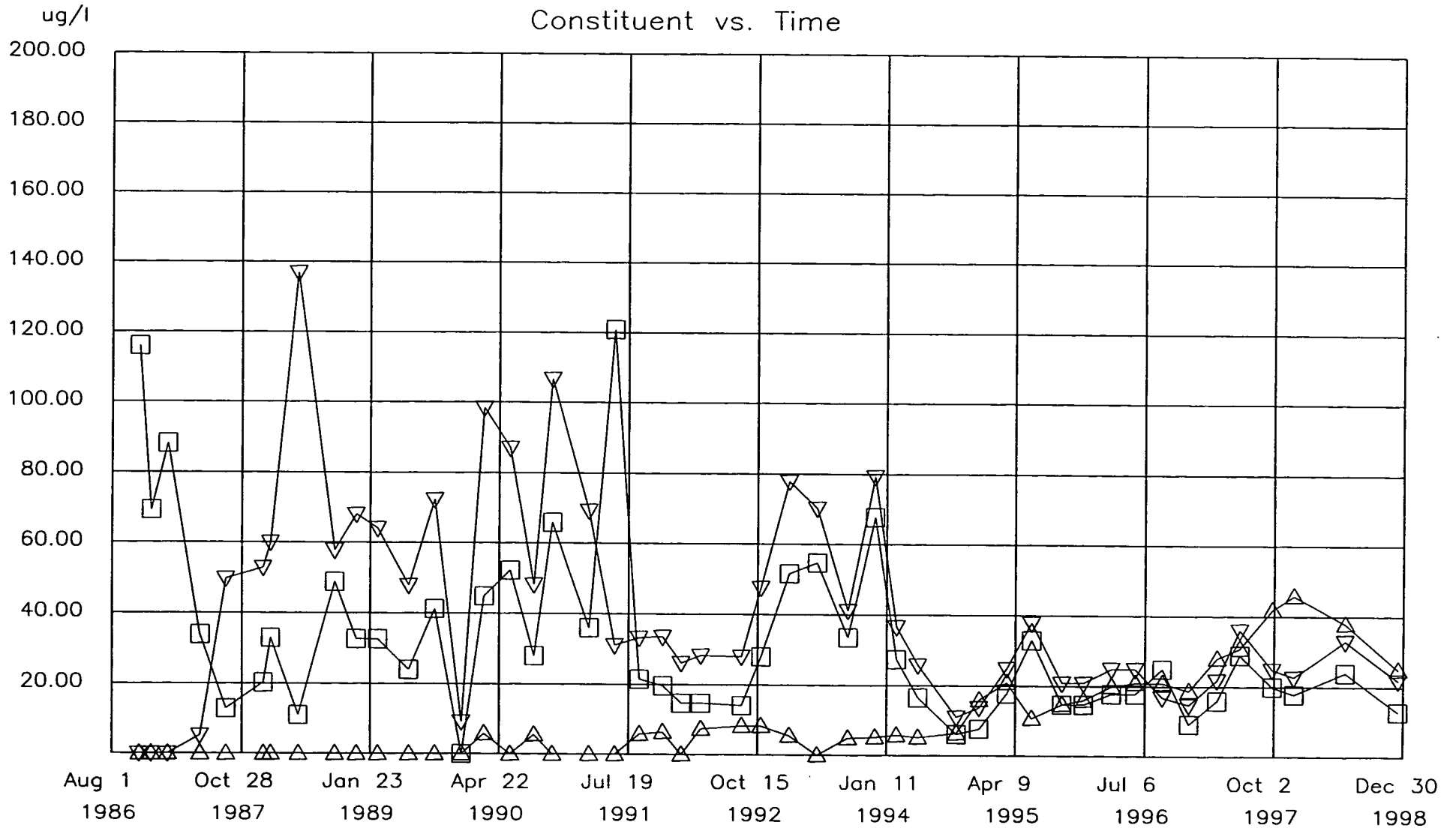
PF Code: T

Site: S21

△ = Trichloroethene

▽ = cis-1,2-Dichloroethene

□ = trans-1,2-Dichloroethene



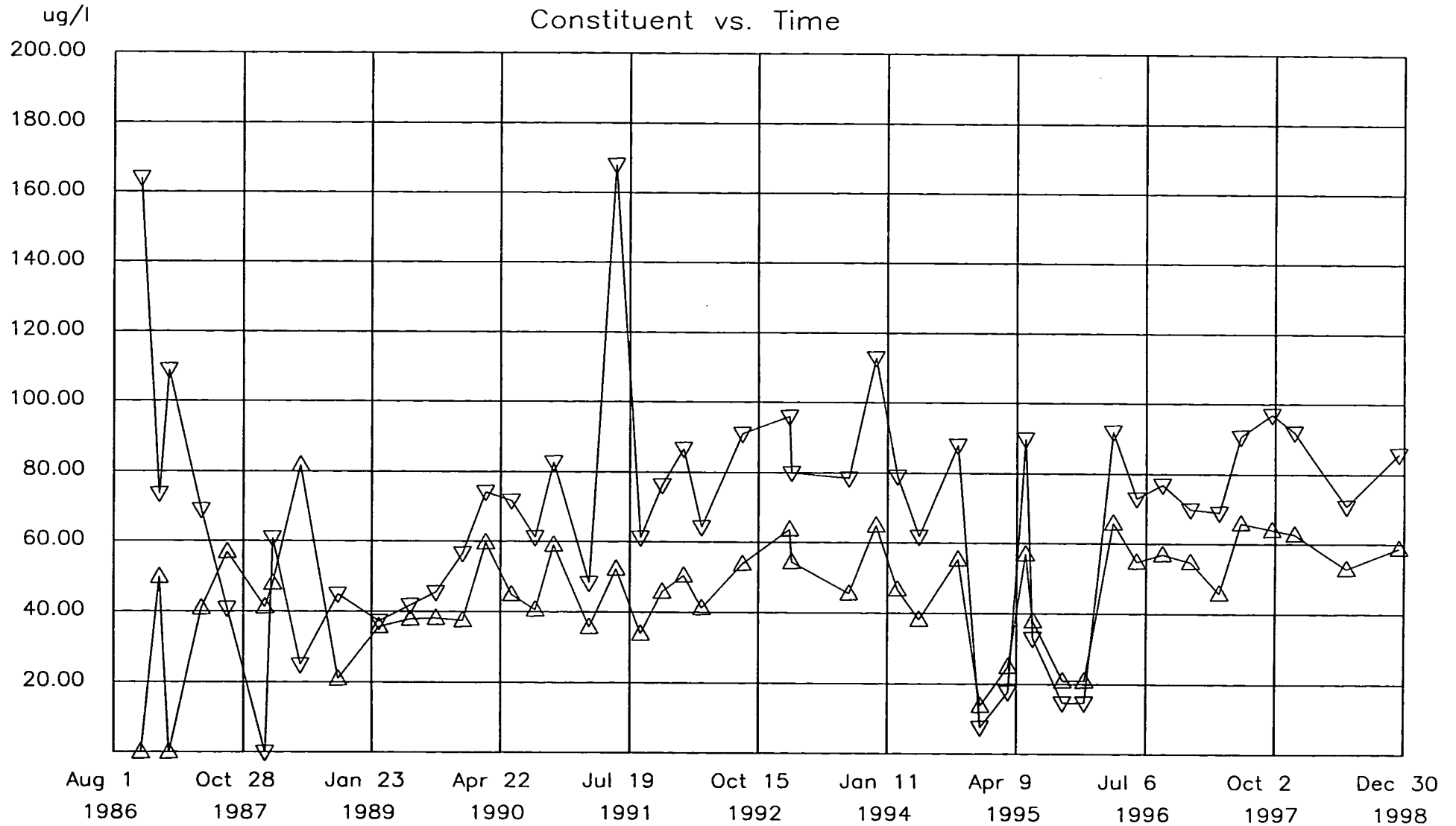
TCL: VOC

PF Code: T

Site: S22

△ = cis-1,2-Dichloroethene

▽ = trans-1,2-Dichloroethene

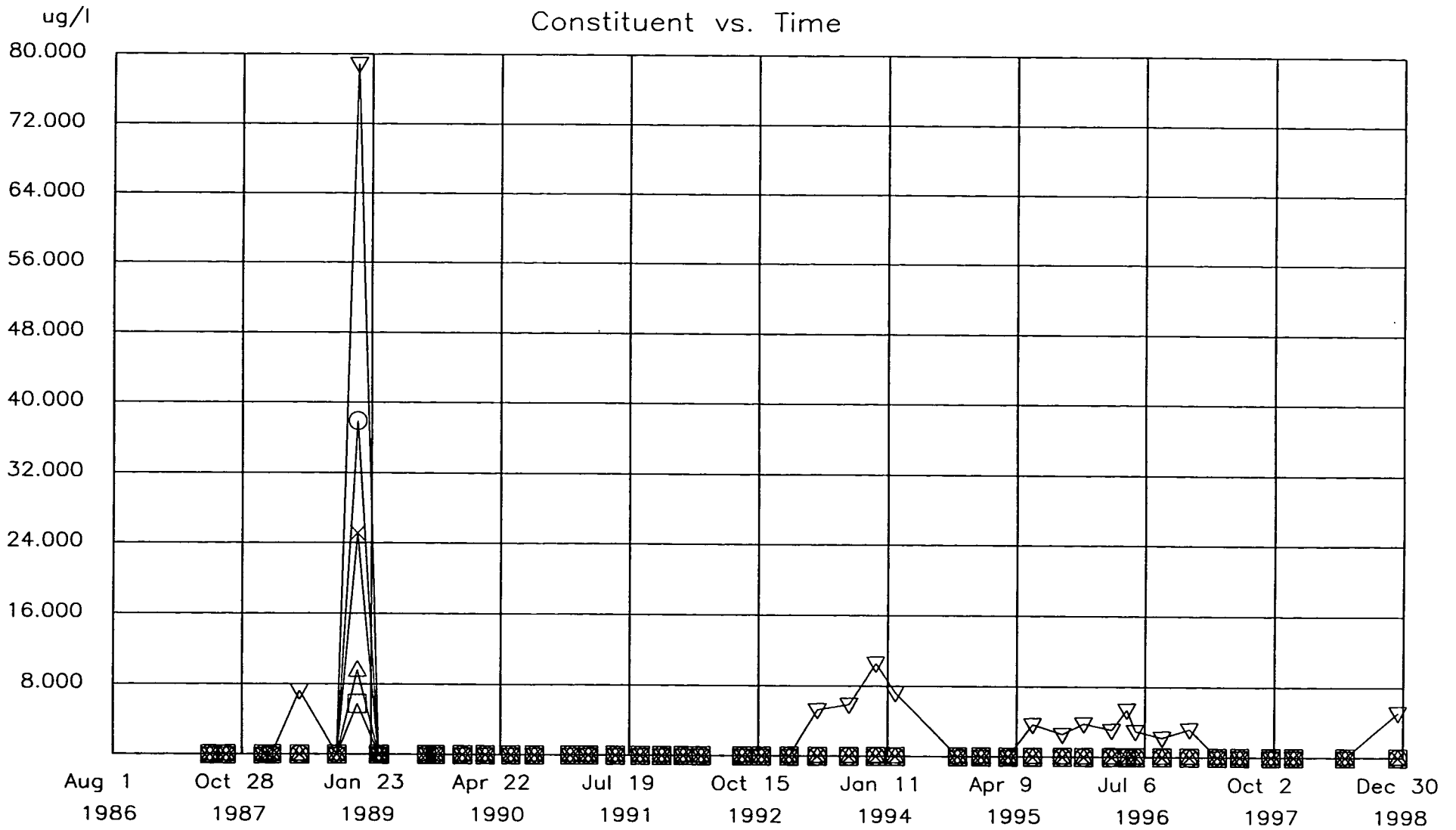


TCL: VOC

PF Code: T

Site: S25

- △ = Trichloroethene
- ▽ = cis-1,2-Dichloroethene
- = trans-1,2-Dichloroethene
- = 1,2-Dichloroethane
- × = 1,1-Dichloroethane



DEEP MONITORING WELLS

2D

5D

TCL: VOC

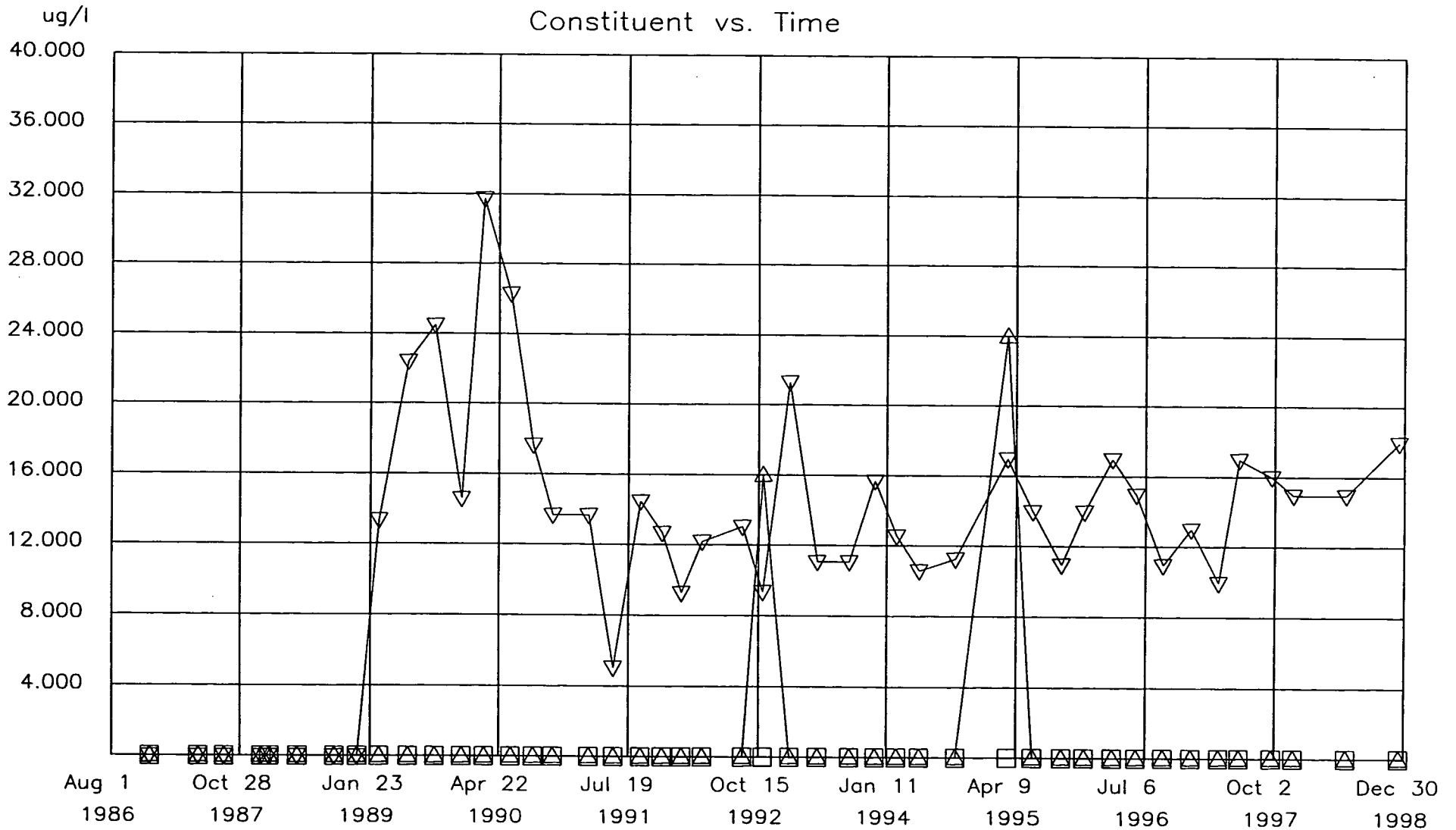
PF Code: T

Site: 2D

△ = Trichloroethene

▽ = cis-1,2-Dichloroethene

□ = trans-1,2-Dichloroethene



TCL: VOC
PF Code: T
Site: 5D

△ = Trichloroethene
▽ = cis-1,2-Dichloroethene
□ = Toluene

