



Bendix Engine Controls Division  
717 North Bendix Drive  
South Bend, IN 46620

JAN 18 8 57 PM '90

OFFICE OF PUBLIC  
AND HAZARDOUS  
WASTE  
DEPT

6 Maps  
Removed

January 12, 1990

Mr. Steve Pauly *formerly CERCLIS*  
Indiana Dept. of Environmental Management  
105 South Meridian Street  
P. O. Box 6015  
Indianapolis, Indiana 46206-6015

Subject: Hydro-Geological Monitoring Applicable to the South Bend,  
Indiana Divisions of Allied-Signal Inc.

Dear Mr. Pratt:

Enclosed is Copy No. 9 of the Groundwater Monitoring Quarterly Report  
for 3rd Quarter 1989, submitted by T. A. Gleason Associates.  
Allied-Signal has also submitted copies of the report to the City of  
South Bend, the United States Environmental Protection Agency and the  
St. Joseph County Health Department.

If we can be of assistance with respect to the report, please advise  
the undersigned.

Sincerely,

T. L. Moore  
President

TLM/ed

Enclosure

219-237 5062

t a gleason  
associates

JAN 18 8 57 PM '90

OFFICE OF SOLID  
AND HAZARDOUS  
WASTE MGMT  
EPA

GROUNDWATER MONITORING REPORT  
3RD QUARTER 1989  
ALLIED-SIGNAL, INC.  
SOUTH BEND COMPLEX  
SOUTH BEND, INDIANA

5 January 1990

PROJECT # ASCMPX SBIN 024

COPY NO. 9

3qr89ind  
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## 1.0 INTRODUCTION AND BACKGROUND

This report presents the results of the 3rd Quarter, September 1989 groundwater sampling and groundwater elevation measurements performed at the Allied-Signal, Inc., South Bend Complex, in South Bend, Indiana (see Figure 1). These results are a continuation of the groundwater monitoring program initiated by Allied in 1981.

## 2.0 GROUNDWATER MONITORING PROGRAM

Included in the monitoring program are twenty-five (25) monitor wells, five (5) naptha recovery wells and twenty-one (21) VOC recovery wells (see Table 1). The locations of the wells are shown in Figures 2 through 5.

## 3.0 SAMPLING METHODOLOGY

### 3.1 PURGING

All monitor wells were purged a total of three well volumes before samples were collected. The wells were purged using a centrifugal pump connected to the water outlet side of the dedicated bladder pumps. The dedicated bladder pumps were used to purge the low yielding wells. The naptha recovery well taps were allowed to run approximately five minutes before samples were collected. The VOC recovery wells were discharging and did not require additional purging, but were allowed to discharge through the sample tap for 5 minutes prior to sample collection.



### 3.2 SAMPLE COLLECTION

All monitor wells were sampled using a dedicated bladder pump. Samples from these wells were collected from the tap on the bladder pump outlet pipe. Wells S-16, 86-10, and 86-15 were sampled with a dedicated PVC bailer which was carefully lowered into and withdrawn from the well to avoid aeration of the samples. Samples from the naptha recovery wells were collected directly from a tap. Samples from the VOC recovery wells were collected at five locations along the recovery system. Each of the five points were representative of the recovery wells as listed on Table 1. The samples were collected from a sample tap on the outlet side of the recovery pumps.

### 3.3 SAMPLE HANDLING AND FIELD MEASUREMENTS

#### 3.3.1 Water Quality

Samples were measured in the field for pH, specific conductivity, and temperature immediately upon collection. All field measurement data were recorded on the sample data sheets. The samples for metals analysis were filtered through a 0.45 micron filter at time of sample collection and prior to being placed in pre-preserved containers. All samples were placed in insulated coolers with ice packs and shipped to Aqua Tech Environmental Laboratories, Inc., under the appropriate chain-of-custody. Samples were analyzed for volatile organic compounds (VOC) method 8240, cyanide, phenols, and metals (chrome, lead, and zinc).



### 3.3.2 Water Level Measurements

Water elevations were measured from thirty-eight (38) ground-water wells in and around the Bendix Complex (see Figure 2). Elevations were measured to the nearest 0.01 ft using an electronic water level indicator manufactured by Solinst Inc., Ontario, Canada. The new monitor wells and most of the existing monitor wells were surveyed by Lang, Feeney & Assoc., Inc. during September 1987 to verify the reference elevations. Water levels and flow rates were measured in the VOC recovery wells.

Water level measurements and the calculated water elevations are presented in Table 2.

Flow and drawdown data from the VOC recovery wells are presented in Table 2A.

### 4.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

As part of TAGA'S quality assurance procedures, duplicate samples were taken at monitor wells S-14, S-24, RWB-16, and RW-13. Four (4) field blanks were prepared and submitted for analysis along with the other samples.

### 5.0 ANALYTICAL RESULTS

The analytical results of the September 1989 sampling are presented in Tables 3 through 8. Tables 3, 4, and 5 present the organic results of monitor wells, naptha recovery wells, and VOC recovery wells.



TABLE 1 - SAMPLE SUMMARY  
3RD QUARTER 1989

<u>Monitor Wells</u>		Naptha <u>Recovery Wells</u>
1-D	S-14*	E-3
2-D	S-15	RWB-6
5-D	S-16	RWB-16*
7-D	S-17	RWB-21
8-D	S-20	RWB-22
9-33	S-21	
86-10	S-22	
86-15	S-23	
D-4	S-24*	
D-7	S-25	
S-1	S-26	
S-4A	S-27	
S-9		

<u>QA/OC Samples</u>	<u>VOC Recovery Wells</u>	
	<u>Sample Location</u>	<u>Recovery Well(s)</u>
Field Blank 1	RW 1-7	RW 1, 2, 3, 3A, 4, 5, 6, 7
Field Blank 2	RW 8-12	RW 8, 9, 9A, 10, 11, 12
Field Blank 3	RW 13*	RW 13
Field Blank 4	RW 17	RW 14, 15, 16, 17
S-14 Duplicate	RW 18-19	RW 18, 19
S-24 Duplicate		
RW-13 Duplicate		
RWB-16 Duplicate		

\*Duplicate Sample Taken  
 \*\*Not Sampled This Episode

table1  
 010590

t a gleason  
 associates





The field blank analysis showed that all compounds measured were below laboratory detection limits. The duplicate sample analysis showed that all parameters were within acceptable ranges for comparability. The laboratory results, QA/QC data, and sample data sheets are maintained in TAGA files and are available upon request.

#### 6.0 SCHEDULE

The next sampling episode (4th Quarter 1989) is scheduled for December 1989.

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Tables 6, 7, and 8 present the results for metals, cyanide, phenols, and field measurements for the monitor wells, naptha recovery wells, and VOC recovery wells.

Table 3, monitor well organic results, indicates that total VOC is consistent or decreasing in the shallow wells. Monitor well S-9 showed no VOC for the first time since monitoring began in 1986 and shows a significant decrease since start up of the VOC Recovery System in October 1988. The deep monitor well VOC concentrations have remained relatively consistant with the exception of Monitor Well D-7 which has shown a decrease in total VOC throughout 1988 and 1989.

Table 4 shows that total VOC in the naptha recovery well furthest from the geographic center of the naptha recovery area (RWB-21) appears to be decreasing in total VOC while total VOC has increased slightly in the other four wells (E-3, RWB-22, RWB-6, and RWB-16).

Table 5, the shallow VOC recovery well results, show a slight increase in total VOC since their initial installation. The only exception, RW 1-7, has been steadily decreasing in total VOC in 1989. Table 5 also shows a slight increase in total VOC in the deep VOC recovery well RW-13.

Tables 6, 7, and 8 show no significant changes in concentrations of metals, cyanide, or phenols in the 3rd quarter sampling episode for monitor wells, naptha recovery wells, and VOC recovery wells.



10-Nov-89  
WLM1A

WELL NO	REFERENCE ELEVATION	09/07/89		06/07/89		02/21/89	
		WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION
S-1	728.09	24.70	703.39	24.53	703.56	25.39	702.70
X S-2	721.82	NM		NM		NM	
S-3	716.65	20.45	696.20	19.70	696.95	20.91	695.74
X S-5	712.83	14.25	698.58	14.23	698.60	14.81	698.02
X S-6	713.08	NM		NM		NM	
X S-7	716.16	NM		NM		NM	
S-8	714.65	18.96	695.69	18.47	696.18	18.96	695.69
S-9	714.17	17.96	696.21	17.66	696.51	18.19	695.98
X S-10	715.40	NM		NM		NM	
X S-11	715.64	NM		NM		NM	
S-12	721.45	19.79	701.66	19.63	701.82	19.97	701.48
S-13	721.10	NM		NM		NM	
S-14	711.86	16.03	695.83	15.58	696.28	16.03	695.83
S-15	714.37	19.08	695.29	19.52	694.85	18.86	695.51
S-16	716.18	19.43	696.75	18.48	697.70	19.87	696.31
S-17	716.97	20.74	696.23	20.54	696.43	20.64	696.33
S-18	715.41	17.08	698.33	17.10	698.31	17.62	697.79
S-19	723.38	19.84	703.54	19.68	703.70	20.56	702.82
S-20	709.97	15.39	694.58	14.56	695.41	15.03	694.94
S-21	711.33	15.65	695.68	15.24	696.09	14.67	696.66
S-22	709.33	14.36	694.97	13.86	695.47	14.18	695.15
S-23	710.24	17.86	692.38	15.75	694.49	15.02	695.22
S-24	713.03	16.87	696.16	16.65	696.38	17.76	695.27
S-25	710.60	15.55	695.05	14.70	695.90	15.42	695.18
S-26	714.50	18.15	696.35	19.04	695.46	18.46	696.04
S-27	715.40	19.40	696.00	19.02	696.38	19.73	695.67

TABLE 2

WATER LEVEL MEASUREMENTS

PAGE 1 OF 6

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical  
Services

NOTES:

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

1 = SURVEYED BY LANG, FEENEY & ASSOC., INC. 9/87.  
WATER ELEVATIONS PRIOR TO JULY 1987 ARE BASED ON FORMER REFERENCE ELEVATIONS.

\* = FORMER REFERENCE ELEVATIONS

NM = NOT MEASURED THIS DATE

S-7 DESTROYED









10-Nov-89  
WLM2A

WELL NO.	(1) REFERENCE ELEVATION	09/07/89		06/07/89		02/21/89	
		WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION
D-1	720.73 *						
D-1A	721.69 *						
D-3	714.51						
D-4	717.85	21.95	695.90	21.73	696.12	22.19	695.66
D-5	712.14						
D-7	713.83	17.04	696.79	16.75	697.08	17.22	696.61
D-8	717.04						
D-9	717.00 *						
D-10	716.53						
D-11	723.47						
D-12	710.29						
I-1	711.52						
1-D	714.17	17.14	697.03	16.91	697.26	17.44	696.73
2-D	715.36	18.91	696.45	18.73	696.63	19.31	697.61
3-D	713.29						
4-D	712.10						
5-D	712.01	23.56	688.45	22.36	689.65	25.03	686.98
6-D	711.41						
7-D	714.85	20.88	693.97	21.36	693.49	22.04	692.81
8-D	714.56	20.73	693.83	20.42	694.14	20.90	693.66

TABLE 2

WATER LEVEL MEASUREMENTS

PAGE 3 OF 6

GROUNDWATER INVESTIGATIONS  
 - ALLIED CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT # ALCMPX 024

T A GLEASON ASSOCIATES  
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 Services

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25-Oct-89  
WLM2

WELL NO.	REFERENCE ELEVATION	12/06-07/88		09/21-25/88		05/17/88		02/03/88		01/02/88	
		WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION
D-1	720.73 *	NM		NM		NM		NM		NM	
D-1A	721.69 *	NM		NM		NM		NM		NM	
D-3	714.51	18.88	695.63	18.67	695.84	17.52	696.99	18.06	696.45	18.06	696.45
D-4	717.85	22.12	695.73	21.27	696.58	20.26	697.59	20.70	697.15	20.70	697.15
D-5	712.14	16.01	696.13	15.90	696.24	14.94	697.20	15.30	696.84	15.31	696.83
D-7	713.83	17.15	696.68	17.04	696.79	16.00	697.83	16.40	697.43	16.42	697.41
D-8	717.04	21.61	695.43	20.11	696.93	19.01	698.03	19.48	697.56	19.50	697.54
D-9	717.00 *	NM		NM		NM		NM		NM	
D-10	716.53	18.65	697.88	18.76	697.77	17.12	699.41	17.98	698.55	18.00	698.53
D-11	723.47	20.07	703.40	20.83	702.64	20.14	703.33	20.52	702.95	20.53	702.94
D-12	710.29	22.90	687.39	23.93	686.36	21.47	688.82	21.99	688.30	22.30	687.99
I-1	711.52	16.85	694.67	17.34	694.18	16.38	695.14	16.69	694.83	16.76	694.76
1-D	714.17	17.35	696.82	NM		15.84	698.33	16.35	697.82	16.32	697.85
2-D	715.36	19.11	696.25	18.35	697.01	17.23	698.13	17.74	697.60	17.75	697.61
3-D	713.29	NM		19.40	693.89	17.81	695.48	18.20	695.09	18.22	695.07
4-D	712.10	NM		23.56	688.54	22.01	690.09	22.48	689.62	22.56	689.54
5-D	712.01	NM		25.05	686.96	22.81	689.20	23.10	688.91	23.53	688.48
6-D	711.41	23.96	687.45	24.95	686.46	22.79	688.82	23.19	688.22	23.39	688.02
7-D	714.85	21.98	692.87	18.63	696.22	17.55	697.30	17.84	697.01	17.85	697.00
8-D	714.56	20.78	693.78	17.88	696.68	16.80	697.76	17.17	697.39	17.17	697.39

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TABLE 2

WATER LEVEL MEASUREMENTS  
PAGE 4 OF 6  
GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX 024  
T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



10-Nov-89  
WLM3A

WELL NO.	REFERENCE ELEVATION	09/07/89		06/07/89		02/21/89	
		WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION
86-1	715.70 *	NM		NM		NM	
86-2	714.98 *	NM		NM		NM	
86-4	715.09 *	NM		NM		NM	
86-5	715.04 *	NM		NM		17.03	698.01
86-6	***	NM		NM		NM	
86-7	714.15	16.55	697.60	NM		NM	
86-8	714.62 *	NM		NM		NM	
86-9	715.25 *	NM		NM		18.07	697.18
86-10	715.06	17.75	697.31	17.60	697.46	NM	
86-11	715.14 *	NM		NM		NM	
86-12	715.71 *	NM		NM		NM	
86-13	714.75	NM		NM		NM	
86-14	715.05 *	NM		NM		18.12	696.93
86-15	715.06 *	17.50	697.56	17.76	697.30	NM	
86-18	714.84	NM		NM		NM	
86-19	714.33	NM		NM		NM	
86-20	713.07 *	NM		NM		NM	
86-21	713.76 *	NM		NM		NM	
7-25	720.47	18.15	702.32	20.46	700.01	21.25	699.22
7-50	719.83	NM		NM		NM	
8-27	715.45 *	NM		NM		NM	
9-33	716.69	18.27	698.42	18.87	697.82	18.35	698.34
OW-1	***	NM		NM		NM	
OW-2	***	NM		NM		NM	
S4-A	***	15.16		14.93		16.29	
RWB-6	715.80	19.95	695.85	20.70	695.10	19.68	696.12
RWB-16	715.30	18.80	696.50	18.45	696.85	18.93	696.37
RWB-21	717.62	22.31	695.31	21.20	696.42	21.67	695.95
RWB-22	715.11	19.49	695.62	18.71	696.40	19.35	695.76
RWE-3	714.50	21.62	692.88	19.70	694.80	19.66	694.84

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WELL 86-1 WAS DESTROYED

TABLE 2

WATER LEVEL MEASUREMENTS

PAGE 5 OF 6

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



25-Oct-89  
WLM3

WELL NO.	(1) REFERENCE ELEVATION	12/06-07/88		09/21-25/88		05/17/88		02/03/88		01/02/88	
		WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION
86-1	715.70 *	NM		NM		NM		NM		NM	
86-2	714.98 *	NM		NM		NM		NM		NM	
86-4	715.09 *	NM		NM		NM		NM		NM	
86-5	715.04 *	NM		NM		NM		NM		NM	
86-6	***	NM		NM		NM		NM		NM	
86-7	714.15	16.27	697.88	16.81	697.34	15.54	698.61	16.12	698.03	16.12	698.03
86-8	714.62 *	17.20	697.42	17.22	697.40	NM		NM		NM	
86-9	715.25 *	17.91	697.34	17.86	697.39	NM		NM		NM	
86-10	715.06	18.02	697.04	17.75	697.31	16.49	698.57	17.1	697.96	17.43	697.63
86-11	715.14 *	18.17	696.97	18.89	696.25	NM		NM		NM	
86-12	715.71 *	18.72	696.99	18.42	697.29	NM		NM		NM	
86-13	714.75	17.47	697.28	17.44	697.31	NM		NM		NM	
86-14	715.05 *	17.95	697.10	17.55	697.50	NM		NM		NM	
86-15	715.06 *	17.96	697.10	17.24	697.82	16.34		17.1	697.63	NM	
86-18	714.84	NM		18.53	696.31	17.69	697.15	18.21	696.63	18.22	696.62
86-19	714.33	NM		NM		NM		NM		NM	
86-20	713.07 *	NM		NM		NM		NM		NM	
86-21	713.76 *	NM		NM		NM		NM		NM	
7-25	720.47	NM		NM		20.31	700.16	20.8	699.67	20.84	699.63
7-50	719.83	20.12	699.71	11.24	708.59	19.97	699.86	20.21	699.62	20.24	699.59
8-27	715.45 *	NM		NM		NM		NM		NM	
9-33	716.69	18.20	698.49	18.55	698.14	17.99	698.7	18.37	698.32	18.38	698.31
OW-1	***	15.05		14.89		NM		NM		14.36	
OW-2	***	15.12		14.95		NM		NM		14.40	
S4-A	***	15.42		14.87		13.9		NM		14.21	
RWB-6	715.80	NM		19.59	696.21	18.65	697.15	19.02	696.78	19.00	696.80
RWB-16	715.30	18.92	696.38	NM		17.78	697.52	18.29	697.01	18.31	696.99
RWB-21	717.62	21.96	695.66	NM		20.82	696.8	21.14	696.48	21.10	696.52
RWB-22	715.11	NM		22.13	692.98	18.01	697.1	18.43	696.68	18.44	696.67
RWE-3	714.50	NM		19.92	694.58	19.21	695.29	19.52	694.98	19.51	694.99

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TABLE 2

WATER LEVEL MEASUREMENTS  
PAGE 6 OF 6

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services





TABLE 2A  
 WATER LEVEL MEASUREMENTS  
 VOC RECOVERY SYSTEM  
 PROJECT # ALCMPX SBIN 024  
 SEPTEMBER 11, 1989

<u>VOC WELL #</u>	<u>WATER LEVEL (FT)</u>	<u>CONTROL WATER LEVEL (FT)</u>	<u>FLOW GPM</u>	<u>DRAWDOWN (FT)</u>
1	23.30	13.30		10.00
2	26.30+	13.40		12.90+
3	16.25	14.15		2.10
3A	17.38	14.60		2.78
4	21.30+	14.90		6.40
5	19.60	15.55		4.05
6	19.00+	15.00		4.00+
7	18.00+	15.70	15-20*	2.30+
8	16.40	15.60	55-60**	0.80
9A	16.55	15.80		0.75
9	22.35	16.10		6.25
10	16.30	15.50		0.80
11	16.46	15.15		1.31
12	16.55	14.50		2.05
13	28.31	18.60	50-55	9.71
14	16.52	15.80		0.72
15	16.63	15.20		1.43
16	16.47	14.50		1.97
17	13.25	15.40	0	
18			50***	
19				
S-17	20.14	18.92		

\* = RW 1-7

\*\* = RW 8-12

\*\*\* = RW 18 & 19

wlmvoc  
102689



WELL NO.	REFERENCE ELEVATION	06/06/87		06/04/87	
		WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION
86-1	715.70	NM		NM	
86-2	714.98	NM		18.42	696.56
86-4	715.09	NM		18.44	696.65
86-5	715.04	NM		18.40	696.64
86-6		17.12		17.18	
86-7	714.27	16.67	697.60	16.70	697.57
86-8	714.62	17.07	697.55	17.12	697.50
86-9	715.25	17.73	697.52	NM	
86-10	715.06	17.54	697.52	17.58	697.48
86-11	715.14	17.65	697.49	17.72	697.42
86-12	715.71	18.22	697.49	18.28	697.43
86-13	714.75	17.41	697.34	17.44	697.31
86-14	715.05	17.36	697.69	17.42	697.63
86-15	715.06	17.23	697.83	17.26	697.80
86-18	714.84	18.46	696.38	NM	
86-19	714.33	NM		16.78	697.55
86-20	713.07	NM		NM	
86-21	713.76	NM		16.16	697.60
7-25	720.38	20.78	699.60	20.65	699.73
7-50	719.84	NM		NM	
8-27	715.45	NM		NM	
9-33	716.57	18.38	698.19	18.42	698.15
RWB-6	715.80	NM		NM	
RWB-16	715.30	NM		NM	
RWB-21	717.62	NM		NM	
RWB-22	715.11	NM		NM	
RWE-3	714.50	NM		NM	

NOTES:  
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS

TABLE 1  
WATER LEVEL MEASUREMENTS  
PAGE 2 OF 2  
GROUNDWATER INVESTIGATIONS  
ALLIED COMPLEX  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX  
T A GLEASON ASSOCIATES  
ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES



WELL NO.	REFERENCE ELEVATION	06/06/87		06/04/87	
		WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION
S-1	726.22	NM		25.17	701.05
S-2	721.76	NM		20.62	701.14
S-3	716.61	20.25	696.36	20.27	696.34
S-5	713.12	14.25	698.87	14.27	698.85
S-6	715.44	NM		NM	
S-7	716.52	17.80	698.72	17.80	698.72
S-8	714.60	18.67	695.93	18.70	695.90
S-9	713.30	17.59	695.71	17.60	695.70
S-10	715.40	NM		NM	
S-11	715.64	NM		NM	
S-12	721.23	20.15	701.08	20.13	701.10
S-13	721.10	NM		NM	
S-14	711.89	NM		15.64	696.25
S-15	714.29	18.55	695.74	18.59	695.70
S-16	716.14	18.85	697.29	18.86	697.28
S-17	717.00	NM		NM	
S-18	715.44	16.81	698.63	16.85	698.59
S-19	723.16	NM		NM	
S-20	710.00	15.34	694.66	15.39	694.61
S-21	711.37	NM		16.65	694.72
S-22	709.36	NM		14.03	695.33
S-23	710.53	NM		16.50	694.03
S-24					
S-25					
S-26					
S-27					
D-1	720.73	NM		NM	
D-1A	721.69	NM		NM	
D-3	714.45	NM		NM	
D-4	717.88	NM		NM	
D-5	712.07	NM		NM	
D-7	713.74	NM		NM	
D-8	717.07	NM		NM	
D-9	717.00	NM		NM	
D-10	716.69	NM		NM	
D-11	723.24	NM		NM	
D-12	710.35	NM		NM	
I-1	711.58	NM		NM	
1-D	714.19	NM		NM	
2-D	715.36	NM		NM	
3-D	713.29	NM		NM	
4-D	712.12	NM		NM	
5-D	714.43	NM		NM	
6-D	713.37	NM		NM	

NOTES:

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TABLE 1

WATER LEVEL MEASUREMENTS

PAGE 1 OF 2

GROUNDWATER INVESTIGATIONS  
ALLIED COMPLEX  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX

T A GLEASON ASSOCIATES

ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES













5DOCMW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS										OTHER VOC UG/L		
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHENE UG/L	TRANS 1,2 DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2 DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L		TOLUENE UG/L	
5-D	12/18/86	4	AQUA		NPL	5	7	70	100	200	5	5	5	5	5	2000	
	12/18/86	5	AQUA		ND	ND	ND	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/11/87	4	AQUA		ND	ND	ND	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/05/87	19	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	15	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/14/88	12	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/09/88	21	AQUA		ND	ND	ND	6.1	ND	ND	ND	ND	ND	ND	ND	6.7**	ND
	03/14/88	2	AQUA		ND	ND	ND	10.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/18/88	14	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/23/88	15	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/08/88	9	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/25/89	31	AQUA		ND	ND	ND	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/09/89	23	AQUA	624		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/10/89	36	AQUA	3240		ND	ND	5.5	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 AT DETECTION LIMIT SPECIFIED BY THE LABORATORY. SEE LAB REPORT.

BLANK SPACE INDICATED ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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

\*\*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 CONCLUDED THAT THE 2/9/88 SAMPLING DATA IS AN ANOMALY.

TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 3 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



7DOCMW  
05-Oct-89

LABORATORY ANALYTICAL PARAMETERS

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS												
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L	OTHER VOC UG/L	
					NPL	5	7	70	100	200	5	5	5	2	NPL	2000	
					PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	
7-D	07/10/87	3	AQUA		ND	ND	ND	17.0	17.0	ND	19.0	ND	ND	ND	ND	ND	
	07/10/87	4	AQUA		ND	ND	250.0	16.0	16.0	ND	17.0	ND	ND	ND	ND	ND	
	09/04/87	29	AQUA		ND	ND	220.0	ND	ND	ND	20.0	ND	14.0	ND	ND	ND	
	01/15/88	30	AQUA		ND	ND	142.0	10.0	10.0	ND	17.0	ND	ND	ND	ND	ND	
	02/09/88	15	AQUA		ND	ND	148.0	20.0	20.0	ND	14.0	ND	ND	ND	ND	ND	
	05/19/88	22	AQUA		ND	ND	210.0	ND	ND	ND	16.6	ND	ND	ND	ND	ND	
	09/24/88	18	AQUA		ND	ND	52.0	7.6	7.6	ND	9.2	ND	ND	ND	ND	ND	
	12/10/88	31	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/25/89	34	AQUA		ND	ND	106.0	7.0	7.0	ND	ND	ND	12.6	ND	ND	ND	
	06/05/89	13	AQUA	624	ND	ND	110.0	5.7	5.7	ND	ND	ND	ND	ND	ND	ND	
	09/10/89	33	AQUA	8240	ND	ND	110.0	7.1	7.1	ND	ND	ND	ND	ND	ND	ND	

UNITS  
MAXIMUM CONTAMINANT LEVEL (MCL):

NOTES:

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SEE LAB REPORT.  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.  
NPL = NO U.S. EPA PUBLISHED LEVEL  
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 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 4 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX 89IN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



8DOCMW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS										OTHER VOC UG/L
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	
UNITS															
MAXIMUM CONTAMINANT LEVEL (MCL):															
					NPL	5	7	70	100	200	5	5	2	NPL	PROPOSED=2000
8-D	07/10/87	5	AQUA		ND	ND	ND	720.0	27.0	ND	ND	ND	ND	ND	ND
	09/04/87	30	AQUA		ND	ND	900.0	ND	ND	ND	ND	ND	ND	ND	ND
	01/15/88	28	AQUA		ND	ND	840.0	ND	ND	ND	ND	ND	ND	ND	ND
	01/15/88	29	AQUA		ND	ND	855.0	ND	ND	ND	ND	ND	ND	ND	ND
	02/09/88	13	AQUA		ND	ND	770.0	ND	ND	ND	ND	ND	ND	ND	ND
	02/09/88	14	AQUA		ND	ND	630.0	ND	ND	ND	ND	ND	ND	ND	ND
	05/19/88	23	AQUA		ND	ND	1600.0	24.0	ND	ND	ND	ND	67.9	ND	ND
	09/24/88	19	AQUA		ND	ND	420.0	32.0	ND	ND	ND	ND	ND	ND	ND
	12/10/88	32	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/25/89	35	AQUA		ND	ND	570.0	33.1	ND	ND	ND	ND	24.5	ND	ND
	06/08/89	11	AQUA	624	ND	ND	600.0	37.2	ND	ND	ND	ND	18.3	ND	ND
	09/10/89	35	AQUA	8240	ND	ND	560.0	35.6	ND	ND	ND	ND	17.7	ND	ND

NOTES:

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

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 5 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services





893030AMW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS											
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L	OTHER VOC UG/L
UNITS					NPL	5	7	70	100	200	5	5	2	NPL	PROPOSED=2000	
MAXIMUM CONTAMINANT LEVEL (MCL):																
9-33	01/08/87	11	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/05/87	3	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	3	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/13/88	3	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/10/88	31	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/18/88	3	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/22/88	3	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/09/88	15	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/22/89	4	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/10/89	35	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/07/89	4	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:

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BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 6 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



8610CMW  
05-Oct-89

LABORATORY ANALYTICAL PARAMETERS

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	MAXIMUM CONTAMINANT LEVEL (MCL):										OTHER VOC UG/L	
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L		TOLUENE UG/L
86-10	09/02/86	7	AQUA		NPL	5	7	70	100	200	5	5	2	NPL	2000	ND
	10/10/86	18	AQUA		ND	ND	ND	ND	85.4	ND	308.0	ND	ND	ND	ND	ND
	02/24/89	22	AQUA		5.7	ND	ND	100.0	130.0	99.7	440.0	ND	ND	ND	ND	ND
	06/08/89	10	AQUA	624	ND	ND	ND	67.3	41.0	ND	340.0	ND	ND	ND	ND	ND
	06/07/89	3	AQUA	8240	ND	ND	ND	75.7	35.3	15.5	380.0	ND	ND	ND	ND	ND
									35.1		230.0	ND	16.3	ND	ND	ND

NOTES:

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 BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.  
 NPL = NO U.S. EPA PUBLISHED LEVEL  
 VOC RESULTS ARE A SUMMARY OF A GOMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

TABLE 3

MONITOR WELLS  
 GROUNDWATER QUALITY ANALYSIS  
 ORGANIC COMPOUNDS  
 PAGE 7 OF 26

GROUNDWATER INVESTIGATIONS  
 ALLIED-SIGNAL CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services







D40CMW  
05-Oct-89

LABORATORY ANALYTICAL PARAMETERS

NOTES:

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

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	MAXIMUM CONTAMINANT LEVEL (MCL):										OTHER VOC UG/L	
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L		TOLUENE UG/L
D-4	10/01/86	11	AQUA		NPL	5	7	70	100	200	5	5	2	NPL	PROPOSED=2000	
	02/12/87	13	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	08/05/87	8	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	8	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/13/88	4	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/13/88	5	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/08/88	7	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/08/88	8	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/18/88	10	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/22/88	10	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/08/88	3	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/23/89	14	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140.0
	06/10/89	34	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/09/89	14	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 9 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX.SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services





0700MW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS											OTHER VOC UG/L
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L	
D-7	10/01/86	10	AQUA		NPL	5	7	70	100	200	5	5	2	NPL	2000	
	11/06/86	26	AQUA		ND	689.0	ND	ND	20.2	ND	ND	ND	ND	ND	ND	ND
	01/07/87	9	AQUA		ND	437.0	ND	40.0	15.7	ND	ND	ND	ND	ND	ND	ND
	02/12/87	14	AQUA		ND	812.0	ND	30.0	30.0	ND	ND	ND	ND	ND	ND	ND
	08/05/87	9	AQUA		ND	890.0	ND	33.0	ND	ND	ND	ND	ND	ND	ND	ND
	06/05/87	10	AQUA		ND	900.0	ND	31.0	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	17	AQUA		ND	800.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	18	AQUA		ND	750.0	ND	30.0	ND	ND	ND	ND	ND	ND	ND	ND
	01/14/88	14	AQUA		ND	710.0	ND	30.0	ND	ND	ND	ND	ND	ND	ND	ND
	02/08/88	10	AQUA		ND	680.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/18/88	20	AQUA		ND	1165.0	ND	48.2	ND	ND	ND	ND	19.1	ND	ND	ND
	09/24/88	29	AQUA		ND	780.0	ND	26.0	ND	ND	ND	ND	ND	ND	ND	ND
	12/09/88	16	AQUA		ND	483.0	ND	22.1	ND	ND	ND	ND	10.0	ND	ND	ND
	12/09/88	17	AQUA		ND	435.0	ND	21.9	ND	ND	ND	ND	10.0	ND	ND	ND
	02/24/89	21	AQUA		ND	380.0	ND	16.4	ND	ND	ND	ND	ND	ND	ND	ND
06/10/89	36	AQUA		624	310.0	ND	15.5	ND	ND	ND	ND	ND	ND	ND	ND	
08/09/89	30	AQUA		8240	300.0	ND	14.0	ND	ND	ND	ND	ND	ND	ND	ND	

NOTES:

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

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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.

TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



STOCMW  
05-Oct-89

LABORATORY ANALYTICAL PARAMETERS

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	1,1-DI-CHLORO-ETHANE	1,2-DI-CHLORO-ETHANE	1,1-DI-CHLORO-ETHYLENE	CIS 1,2-DICHLORO-ETHYLENE	TRANS 1,2-DICHLORO-ETHYLENE	1,1,1-TRICHLORO-ETHANE	TRI-CHLORO-ETHYLENE	1,2-DI-CHLORO-PROPANE	VINYL CHLORIDE	CHLORO-FORM	TOLUENE	OTHER VOC
					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-1	11/05/86	1*	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/17/86	18*	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/05/87	1	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	1	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/13/88	1	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/08/88	1	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/18/88	1	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/22/88	1	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/09/88	12	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/22/89	1	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/22/89	2	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/08/89	14	AQUA	624		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/08/89	15	AQUA	624		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/09/89	20	AQUA	3240		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

UNITS  
MAXIMUM CONTAMINANT LEVEL (MCL):

NPL 5 7 200 70 100 5 2000

NOTES:

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 SEE LAB REPORT  
 BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.  
 NPL = NO U.S. EPA PUBLISHED LEVEL  
 VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.  
 \* = BIS (2-ETHYLHEXYL) PHTHALATE REPORTED AS 15.6 UG/L  
 + = BIS (2-ETHYLHEXYL) PHTHALATE REPORTED AS 7.0 UG/L

TABLE 3

MONITOR WELLS  
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GROUNDWATER INVESTIGATION  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



SAOOCMW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS												OTHER VOC UG/L
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L	PROPOSED=2000		
UNITS																	
MAXIMUM CONTAMINANT LEVEL (MCL):																	
					NPL	5	7	70	100	200	5	5	2	NPL	PROPOSED=2000		
S-1A	06/05/87	22	AQUA		1100.0	ND	200.0	820.0	110.0	200.0	120.0	ND	ND	ND	ND		
	09/04/87	27	AQUA		1100.0	ND	80.0	2000.0	170.0	ND	17.0	ND	790.0	ND	ND		
	01/14/88	25	AQUA		1600.0	ND	180.0	1800.0	112.0	ND	ND	ND	700.0	ND	ND		
	02/08/88	2	AQUA		1500.0	ND	165.0	1770.0	160.0	ND	ND	ND	900.0	ND	ND		
	05/18/88	7	AQUA		1700.0	ND	165.0	2800.0	ND	ND	ND	ND	437.0	ND	ND		
	05/18/88	8	AQUA		1640.0	ND	200.0	2750.0	ND	ND	ND	ND	373.0	ND	ND		
	09/22/88	7	AQUA		1810.0	7.0	292.0	940.0	154.0	11.0	40.0	ND	1570.0	ND	ND		
	09/22/88	8	AQUA		1820.0	7.3	281.0	920.0	155.0	10.0	39.0	ND	1620.0	ND	ND		
	12/10/88	26	AQUA		970.0	ND	114.0	1600.0	135.0	ND	23.7	ND	633.0	ND	ND		
	02/27/89	43	AQUA		700.0	ND	110.0	1400.0	150.0	8.7	17.2	ND	270.0	ND	ND		
	06/10/89	37	AQUA	624	660.0	ND	120.0	1080.0	190.0	ND	ND	ND	ND	ND	ND		
	06/10/89	38	AQUA	624	620.0	ND	110.0	1040.0	190.0	ND	ND	ND	ND	ND	ND		
	09/08/89	25	AQUA	8740	580.0	ND	120.0	840.0	160.0	34.0	19.7	ND	69.5	ND	ND		

NOTES

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BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



S90CMW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS											
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L	OTHER VOC UG/L
UNITS					NPL	5	7	70	100	200	5	5	2	NPL	PROPOSED=2000	
MAXIMUM CONTAMINANT LEVEL (MCL):																
S-9	10/01/86	12	AQUA		ND	81.3	ND	2.2	ND	ND	ND	ND	ND	ND	ND	ND
	11/05/86	4*	AQUA		ND	29.0	ND	2.3	ND	ND	ND	ND	ND	ND	ND	ND
	12/18/86	20	AQUA		ND	210.0	ND	15.0	ND	ND	ND	ND	ND	ND	ND	ND
	12/18/86	30	AQUA		ND	43.3	ND	23.0	ND	ND	ND	ND	ND	ND	ND	ND
	02/12/87	12	AQUA		ND	313.0	ND	17.0	ND	ND	ND	ND	ND	ND	ND	ND
	08/05/87	7	AQUA		ND	460.0	ND	13.0	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	9	AQUA		ND	170.0	ND	43.0	ND	ND	ND	ND	ND	ND	ND	ND
	01/13/88	6	AQUA		ND	810.0	ND	47.6	ND	ND	ND	ND	ND	ND	ND	ND
	02/08/88	9	AQUA		ND	440.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/18/88	9	AQUA		ND	440.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/23/88	9	AQUA		ND	240.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/08/88	4	AQUA		ND	12.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2/23/89	13	AQUA	624	ND	6.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	08/10/89	33	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/08/89	15	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:

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BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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

\* = BIS(2-ETHYLHEXY) PHTHALATE REPORTED AS 6.6 UG/L

TABLE 3

MONITOR WELLS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX-SBIN 024

T A GLEASON ASSOCIATES  
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WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS										OTHER VOC UG/L				
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L		TOLUENE UG/L			
S-14	11/06/86	21	AQUA		ND	120.0	ND	ND	ND	42.2	ND	3.6	ND	ND	ND	ND	ND	ND	ND
	02/12/87	15	AQUA		77.0	217.0	20.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/05/87	5	AQUA		58.0	180.0	ND	150.0	12.0	ND	ND	8.5	ND	ND	ND	ND	ND	ND	ND
	09/03/87	7	AQUA		ND	140.0	ND	120.0	ND	ND	ND	8.0	ND	ND	ND	ND	ND	ND	ND
	01/14/88	23	AQUA		113.0	108.0	15.0	240.0	ND	21.0	14.0	14.0	55.0	ND	ND	ND	ND	ND	ND
	02/08/88	5	AQUA		120.0	115.0	ND	250.0	16.0	15.0	10.1	11.0	ND	ND	ND	ND	ND	ND	ND
	05/18/88	5	AQUA		135.0	59.3	8.9	396.0	12.3	12.7	10.1	ND	ND	ND	ND	ND	ND	ND	ND
	09/23/88	5	AQUA		62.0	55.0	9.3	98.0	10.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/10/88	23	AQUA		30.5	43.1	ND	91.0	6.6	6.5	11.5	ND	ND	ND	ND	ND	ND	ND	ND
	02/23/89	16	AQUA		170.0	ND	12.6	155.0	8.6	17.9	16.1	15.1	ND	ND	ND	ND	ND	ND	ND
	06/10/89	32	AQUA	624	170.0	30.5	25.4	180.0	18.1	44.7	15.2	12.4	ND	ND	ND	ND	ND	ND	ND
	09/09/89	23	AQUA	6240	84.5	18.3	14.7	124.0	10.2	34.7	12.4	12.2	ND	ND	ND	ND	ND	ND	ND
	09/09/89	24	AQUA	8240	79.6	18.4	14.8	120.0	9.8	33.0	12.2	12.2	ND	ND	ND	ND	ND	ND	ND

NOTES:

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 SEE LAB REPORT.

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL.

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

TABLE 3

MONITOR WELLS  
 GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
 ALLIED-SIGNAL CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services



WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS										OTHER VOC UG/L
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	
UNITS															
MAXIMUM CONTAMINANT LEVEL (MCL):															
					NPL	5	7	PROPOSED=70	PROPOSED=100	200	5	PROPOSED=5	2	NPL	PROPOSED=2000
S-15	11/06/86	27*	AQUA		ND	1.2	ND		1.5	ND	ND	ND	ND	ND	ND
	12/18/86	22	AQUA		ND	ND	ND		ND	ND	ND	ND	ND	ND	ND
	06/05/87	6	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	6	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	5	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/14/88	24	AQUA		22.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/08/88	4	AQUA		19.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/18/88	6	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/23/88	6	AQUA		5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/10/88	24	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	121.0
	02/23/89	15	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/10/89	31	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/09/89	22	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140.0

NOTES:

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BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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.

\* = BIS (2-ETHYLHEXYL) PHTHALATE REPORTED AS 8.5 UG/L

TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



S160CMW  
19-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS															
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L	OTHER VOC UG/L				
S-16	11/18/86	11*	AQUA		NPL	5	7	70	100											
	12/18/86	19	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/18/86	29	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/12/87	11	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/05/87	12	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/04/87	28	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/15/88	27	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/09/88	12	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/19/88	25	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/23/88	14	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/10/88	29	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/24/89	20	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/08/89	12	AQUA	624		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/19/89	34	AQUA	8240		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

NOTES:

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BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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

\* = BIS (2-ETHYLHEXYL) PHTHALATE REPORTED AS 6.1 UG/L

TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



S170C-MW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS										OTHER VOC UG/L		
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L		TOLUENE UG/L	
MAXIMUM CONTAMINANT LEVEL (MCL):																	
					NPL	5	7	70	100	200	5	5	5	2	NPL	2000	
S-17	11/16/86	16	AQUA		4.3	ND	1.5		ND	ND	ND	12.0	ND	ND	ND	ND	
	01/07/87	4	AQUA		ND	ND	ND		ND	ND	ND	94.8	ND	ND	ND	ND	
	02/12/87	3	AQUA		ND	ND	ND		7.9	ND	ND	116.0	ND	ND	ND	ND	
	06/05/87	15	AQUA		ND	ND	ND		5.8	ND	ND	80.0	ND	ND	ND	ND	
	09/03/87	20	AQUA		ND	ND	ND		ND	ND	ND	86.0	ND	ND	ND	ND	
	01/14/88	22	AQUA		ND	ND	ND		8.8	ND	ND	68.0	ND	ND	ND	ND	
	02/10/88	33	AQUA		ND	ND	ND		5.8	ND	ND	75.0	ND	ND	ND	ND	
	05/19/88	26	AQUA		ND	ND	ND		ND	ND	ND	60.7	ND	ND	ND	ND	
	09/23/88	12	AQUA		ND	ND	ND		ND	ND	ND	78.0	ND	ND	ND	ND	
	02/23/89	17	AQUA		ND	ND	ND		ND	ND	ND	75.9	ND	ND	ND	ND	
	06/09/89	27	AQUA	624	ND	ND	ND		ND	ND	ND	65.7	ND	ND	ND	ND	
	09/08/89	13	AQUA	6240	ND	ND	ND		ND	ND	ND	53.8	ND	ND	ND	ND	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
ND = NOT DETECTED AT DETECTION LIMIT SPECIFIED BY THE LABORATORY. SEE LAB REPORT.

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.  
NPL = NO U.S. EPA PUBLISHED LEVEL

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 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 17 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services





S2000MW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS										OTHER VOC UG/L								
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L		TOLUENE UG/L							
S-20	11/07/86	30	AQUA		NPL																		
	02/12/87	9	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	06/05/87	16	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/87	10	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/13/88	7	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/02/88	19	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/19/88	19	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/25/88	23	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/25/88	24	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/08/88	5	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/22/89	9	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/09/89	22	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/03/89	29	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



SZ100MW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS											
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHENE UG/L	1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L
UNITS																
MAXIMUM CONTAMINANT LEVEL (MCL):																
					NPL	5	7	70	100	200	5	5	2	NPL	2000	
S-21	11/08/88	17	AQUA		ND	ND	ND	116.0		ND	ND	ND	ND	ND	ND	ND
	12/17/86	13	AQUA		ND	ND	ND	89.3		ND	ND	ND	ND	ND	ND	ND
	02/11/87	5	AQUA		ND	ND	ND	88.5		ND	ND	ND	ND	ND	ND	ND
	06/05/87	17	AQUA		ND	ND	5.0	30.0		ND	ND	ND	ND	ND	ND	ND
	06/05/87	18	AQUA		ND	ND	5.8	34.0		ND	ND	ND	ND	ND	ND	ND
	09/03/87	14	AQUA		ND	ND	50.0	13.0		ND	ND	ND	ND	ND	ND	ND
	01/14/88	11	AQUA		ND	ND	53.2	20.4		ND	ND	ND	ND	ND	ND	ND
	02/09/88	22	AQUA		ND	ND	60.0	33.0		ND	ND	ND	ND	ND	ND	ND
	05/19/88	13	AQUA		ND	ND	137.0	11.1		ND	ND	ND	ND	ND	ND	ND
	09/23/88	13	AQUA		ND	ND	58.0	49.0		ND	ND	ND	ND	ND	ND	ND
	12/05/88	10	AQUA		ND	ND	66.0	32.8		ND	ND	ND	ND	ND	ND	ND
	02/23/89	10	AQUA		ND	ND	64.1	32.7		ND	ND	ND	ND	ND	ND	ND
	06/05/89	24	AQUA	624	ND	ND	48.3	24.0		ND	ND	ND	ND	ND	ND	ND
	09/10/89	41	AQUA	3240	ND	ND	72.5	41.6		ND	ND	ND	ND	ND	ND	ND

NOTES:

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SEE LAB REPORT.

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NPL = NO U.S. EPA PUBLISHED LEVEL

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 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 19 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical  
Services



S22OCMW  
05-Oct-89

LABORATORY ANALYTICAL PARAMETERS

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	1,1-DI-CHLORO-ETHANE	1,2-DI-CHLORO-ETHANE	1,1-DI-CHLORO-ETHYLENE	CIS 1,2-DICHLORO-ETHYLENE	TRANS 1,2-DICHLORO-ETHYLENE	1,1,1-TRICHLORO-ETHANE	TRI-CHLORO-ETHYLENE	1,2-DI-CHLORO-PROPANE	VINYL CHLORIDE	CHLOROFORM	TOLUENE	OTHER VOC	
					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-22	11/06/88	18	AQUA		ND	ND	ND	164.0	75.8	ND	ND	ND	ND	ND	ND	ND	
	01/07/87	6	AQUA		ND	ND	ND	50.0	50.0	ND	ND	ND	ND	ND	ND	ND	
	01/07/87	7	AQUA		ND	ND	ND	73.6	73.6	ND	ND	ND	ND	ND	ND	ND	
	02/12/87	6	AQUA		ND	ND	ND	132.0	132.0	ND	ND	ND	ND	ND	ND	ND	
	02/12/87	7	AQUA		ND	ND	ND	109.0	109.0	ND	ND	ND	ND	ND	ND	ND	
	06/05/87	20	AQUA		ND	ND	ND	69.0	69.0	ND	ND	ND	ND	ND	ND	ND	
	09/03/87	12	AQUA		ND	ND	ND	41.0	41.0	ND	ND	ND	ND	ND	ND	ND	
	01/13/88	8	AQUA		ND	ND	ND	57.0	41.0	ND	ND	ND	ND	ND	ND	ND	
	02/09/88	23	AQUA		ND	ND	ND	41.5	41.5	ND	ND	ND	ND	ND	ND	ND	
	05/18/88	15	AQUA		ND	ND	ND	48.0	61.0	ND	ND	ND	ND	ND	ND	ND	
	05/18/88	16	AQUA		ND	ND	ND	77.5	27.7	ND	ND	ND	ND	ND	ND	ND	
	09/25/88	22	AQUA		ND	ND	ND	82.0	25.2	ND	ND	ND	ND	ND	ND	ND	
	02/22/89	6	AQUA		ND	ND	ND	21.0	45.0	ND	ND	ND	ND	ND	ND	ND	
	02/22/89	7	AQUA		ND	ND	ND	38.8	38.8	ND	ND	ND	ND	ND	ND	ND	
	06/09/89	19	AQUA	624	ND	ND	ND	35.7	37.5	ND	ND	ND	ND	ND	ND	ND	
	06/09/89	20	AQUA	624	ND	ND	ND	33.0	40.7	ND	ND	ND	ND	ND	ND	ND	
	09/09/89	26	AQUA	8240	ND	ND	ND	37.9	42.1	ND	ND	ND	ND	ND	ND	ND	
						ND	ND	38.4	45.8	ND	ND	ND	ND	ND	ND	ND	ND

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TABLE 3

MONITOR WELLS  
 GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
 ALLIED-SIGNAL CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT # ALCMPX-SBIN 024

T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services



SZ30CMW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS											
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L	OTHER VOC UG/L
UNITS					NPL	5	7	70	100	200	5	5	2	NPL	PROPOSED=2000	
MAXIMUM CONTAMINANT LEVEL (MCL):																
S-23	11/09/86	19*	AQUA		ND	ND	ND	ND	4.5	ND	ND	ND	ND	ND	ND	
	01/07/87	8	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/11/87	8	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	06/05/87	21	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	09/02/87	13	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	01/13/88	9	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/09/88	24	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	05/12/88	17	AQUA		ND	ND	6.4	ND	ND	ND	ND	ND	ND	ND	ND	
	09/24/88	17	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	12/08/88	7	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
02/22/89	5	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
06/09/89	17	AQUA	624		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
09/02/89	27	AQUA	6240		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		

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NPL = NO U.S. EPA PUBLISHED LEVEL

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\* = BIS (2-ETHYLHEXYL) PHTHALATE REPORTED AS 3.4 UG/L

TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical  
Services





S240CMW  
05-Oct-89

LABORATORY ANALYTICAL PARAMETERS

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	1,1-DI-CHLORO-ETHANE UG/L		1,2-DI-CHLORO-ETHYLENE UG/L		1,1-DI-CHLORO-ETHANE UG/L		TRANS 1,2-DICHLORO-ETHYLENE UG/L		1,1,1-TRICHLORO-ETHANE UG/L		TRI-CHLORO-ETHYLENE UG/L		1,2-DI-CHLORO-PROPANE UG/L		VINYL CHLORIDE UG/L		CHLOROFORM UG/L		TOLUENE UG/L		OTHER VOC UG/L		
					PROPOSED=	70	PROPOSED=	100	200	PROPOSED=	100	5	7	PROPOSED=	100	5	5	5	2	2	2000						
S-24	07/10/87	2	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	09/04/87	25	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	05/19/88	28	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	09/25/88	26	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	12/08/88	1	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	02/25/89	33	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	06/09/89	26	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	09/08/89	16	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	09/08/89	17	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		

UNITS  
MAXIMUM CONTAMINANT LEVEL (MCL):

NOTES:  
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TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 22 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



S250CMW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS												
					1,1-DI-CHLORO-ETHANE UG/L NPL	1,2-DI-CHLORO-ETHANE UG/L 5	1,1-DI-CHLORO-ETHYLENE UG/L 7	CIS 1,2-DICHLORO-ETHENE UG/L PROPOSED=70	TRANS 1,2-DICHLORO-ETHYLENE UG/L PROPOSED=100	1,1,1-TRICHLORO-ETHANE UG/L 200	TRI-CHLORO-ETHYLENE UG/L 5	1,2-DI-CHLORO-PROPANE UG/L PROPOSED=5	VINYL CHLORIDE UG/L 2	CHLORO-FORM UG/L NPL	TOLUENE UG/L PROPOSED=2000	OTHER VOC UG/L	
S-25	07/10/87	1	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	09/02/87	11	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	01/15/88	32	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/09/88	20	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	05/18/88	18	AQUA		ND	ND	ND	7.3	ND	ND	ND	ND	ND	ND	ND	ND	
	09/25/88	25	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	12/08/88	8	AQUA		25.2	38.0	ND	79.0	5.9	6.5	9.6	ND	ND	ND	ND	ND	
	02/22/89	8	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/25/89	32	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	06/09/89	21	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
09/09/89	28	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		

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TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 23 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



S260CMW  
05-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS										OTHER VOC UG/L							
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS-1,2-DICHLORO-ETHYLENE UG/L	1,2-DICHLORO-ETHYLENE UG/L	TRANS-1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L		TOLUENE UG/L	PROPOSED=2000					
S-26	07/10/87	7	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	09/03/87	16	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	07/15/88	31	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/09/88	18	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	05/19/88	29	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	09/23/88	21	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/23/89	18	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	06/10/89	29	AQUA	624		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/10/89	30	AQUA	624		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/08/89	19	AQUA	8240		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:  
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BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.  
NPL = NO U.S. EPA PUBLISHED LEVEL  
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 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024  
T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



S270CMM  
05-Oct-89

LABORATORY ANALYTICAL PARAMETERS

NOTES:

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	1,1-DI-CHLORO-ETHANE UG/L		1,2-DI-CHLORO-ETHANE UG/L		1,1-DI-CHLORO-ETHYLENE UG/L		CIS-1,2-DICHLORO-ETHENE UG/L		TRANS-1,2-DICHLORO-ETHYLENE UG/L		1,1,1-TRICHLORO-ETHANE UG/L		TRI-CHLORO-ETHYLENE UG/L		1,2-DI-CHLORO-PROPANE UG/L		VINYL-CHLORIDE UG/L		CHLORO-FORM UG/L		TOLUENE UG/L		OTHER VOC UG/L		
					5	7	70	100	200	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
S-27	07/10/87	8	AQUA		ND	ND	9.4	10.0	ND	90.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/04/87	26	AQUA		ND	ND	7.5	8.0	ND	100.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/15/88	33	AQUA		ND	ND	9.8	19.0	ND	96.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/10/88	32	AQUA		ND	ND	12.0	16.0	ND	81.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/19/88	27	AQUA		ND	ND	24.5	18.4	ND	74.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/25/88	27	AQUA		ND	ND	11.0	26.0	ND	85.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/08/88	2	AQUA		ND	ND	13.3	21.0	ND	80.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/23/89	12	AQUA		ND	ND	11.1	17.0	ND	97.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/09/89	25	AQUA	624	ND	ND	10.6	12.3	ND	86.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/08/89	18	AQUA	6240	ND	ND	14.8	18.5	ND	78.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MAXIMUM CONTAMINANT LEVEL (MCL):

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BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
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FBOCMW-1  
05-Oct-89

WELL FIELD NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS											
					1,1-DI- CHLORO- ETHANE UG/L	1,2-DI- CHLORO- ETHANE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	CIS 1,2-DICHLORO- ETHENE UG/L	TRANS 1,2-DICHLORO- ETHYLENE UG/L	1,1,1 TRICHLORO- ETHANE UG/L	TRI- CHLORO- ETHYLENE UG/L	1,2-DI- CHLORO- PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO- FORM UG/L	TOLUENE UG/L	OTHER VOC UG/L
UNITS					NPL	5	7	70	100	200	5	5	2	NPL	2000	
MAXIMUM CONTAMINANT LEVEL (MCL):																
BLANK	10/01/86	1,000	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	11/06/86	10	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	11/06/86	28	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/18/86	24	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/18/86	25	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/07/87	10	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/12/87	23	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/05/87	23	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/04/87	36	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/13/88	10	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/13/88	35	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/10/88	34	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/10/88	35	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/18/88	21	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/19/88	36	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/25/88	28	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/10/88	30	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/11/88	35	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/22/89	3	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/23/89	11	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	02/26/89	36	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/07/89	1	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/08/89	8	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/09/89	18	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/10/89	28	AQUA	624	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/08/89	12	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/09/89	21	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/10/89	32	AQUA	8240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 3

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
ALLIED-SIGNAL CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 02-1

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NPL = NO U.S. EPA PUBLISHED LEVEL  
VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.  
\*\* - OTHER VOC: DICHLOROBROMOMETHANE



WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE (UMHOS/CM)	PH S.U.	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE PHENOLS	
																				SMCL = 6.5-8.5	SMCL = 1000
1-D	01/09/87	13	AQUA	1300			<1	<8	<0.4	3	40	<4	240	<0.3	12	<4	<4	<1	44		
	02/12/87	1	AQUA	1250	7.62	11					18		52						14		
	06/05/87	13	AQUA	1200	7.71	14					<5		39						20	0.022	<0.010
	09/04/87	22	AQUA	1400	6.47	10					20		<30						160	0.009	0.048
	01/14/88	13	AQUA	2200	7.32	13					30		<3						10	<0.02	<0.010
	02/09/88	16	AQUA	1400	7.26	14					<30		<5						<10	<0.01	<0.010
	05/19/88	11	AQUA	1380	6.95	13					<30		<6						21	<0.01	<0.01
	09/23/88	11	AQUA	1523	7.15	13					<30		<5						<20	<0.01	0.01
	12/11/88	33	AQUA	1466	6.90	16					<30		<10						<20	<0.01	0.02
	02/24/89	23	AQUA	1043							<10		<2						<10	<0.01	<0.01
	09/08/89	11	AQUA																		

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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NOTES:  
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< = LESS THAN

METAL SAMPLES COLLECTED SINCE 80587 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED  
SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL



2DMCPMW  
12-Oct-89

WELL NO	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU SMCL = 6.5-8.5	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L SMCL = 1000	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L SMCL = 5000	CYANIDE		PHENOLS	
																				MG/L	NPL	MG/L	NPL
2-D	12/18/86	2	AQUA				<6	7	<1	<1	<10	16	20	<0.3	16	<8	<4	<8	<8				
	06/05/87	11	AQUA	1200	7.69	17					<5		<3						10	0.013		<0.010	
	09/03/87	19	AQUA	1150	7.81	15					<10		<3						12	<0.005		0.722	
	01/15/88	34	AQUA	1390	7.18	13					<20		<30						10	<0.02		0.015	
	02/09/88	11	AQUA	2550	7.39	13					<20		<3						10	<0.01		2.8	
	05/19/88	24	AQUA	1470	7.39	15					<30		<5						<20	<0.01		<0.01	
	09/24/88	20	AQUA	1005	7.10	16					<30		<6						<20	<0.01		0.02	
	12/10/88	27	AQUA	2060		14.5					<30		<5						<20	<0.01		<0.01	
	12/10/88	28	AQUA	2060		14.5					<30		<5						<20	<0.01		<0.01	
	02/24/89	19	AQUA	1191	7.25	13					<30		<5						<20	<0.01		0.02	
	09/09/89	31	AQUA	1802	6.75	16.5					<10		<2						<10	<0.01		<0.01	

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TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE		PH	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L
				UMHOS/CM	CMHOS/CM																	
5-D	12/18/88	4	AQUA					<6	<4	<1	<1	<10	8	<6	<0.3	<10	<16	4	<12	52		
	12/18/88	5	AQUA					<6	<1	<1	2	<10	8	<6	<0.3	<10	<16	<4	<9	40		
	08/15/87	15	AQUA	1000		7.90	14					<5										
	01/14/88	12	AQUA	950		7.81	13					<10								16	0.013	<0.010
	02/09/88	21	AQUA	1240		8.71	9					<20								10	<0.02	<0.010
	05/18/88	14	AQUA	2050		6.95	13					20								<10	<0.01	0.039
	09/23/88	15	AQUA	1000		7.18	14					<30								<20	<0.01	0.02
	12/08/88	9	AQUA	1215		6.80	13					<30								<20	<0.01	0.04
	02/25/89	31	AQUA	1113		7.45	13					<30								<20	<0.01	<0.01
	08/10/89	38	AQUA	877		7.00	13.5					<10								<10	<0.01	<0.01

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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7DMCPAW 12-Oct-89		SPECIFIC CONDUCT- TANCE UMHOS/CM	pH SU SMCL = 6.5-8.5	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L SMCL = 1000	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L SMCL = 5000	CYANIDE MG/L	PHENOLS MG/L	
UNITS	MAXIMUM CONTAMINANT LEVEL (MCL):																			
WELL NO	SAMPLE DATE	SAMPLE #	LAB																	
7-D	09/01/87	29	AQUA	1100	7.17	16														
	01/15/88	30	AQUA	1380	7.07	14			<10		<3									<0.01
	02/09/88	15	AQUA	1975	7.33	13			<20		<30									<0.02
	05/19/88	22	AQUA	1530	7.24	16			40		<3									0.031
	09/24/88	18	AQUA	995	7.05	17			<30		<5									<0.01
	12/10/88	31	AQUA	2390	14.5				<30		<8									<0.01
	02/25/89	34	AQUA	1655	7.25	14			30		<5									0.01
	09/10/89	33	AQUA	1035	6.75	18			<30		<5									<0.01
									<10		<2									<0.01

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METAL SAMPLES COLLECTED SINCE 6/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

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TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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8DMCPMW 12-Oq-88		SPECIFIC CONDUCTANCE UMHOS/CM		PH SU SMCL = 6.5-8.5		TEMP C		ANTIMONY UG/L		ARSENIC UG/L		BERYLLIUM UG/L		CADMIUM UG/L		CHROMIUM UG/L		COPPER UG/L SMCL = 1000		LEAD UG/L		MERCURY UG/L		NICKEL UG/L		SELENIUM UG/L		SILVER UG/L		THALLIUM UG/L		ZINC UG/L SMCL = 5000		CYANIDE MG/L		PHENOLS MG/L				
WELL NO.	SAMPLE DATE	SAMPLE #	LAB																																					
P-D	09/04/87	30	AQUA	1300	7.29	16																																		
	01/15/88	28	AQUA	2200	6.84	11																																		
	01/15/88	29	AQUA	2200	6.84	11																																		
	02/09/88	13	AQUA	2700	7.40	13																																		
	02/09/88	14	AQUA	2700	7.40	13																																		
	05/19/88	23	AQUA	2100	7.32	15																																		
	09/24/88	19	AQUA	1480	6.90	17.5																																		
	12/10/88	32	AQUA	2180	7.10	14																																		
	02/25/89	35	AQUA	1822	7.10	14																																		
	03/10/89	35	AQUA	1135	6.95	17.5																																		

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METAL SAMPLES COLLECTED SINCE 8/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
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TABLE 6

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METALS, CYANIDE  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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Environmental and Geotechnical Services



933MCPMW  
12-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE PHENOLS	
																				SMCL = 6.5-8.5	SMCL = 1000
9-33	01/08/87	11	AQUA				<50	11	6	2	170	160	69	0.6	220	<80	<4	<1	840		
	02/12/87	19A	AQUA							844		125								210	
	02/12/87	19B	AQUA							<10*		<3*								12*	
	06/05/87	3	AQUA	1250	7.88	14				<5		4							10	0.014	<0.010
	09/03/87	3	AQUA	1150	7.22	15				<10		<3							<4	<0.005	<0.100
	01/13/88	3	AQUA	1030	7.15	13				<20		<30							<10	<0.02	0.03
	02/10/88	31	AQUA	2000	7.40	12				<20		<3							<10	<0.01	<0.010
	05/18/88	3	AQUA	1400	7.34	14				30		<5							<20	<0.01	<0.01
	09/22/88	3	AQUA	980	7.20	17				<30		<6							<20	<0.01	0.04
	12/09/88	15	AQUA	1740		15				<30		<5							<20	<0.01	<0.01
	02/22/89	4	AQUA	939	7.65	14				<30		<5							<20	<0.01	<0.01
	09/07/89	4	AQUA	604	7.05	18				<10		<2							<10	<0.01	0.02

NOTES:

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

< = LESS THAN

\*METAL FILTERED THRU .45 MICRON FILTER

METAL SAMPLES COLLECTED SINCE 6/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX 581N 024

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WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE (UMHOS/CM)	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE PHENOLS		
																				SMCL = 6.5-8.5	SMCL = 1000	SMCL = 5000
86-10	08/02/86	8*	AQUA	1620	6.62	20.4				<5	30	68										
	08/02/86	9	AQUA																	140	<0.01	
	10/10/86	116	AQUA	1900																		
	10/10/86	316	AQUA				<6	<4	<1	4	<20	40	21	<0.3	20	<8	<10	<15	30	0.09		
	02/24/89	22	AQUA	1413	7.25	14					<30	<5								20	<0.01	0.03
	08/07/89	3	AQUA	1164	8.90	18					<10	<4								20	<0.01	<0.01

NOTES:

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< = LESS THAN

METAL SAMPLES COLLECTED SINCE 8/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

\* = TIN <8

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SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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8615MCPM  
12-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHO/CM	pH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	PHENOLS		
																				CYANIDE MG/L	MG/L	
86-15	08/02/86	5*	AQUA	1320	6.9	21.7				<5	40	54								190		
	08/02/86	6	AQUA	1310																	<0.01	
	10/10/86	111	AQUA																		0.05	
	02/24/89	24	AQUA	1161	7.20	14	<6	<4	<1	3	<20	30	20	0.5	20	<8	160	<15		70		
	09/07/89	2	AQUA	1934	6.55	19				<10	<30	<10	<4	<10						20	<0.01	0.02
																				20	<0.01	<0.01

NOTES:  
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
< = LESS THAN

METAL SAMPLES COLLECTED SINCE 8/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

\* = TIN <8

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

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TABLE 6

MONITOR WELLS  
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ALLIED CORPORATION  
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WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS MG/L	
																				SMCL = 6.5-8.5	SMCL = 1000		SMCL = 5000
D-4	10/01/86	109	AQUA	870																			
	10/01/86	309	AQUA	600			<8	<4	<1	<1	<10	4	30	<0.3	<10	10	<4			9280		<0.01	
	02/12/87	13	AQUA	750		11					<5	26	53						5280				
	09/03/87	8	AQUA	725	8.18	16					<5	26	53						20	0.098			
	01/13/88	4	AQUA	840	8.15	15					<10	<3	<30						44	<0.005			
	01/13/88	5	AQUA	830	7.06	12					<20	<30	<30						10	<0.02			
	02/02/88	7	AQUA	1390	7.70	12					<20	30	<30						<10	<0.02			
	02/09/88	8	AQUA	1380	7.68	12					<20	30	<30						10	<0.01			
	05/18/88	10	AQUA	850	7.77	14					<30	<5	<5						10	<0.01			
	09/23/88	10	AQUA	850	7.45	15					<30	<5	<5						<20	<0.01			
	12/09/88	3	AQUA	1320	8.75	14					<30	<5	<5						<20	<0.01			
	02/23/89	14	AQUA	945	7.25	13					<30	<5	<5						<20	<0.01			
	09/09/89	14	AQUA	648	7.15	15.5					<10	<2	<2						<10	<0.01			

NOTES:

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< = LESS THAN

METAL SAMPLES COLLECTED SINCE 805/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

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GROUNDWATER QUALITY ANALYSIS  
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AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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D7MCPMW  
12-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	pH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS	
																				SMCL = 6.5-8.5	SMCL = 1000	SMCL = 5000	MG/L
D-7	10/01/86	108	AQUA	1110																			
	10/01/86	208	AQUA				<8	4	<1	<1	20	10	11	<0.3	<20	<4	<10				<0.01		
	11/06/87	26	AQUA				<3	4	<1	<1	<10	4	3	<0.3	<0.3	<8	<4						
	06/05/87	9	AQUA	800	8.31	16					<5	<5	9										
	06/05/87	10	AQUA	800	8.31	16					<5	<3											
	09/03/87	17	AQUA	850	7.97	15					<10	<3	<3										
	09/03/87	18	AQUA	850	7.97	15					<10	<3	<3										
	01/14/88	14	AQUA	860	6.89	13					<20	<30	<30										
	02/08/88	10	AQUA	1080	7.94	13					<20	<30	<30										
	05/18/88	20	AQUA	900	7.76	14					20	<3	<3										
	09/25/88	29	AQUA	1245	7.10	16					<30	<5	<5										
	12/09/88	16	AQUA	1332		13					<30	<30	<6										
	12/09/88	17	AQUA	1332		13					<30	<30	<6										
	02/24/89	21	AQUA	705	7.70	13					<30	<30	<5										
	09/09/89	30	AQUA	474	7.10	16					<10	<10	<2										

NOTES:  
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< = LESS THAN

METAL SAMPLES COLLECTED SINCE 6/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED  
SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL  
NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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SIMCPWV 12-Oct-89		SPECIFIC CONDUCTANCE UMHOS/CM	pH SU SMCL = 6.5-8.5	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L SMCL = 1000	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L SMCL = 5000	CYANIDE MG/L	PHENOLS MG/L	
WELL NO.	SAMPLE DATE																			SAMPLE #
S-1	11/05/86	1	AQUA																	
	12/17/86	18	AQUA																	
	09/05/87	1	AQUA	625	7.15	14														
	09/03/87	1	AQUA	625	7.01	15														
	01/12/88	1	AQUA	690	6.80	10														
	02/09/88	1	AQUA	1840	7.22	10														
	05/18/88	1	AQUA	1000	7.17	13														
	09/22/88	1	AQUA	620	7.10	13														
	12/09/88	12	AQUA	1140		12.5														
	02/22/89	1	AQUA	660	7.45	12														
	02/22/89	2	AQUA	647	7.50	13														
	09/05/89	20	AQUA	423	7.00	13														

NOTES:

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< = LESS THAN

METAL SAMPLES COLLECTED SINCE 605/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

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NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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S4AMCPMW  
12-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIAL CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L	
																						SMCL = 6.5-8.5
S-4	09/28/86	107	AQUA	1930	6.88		<20	44	<2	<4	24	200	68	<0.3	44	<40	4				<0.010	
S-4A	06/05/87	22	AQUA	1600	7.48	16					<5	<3										
	09/04/87	27	AQUA	1700	6.94	15					<10	3										<0.010
	01/14/88	25	AQUA	2000	6.49	13					<20	<30										0.035
	02/08/88	6	AQUA	2500	7.20	13					<20	<3										0.08
	05/18/88	7	AQUA	1700	7.27	14					44	<5										7.6
	05/18/88	8	AQUA	1655	6.95	16.5					<30	<5										<0.01
	09/22/88	8	AQUA								<30	<6										<0.01
	12/10/88	26	AQUA	2960		14.5					<30	<5										0.04
	02/27/89	43	AQUA	1593	6.85	14					<30	<5										0.01
	09/09/89	25	AQUA	884	6.90	16					<10	<4										0.03
											<10											<0.01

NOTES:  
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< = LESS THAN  
METAL SAMPLES COLLECTED SINCE 6/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
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TABLE 6

MONITOR WELLS  
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S9MCP1MW  
13-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L	
																						SMCL = 6.5-8.5
S-9	10/01/88	110	AQUA	1775																		
	11/01/88	130	AQUA				<6	<4	<1	<1	<20	130	33	<0.3	<20	<4	<10	<3	930	<0.010		
	11/01/88	4	AQUA				<3	<4	<1	<1	20								500	<0.010		
	12/18/88	20	AQUA				<3	<4	2	<10	<3							<24	120	<0.010		
	12/18/88	30	CCL				<3	<4	<1	<10	<3							<18	8	<0.010		
	09/05/87	7	AQUA	1800	7.68	16					<5		<30						10	0.014	0.049	
	09/03/87	9	AQUA	1725	7.55	15					<10		<30						12	<0.005	<0.010	
	01/13/88	6	AQUA	1750	6.75	12					<20		<30						10	<0.02	<0.010	
	02/08/88	9	AQUA	3000	7.35	12					<20		<3						20	<0.01	0.202	
	05/18/88	9	AQUA	1600	7.41	15					<30		<5						28	<0.01	<0.01	
	09/23/88	9	AQUA	1350	7.15	18.5					<30		<6						<20	<0.01	0.04	
	12/08/88	4	AQUA	853	8.35	14					<30		<5						<20	<0.01	0.07	
	02/23/89	13	AQUA	402	7.50	12					<30		<5						<20	<0.01	0.02	
	09/09/89	15	AQUA	424	7.35	17					<10		<2						<10	<0.01	<0.01	

NOTES:

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< = LESS THAN

METAL SAMPLES COLLECTED SINCE 8/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

CCL = COMPUCHEM LABORATORIES

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

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MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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S14MCPMW 13-Oct-89		SPECIFIC CONDUCTANCE UMHOS/CM	PH SU SMCL = 6.5-8.5	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L SMCL = 1000	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L SMCL = 5000	CYANIDE MG/L	PHENOLS MG/L		
WELL NO.	SAMPLE DATE																			SAMPLE #	LAB
5-14	11/06/86	21	AQUA																		
	08/05/87	5	AQUA	1400	7.39	15															
	09/03/87	7	AQUA	1400	7.28	14															
	01/14/88	23	AQUA	2300	6.77	11															
	02/08/88	5	AQUA	3000	7.41	12															
	05/18/88	5	AQUA	2200	7.36	14															
	09/23/88	5	AQUA	1320	6.95	18.5															
	12/10/88	23	AQUA	1530		14															
	08/09/89	23	AQUA	1071	6.80	18.5															
	09/02/89	24	AQUA	1074	6.80	19															

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METAL SAMPLES COLLECTED SINCE 6/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
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S15MCPMW  
13-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOSCM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS	
																				SMCL = 6.5-8.5	SMCL = 1000	SMCL = 5000	MG/L
8-15	11/08/88	27	AQUA																				
	12/18/88	23	AQUA																				
	06/05/87	6	AQUA	1700	7.27	16																	
	09/03/87	5	AQUA	1625	7.18	15																	
	01/14/88	24	AQUA	1625	7.18	15																	
	02/08/88	4	AQUA	2300	6.42	12																	
	05/18/88	6	AQUA	2300	7.30	12																	
	09/23/88	6	AQUA	1800	6.85	18.5																	
	12/10/88	24	AQUA	3060		14																	
	02/23/89	15	AQUA	2140	6.95	13																	
	08/09/89	22	AQUA	1888	6.65	17.5																	

NOTES:

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< = LESS THAN

METAL SAMPLES COLLECTED SINCE 6/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

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MONITOR WELLS  
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WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS		
																				SMCL = 6.5-8.5	NPL	50	50	NPL
5-10	11/06/86	11	AQUA																					
	12/18/86	19	AQUA				<6	<4	<1	<1	<10	310	65	<0.3	12	<16	<4	<3	<3	220	<0.010	0.060		
	12/18/86	29	CCL				<6	<4	<1	1	<10		<10	<0.3	12	<8	4	<3	52	<0.010	<0.010			
	02/12/87	11	AQUA	1450		15	<3	<4	<1	1	<10		<9	0.4	<10	<8	4	<3	4	<0.010	<0.010			
	08/05/87	12	AQUA	1150		19					<5		13						40					
	08/04/87	28	AQUA	1100	7.57	15					<10		<4						20	0.07	<0.010			
	01/15/88	27	AQUA	1700	7.44	11					<20		<30						40	0.012	0.017			
	02/09/88	12	AQUA	2100	6.92	12					<20		<3						10	<0.02	0.01			
	05/19/88	25	AQUA	1450	7.62	12					<30		<5						20	<0.01	0.02			
	08/23/88	14	AQUA	1110	7.49	14					<30		<6						<20	<0.01	0.07			
	12/10/88	29	AQUA	2320	7.20	14					<30		<5						<20	<0.01	<0.01			
	02/24/89	20	AQUA	1311	7.40	12					<30		<5						<20	<0.01	0.04			
	08/10/89	34	AQUA	813	6.95	17					<10		<2						10	<0.01	<0.01			

NOTES:  
 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

CCL = COMPUTHER LABORATORY  
 SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
 GROUNDWATER QUALITY ANALYSIS  
 METALS, CYANIDE  
 AND PHENOLS

GROUNDWATER INVESTIGATIONS  
 ALLIED CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services



ST7MCP1W  
13-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	pH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE PHENOLS		
																				SMCL = 6.5-8.5	SMCL = 1000	SMCL = 5000
8-17	11/08/88	16	AQUA																			
	06/05/87	15	AQUA	1350	7.55	15	<3	<4	<1	<1	<10	12	23	<0.3	20	<24	<4	<3	150	<0.010	0.025	
	09/03/87	20	AQUA	1275	7.62	15					<5		<3						<10	0.024	<0.010	
	01/14/88	22	AQUA	1475	6.57	13					<20		<3						4	<0.005	0.426	
	02/10/88	33	AQUA	2100	7.25	12					30		<3						10	<0.02	0.01	
	05/19/88	26	AQUA	1400	7.17	13					<30		<5						<10	0.01	<0.010	
	09/23/88	12	AQUA	1120	7.10	17					<30		<8						<20	<0.01	<0.01	
	12/09/88	11	AQUA	2350	6.95	15					<30		<5						<20	<0.01	<0.01	
	02/23/89	17	AQUA	1000	6.95	12					<30		<5						<20	<0.01	0.02	
	09/08/89	13	AQUA	839	8.00	18.5					<10		<2						<10	<0.01	<0.01	

NOTES:

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

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

T A GLEASON ASSOCIATES

Environmental and Geotechnical  
Services



S20MCPMW  
13-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE PHENOLS	
																				SMCL = 6.5-8.5	SMCL = 1000
G-20	11/07/86	30	AQUA				<3	<4	<1	<1	16	16	25	<0.3	<10	<8	<4	<6	64	0.02	<0.010
	08/05/87	18	AQUA	1200	7.41	13					<5		<3						10	0.026	<0.010
	09/03/87	10	AQUA	1250	7.33	14					<10		<3						12	<0.005	0.011
	01/13/88	7	AQUA	1830	6.78	12					<20		<30						10	<0.02	0.07
	02/09/88	19	AQUA	3100	7.10	12					<20		<3						10	<0.01	1.48
	05/18/88	19	AQUA	1750	7.17	14					<30		<5						33	<0.01	<0.01
	09/25/88	23	AQUA	1890	6.50	14					<30		<6						<20	<0.01	0.16
	09/25/88	24	AQUA								<30		<6						<20	<0.01	0.07
	12/08/88	5	AQUA	1593	8.75	12.5					<30		<5						<20	<0.01	0.02
	02/22/89	9	AQUA	1539	7.15	11					<30		<10						<20	<0.01	<0.01
	09/09/89	28	AQUA	322	6.75	15					<10		<4						<10	<0.01	<0.01

NOTES:  
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< = LESS THAN  
METAL SAMPLES COLLECTED SINCE 8/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED  
SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL  
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TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
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S21MCPMW  
13-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE		PH	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS	
				UMHOS/CM	UMHOS/CM																MG/L	MG/L	MG/L	MG/L
MAXIMUM CONTAMINANT LEVEL (MCL):																								
				6.5-8.5																				
6-21	11/06/88	17	AQUA			7.80	13	<6	<4	<1	20	20	20	33	<0.3	20	<100	<4	<3	160	<0.01	<0.01	<0.010	
	06/05/87	17	AQUA			7.80	13				<5	<3		<3						<10	0.023	0.080		
	09/03/87	14	AQUA			7.72	14				<10	<3		<3						10	0.031	0.114		
	01/14/88	11	AQUA			6.53	10				<20	<30		<30						4	<0.005	<0.010		
	02/09/88	22	AQUA			6.95	12				20	<3		<3						<10	<0.05	0.06		
	05/18/88	13	AQUA			7.07	13				<30	<30		<5						<10	<0.01	0.055		
	09/23/88	13	AQUA			6.90	13				<30	<30		<6						<20	<0.01	<0.01		
	12/08/88	10	AQUA			12.5					<30	<30		<5						<20	<0.01	<0.01		
	02/23/89	10	AQUA			6.85	11				<30	<30		<10						<20	<0.01	<0.01		
	09/10/89	41	AQUA			6.65	13.5				<10	<10		<4						10	<0.01	<0.01		

NOTES:  
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< = LESS THAN  
METAL SAMPLES COLLECTED SINCE 6/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED  
SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL  
NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

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S22MCPMW  
13-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	pH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS	
																				SMCL = 6.5-8.5	SMCL = 1000	SMCL = 5000	MG/L
E-22	11/06/86	18	AQUA				<3	<4	<1	<1	12	<4	12	<0.3	<10	<40	4	<3	10	<0.01	<0.01	<0.010	
	06/05/87	20	AQUA	1000	7.64	13					<5		<3						10	0.063		0.018	
	09/03/87	12	AQUA	1050	7.51	14					<10		<3						8	<0.005		0.133	
	01/14/88	8	AQUA	1180	6.79	9					<20		<30						10	<0.02		0.03	
	02/09/88	23	AQUA	2000	6.49	12					<20		<3						10	<0.01		0.024	
	05/18/88	15	AQUA	1300	6.68	11					<30		<5						<20	<0.01		0.03	
	09/25/88	22	AQUA	1460	6.75	13					<30		<5						<20	<0.01		<0.01	
	12/08/88	6	AQUA	1888	8.40	12.5					<30		<6						<20	<0.01		0.11	
	02/22/89	6	AQUA	1224	7.15	13					<30		<5						<20	<0.01		<0.01	
	02/22/89	7	AQUA	1204	7.20	13					<30		<10						<20	<0.01		<0.01	
	09/09/88	25	AQUA	762	6.95	13					<10		<4						<10	<0.01		<0.01	

NOTES:  
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METAL SAMPLES COLLECTED SINCE 8/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED  
SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL  
NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE AND PHENOLS  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024  
T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



S23MCPMW  
13-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU SMCL = 6.5-8.5	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L SMCL = 1000	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L SMCL = 5000	CYANIDE MG/L		PHENOLS MG/L	
																				NPL	NPL	NPL	NPL
S-23	11/08/86	19	AQUA				<3	<4	<1	1	12	8	34	<0.3	<10	<18	4	<3					
	08/05/87	21	AQUA	1000	7.59	13					<5		<3							120	<0.01	<0.010	
	09/03/87	13	AQUA	1000	7.27	14					<10		<3							10	0.032	0.242	
	01/13/88	9	AQUA	1175	6.89	11					<20		<30							8	0.009	0.64	
	02/09/88	24	AQUA	2050	7.31	12					<20		<3							10	<0.02	<0.010	
	05/18/88	17	AQUA	1060	7.22	12					<30		<5							<10	0.01	0.108	
	09/24/88	17	AQUA	620	6.95	14					<30		<8							<20	<0.01	<0.01	
	12/08/88	7	AQUA	1832							<30		<5							<20	<0.01	0.05	
	02/22/89	5	AQUA	927	7.35	13					<30		<5							<20	<0.01	0.02	
	03/09/89	27	AQUA	518	6.75	14					<10		<2							20	<0.01	<0.01	
																				<10	<0.01	0.02	

NOTES:

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< = LESS THAN

METAL SAMPLES COLLECTED SINCE 8/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX S81N 024

T A GLEASON ASSOCIATES  
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Services



S24MCPMW 13-Oct-89		SPECIFIC CONDUCTANCE UMHOS/CM		pH SU SMCL = 6.5-8.5		TEMP C		ANTIMONY UG/L NPL		ARSENIC UG/L 50		BERYLLIUM UG/L NPL		CADMIUM UG/L 10		CHROMIUM UG/L 50		COPPER UG/L SMCL = 1000		LEAD UG/L 50		MERCURY UG/L 2		NICKEL UG/L NPL		SILVER UG/L 50		THALLIUM UG/L NPL		ZINC UG/L SMCL = 5000		CYANIDE MG/L NPL		PHENOLS MG/L NPL					
WELL NO.	SAMPLE DATE	SAMPLE #	LAB																																				
E-24	09/04/87	25	AQUA	1350	6.96	14																																	
	05/19/88	28	AQUA	1800	7.32	11																																	
	09/25/88	28	AQUA	1920	6.60	13																																	
	12/08/88	1	AQUA	1464	7.4	13.5																																	
	02/22/89	33	AQUA	1102	7.75	12																																	
	09/04/89	16	AQUA	862	6.70	14																																	
	09/04/89	17	AQUA	889	6.85	14																																	

NOTES:

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< = LESS THAN

METAL SAMPLES COLLECTED SINCE 8/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATION  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical  
Services



S25MCPMAW  
13-Oct-89

UNITS  
MAXIMUM CONTAMINANT LEVEL (MCL):

WELL NO.	SAMPLE DATE	SAMPLE #	LAB
6-25	09/03/87	11	AQUA
	01/15/88	32	AQUA
	02/09/88	20	AQUA
	05/18/88	18	AQUA
	09/25/88	25	AQUA
	02/22/89	8	AQUA
	02/25/89	32	AQUA
	09/09/89	28	AQUA

SPECIFIC CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L
	SMCL = 6.5-8.5		NPL	50	NPL	10	50	SMCL = 1000	50	2	NPL	10	50	NPL	SMCL = 5000	NPL	NPL
		7.17					<10		<3						12	<0.005	<0.010
		6.87					<20		<30						10	<0.02	0.06
		7.15					<20		<3						10	<0.01	0.122
		7.08					<30		<5						330	<0.01	<0.01
		6.70					<30		<6						<20	<0.01	<0.01
		7.10					<30		<10						<20	<0.01	<0.01
		6.95					<30		<5						<20	<0.01	0.02
		6.75					<10		<4						10	<0.01	0.01

NOTES:  
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METAL SAMPLES COLLECTED SINCE 8/9/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED  
SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL  
NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE AND PHENOLS  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
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S28MCPMW  
13-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS		
																				SMCL = 6.5-8.5	SMCL = 1000	SMCL = 20	SMCL = 5000	MG/L
6-26	09/03/87	16	AQUA	1100	7.22	16					<10		<3								<0.005		<0.010	
	01/15/88	31	AQUA	2200	7.03	14					<20		<30								10	<0.02		0.13
	02/09/88	18	AQUA	3100	6.80	12					<20		<3								20	<0.01		0.106
	05/19/88	29	AQUA	1900	6.82	14					<30		<5								2600	<0.01		0.02
	09/24/88	21	AQUA	1025	6.90	17					<30		<6								<20	<0.01		0.07
	12/10/88	25	AQUA	1980		14					<30		<5								<20	<0.01		0.05
02/23/89	18	AQUA	1370	6.90	13					<30		<5								20	<0.01		0.04	
09/08/89	19	AQUA	774	6.98	17					<16		<2								20	<0.01		0.03	

NOTES:

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

< = LESS THAN

METAL SAMPLES COLLECTED SINCE 6/5/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical  
Services



S27MCPMW  
13-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	pH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS		
																				MG/L	NPL	MG/L	NPL	
E-27	09/04/87	26	AQUA	1350	6.97	14																		
	01/15/88	33	AQUA	1530	6.88	11																		
	02/10/88	32	AQUA	2600	7.20	12																		
	05/19/88	27	AQUA	1450	7.26	12																		
	09/25/88	27	AQUA	1855	6.70	13																		
	12/08/88	2	AQUA	2386	7.5	13.5																		
	02/23/89	12	AQUA	1449	7.15	11																		
	09/08/89	18	AQUA	1332	6.65	13.5																		

NOTES:  
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
< = LESS THAN

METAL SAMPLES COLLECTED SINCE 6/5/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL  
NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6

MONITOR WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE AND PHENOLS  
PAGE 25 OF 26

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



FBMCPMW 13-Oct-89			SPECIFIC CONDUCTANCE UMHOS/CM		PH SU SMCL = 6.5-8.5		TEMP C	ANTIMONY UG/L NPL	ARSENIC UG/L 50	BERYLLIUM UG/L NPL	CADMIUM UG/L 10	CHROMIUM UG/L 50	COPPER UG/L SMCL = 1000	LEAD UG/L 50	MERCURY UG/L 2	NICKEL UG/L NPL	SELENIUM UG/L 10	SILVER UG/L 50	THALLIUM UG/L NPL	ZINC UG/L SMCL = 5000	CYANIDE MG/L NPL	PHENOLS MG/L NPL
WELL NO.	SAMPLE DATE	SAMPLE #	LAB	CONDUCTANCE	PH	TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	
FIELD BLANK	11/08/86	28	AQUA					<3	<4	<1	<10	88	<3	<0.3	12	<4	<4	<4	4	<0.01	0.023	
	12/18/86	25	AQUA				<3	<4	<1	<1	<10	4	4	<0.3	<10	<4	<4	<4	6	0.035	<0.010	
	12/18/86	24	AQUA				<3	<4	<1	5	<10	4	<3	0.3	4	<4	<4	<4	4	<0.010		
	01/08/87	12	AQUA				<1	<4	<0.4	<1	<10	<4	<3	<0.3	<10	4	<4	<1	<4			
	02/12/87	23	AQUA								<10	<10	<3									
	02/12/87		AQUA								<10	<10	<3									
	06/05/87	23	AQUA								<5	<5	<3							<10	0.029	<0.010
	09/04/87	36	AQUA								<10	<10	<3							<10	<0.005	<0.010
	01/13/88	10	AQUA								20	<20	<30							10	<0.02	<0.010
	01/15/88	35	AQUA								<20	<20	<30							<10	<0.02	<0.010
	02/10/88	34	AQUA								<20	<20	<30							<10	<0.01	<0.010
	02/10/88	35	AQUA								<20	<20	<30							<10	<0.01	<0.010
	05/19/88	21	AQUA	40	6.59	22					<30	<30	<5							<20	<0.01	0.09
	05/19/88	36	AQUA								<30	<30	<5							<20	<0.01	0.01
	09/25/88	28	AQUA	32	7.00						<30	<30	<6							<20	<0.01	0.01
	12/10/88	30	AQUA	58	7.00						<30	<30	<5							<20	<0.01	<0.01
	12/11/88	35	AQUA	65		9					<30	<30	<5							<20	<0.01	<0.01
	02/22/89	3	AQUA	38	7.05	10					<30	<30	<5							<20	<0.01	<0.01
	02/23/89	11	AQUA	29	7.25	19					<30	<30	<5							<20	<0.01	<0.01
	02/28/89	36	AQUA	57	7.15	15					<30	<30	<5							<20	<0.01	<0.01
	09/07/89	1	AQUA	3	5.45	25					<10	<10	<2							<10	<0.01	<0.01
	09/08/89	12	AQUA	3	5.50	22					<10	<10	<2							<10	<0.01	<0.01
	09/09/89	21	AQUA	6	6.70	23					<10	<10	<2							<10	<0.01	0.20
	09/10/89	32	AQUA	3	6.75	20.5					<10	<10	<2							<10	<0.01	<0.01
PAGE 26 OF 26																						
MONITOR WELLS GROUNDWATER QUALITY ANALYSIS METALS, CYANIDE AND PHENOLS																						
GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT ALCMPX SBIN 024																						
T A GLEASON ASSOCIATES Environmental and Geotechnical Services																						

NOTES:  
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
< = LESS THAN  
METAL SAMPLES COLLECTED SINCE 8/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED  
SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL  
NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 6



FWESJN 12-Oct-89		SPECIFIC CONDUCTANCE UMHOS/CM	pH SU SMCL = 6.5-8.5	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L SMCL = 1000	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L SMCL = 5000	CYANIDE MG/L	PHENOLS MG/L
UNITS	MAXIMUM CONTAMINANT LEVEL (MCL)																		
WELL NO.	SAMPLE DATE	SAMPLE #	LAB																
E-3	03/25/87	7	AQUA						<20		<3								
	01/14/88	19	AQUA					<20	<30										
	02/10/88	29	AQUA	7.10	16			<20	<30										
	05/19/88	34	AQUA	7.16	16			<30	<30										
	09/25/88	32	AQUA	6.95	18			<30	<30										
	12/09/88	21	AQUA		14			30											
	02/24/89	28	AQUA	7.30	13			<30											
	09/07/89	8	AQUA	6.75	18			<10											

NOTES:  
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
< = LESS THAN

METAL SAMPLES COLLECTED SINCE 1/14/88 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL  
NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 8

NAPHTHA RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services





WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE (UMHOS/CM)	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L	
																						SMCL = 6.5-8.5
RWB-6	03/25/87	10	AQUA																			
	03/25/87	11	AQUA																			
	01/14/88	16	AQUA																			
	02/10/88	26	AQUA	2400	7.50	13																
	05/19/88	31	AQUA	1380	7.55	14																
	09/25/88	31	AQUA	2500	6.80	16.5																
	12/09/88	19	AQUA	2620																		
	02/24/89	26	AQUA	1456	7.35	14																
	06/07/89	6	AQUA	1065	6.80	18																

NOTES:

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

< = LESS THAN

METAL SAMPLES COLLECTED SINCE 1/14/88 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 8

NAPHTHA RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALMPX SBIN 024

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WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS		
																				SMCL = 8.5-8.5	SMCL = 1000	SMCL = 5000	MGL	NPL
RWB-16	03/25/87	8	AQUA																					
	01/14/88	20	AQUA																					
	02/10/88	30	AQUA	2500	7.35	15																		
	05/19/88	35	AQUA	1400	7.29	15																		
	09/25/88	33	AQUA	2800	8.70	19																		
	12/09/88	22	AQUA	2880		14																		
	02/24/89	29	AQUA	1430	7.25	14																		
	09/07/89	9	AQUA	975	8.95	21																		
	09/07/89	10	AQUA	932	7.00	21																		

NOTES:

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

< = LESS THAN

METAL SAMPLES COLLECTED SINCE 1/14/88 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 8

NAPHA RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX, SBIN 024

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RW21IN 19-Oct-89	SPECIFIC CONDUCT- TANCE UMHOS/CM	PH SU SMCL = 6.5-8.5	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L SMCL = 1000	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L SMCL = 5000	CYANIDE MG/L	PHENOLS MG/L	
																			WELL NO.
RWB-21								<20		<3							10	0.05	0.015
								<20		<30							10	<0.02	0.01
	1825	7.40	12					<20		<3							<10	<0.01	<0.010
	1300	7.43	13					<30		<5							22	<0.01	<0.01
	8300		15					<30		<5							<20	<0.01	<0.01
	1079	7.30	14					<30		<5							<20	<0.01	0.02
	741	6.85	16					<10		<2							<10	<0.01	<0.01

NOTES:

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

< = LESS THAN

METAL SAMPLES COLLECTED SINCE 1/14/88 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED

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TABLE 8

NAPHTHA RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCMPX SBIN 024

T A GLEASON ASSOCIATES

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Services









RWE3OR  
05-Oct-89

SAMPLE SOURCE	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS												
					BENZENE UG/L	1,1-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	ETHYL BENZENE UG/L	TOLUENE UG/L	DICHLORO-ETHYLENE UG/L	TRANS-1,2-DICHLORO-ETHYLENE UG/L	TOTAL XYLENES UG/L	1,2-DI-CHLORO-ETHANE UG/L	CHLORO-ETHANE UG/L	TRI-CHLORO-ETHENE UG/L	VINYL CHLORIDE UG/L	OTHER VOC
UNITS																	
MAXIMUM CONTAMINANT LEVEL (MCL):																	
					5	NPL	7	PROPOSED=700	PROPOSED=2000	PROPOSED=70	PROPOSED=100	PROPOSED=10000	5	NPL	5	2	
E-3	03/25/87	7	AQUA		72.0	56.0	ND	10.0	10.0	53.0	ND	23.0	ND	ND	ND	ND	
	01/14/88	19	AQUA		60.0	25.0	ND	9.2	9.2	48.0	ND	19.0	ND	ND	ND	ND	
	02/10/88	29	AQUA		60.0	26.0	ND	8.5	8.5	61.0	70.0	21.0	ND	ND	ND	ND	
	05/18/88	34	AQUA		43.0	26.6	ND	7.8	ND	86.0	ND	15.0	ND	29.5	22.9	18.3	
	09/25/88	32	AQUA		51.0	28.0	ND	5.6	ND	28.0	11.0	9.2	ND	ND	ND	ND	
	12/09/88	21	AQUA		30.4	21.6	ND	ND	ND	64.2	ND	ND	ND	41.7	ND	26.7	489.0
	02/24/89	28	AQUA		42.7	26.8	ND	ND	ND	74.0	7.2	ND	ND	49.5	ND	26.3	520.0
	06/07/89	5	AQUA	624	92.1	18.7	ND	ND	ND	45.8	6.9	7.1	ND	100.0	ND	19.2	ND
	08/07/89	8	AQUA	8240	46.3	18.1	ND	9.7	ND	52.4	7.8	7.6	ND	ND	ND	28.2	408.9

NOTES:

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 SEE LAB REPORT.  
 BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.  
 NPL = NO U.S. EPA PUBLISHED LEVEL  
 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 4

NAPHA RECOVERY WELLS  
 GROUNDWATER QUALITY ANALYSIS  
 ORGANIC COMPOUNDS  
 PAGE 1 OF 5

GROUNDWATER INVESTIGATIONS  
 ALLIED CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services



RW060R  
05-Oct-89

SAMPLE SOURCE	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS												OTHER VOC UG/L
					BENZENE UG/L	1,1-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	ETHYL BENZENE UG/L	TOLUENE UG/L	CIS-1,2-DICHLORO-ETHYLENE UG/L	TRANS-1,2-DICHLORO-ETHYLENE UG/L	TOTAL XYLENES UG/L	1,2-DI-CHLORO-ETHANE UG/L	CHLORO-ETHANE UG/L	CHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	
UNITS					5	NPL	7	PROPOSED=700	2000	PROPOSED=70	100	PROPOSED=10000	5	NPL	5	2	
MAXIMUM CONTAMINANT LEVEL (MCL):																	
FIVE-6	03/25/87	10	AQUA		ND	300.0	8.7	50.0	ND	410.0	54.0	65.0	ND	ND	ND		
	03/25/87	11	AQUA		ND	300.0	12.0	50.0	ND	410.0	72.0	69.0	ND	ND	ND		
	09/04/87	33	AQUA		ND	ND	ND	ND	ND	700.0	45.0	ND	290.0	ND	ND		
	01/14/88	16	AQUA		ND	ND	ND	ND	ND	480.0	ND	ND	250.0	ND	ND		
	02/10/88	26	AQUA		ND	ND	ND	ND	ND	550.0	55.0	57.0	230.0	ND	ND		
	05/19/88	31	AQUA		ND	ND	ND	23.4	ND	672.0	41.8	ND	391.0	ND	ND		
	09/25/88	31	AQUA		29.0	8.3	ND	30.0	ND	230.0	35.0	49.0	ND	ND	ND		
	12/09/88	19	AQUA		25.5	ND	ND	22.6	ND	305.0	27.5	40.0	133.0	ND	17.0	ND	
	02/24/89	26	AQUA		30.3	6.2	ND	22.5	ND	370.0	32.9	35.5	180.0	13.4	ND	30.1	443.0
	09/07/89	3	AQUA	624		30.6	ND	18.7	ND	400.0	40.2	25.3	180.0	ND	ND	28.9	400.0
09/07/89	6	AQUA	3240		24.8	ND	58.3	ND	360.0	36.7	28.7	140.0	ND	ND	32.3	360.0	

NOTES:

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BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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 4

NAPHTHA RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 2 OF 5

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
Environmental and Geotechnical  
Services



RW160R  
05-Oct-89

SAMPLE SOURCE	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS												
					BENZENE UG/L	1,1-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	ETHYL BENZENE UG/L	TOLUENE UG/L	CIS-1,2-DICHLORO-ETHYLENE UG/L	TRANS-1,2-DICHLORO-ETHYLENE UG/L	TOTAL XYLENES UG/L	1,2-DI-CHLORO-ETHANE UG/L	CHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	VINYL CHLORIDE UG/L	OTHER VOC UG/L
UNITS					5	NPL	7	PROPOSED=700	PROPOSED=2000	PROPOSED=70	PROPOSED=100	PROPOSED=100000	5	NPL	5	2	
MAXIMUM CONTAMINANT LEVEL (MCL):																	
FWP-16	03/25/87	8	AQUA		22.0	16.0	ND	ND	ND	16.0	ND	ND	ND	ND	ND	ND	
	09/04/87	35	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	01/14/88	20	AQUA		ND	ND	ND	ND	ND	ND	8.5	ND	ND	220.0	ND	ND	
	02/10/88	30	AQUA		ND	ND	ND	ND	ND	ND	8.2	ND	ND	ND	ND	ND	
	05/19/88	35	AQUA		ND	ND	ND	ND	ND	ND	ND	ND	ND	149.0	22.5	ND	
	09/25/88	33	AQUA		152.0	ND	ND	ND	ND	ND	6.0	ND	ND	ND	ND	ND	
	12/09/88	22	AQUA		ND	ND	ND	ND	ND	ND	5.4	ND	ND	140.0	ND	ND	15.0
	02/24/89	29	AQUA		100.0	ND	ND	ND	ND	ND	ND	ND	ND	170.0	ND	ND	140.0
	06/07/89	6	AQUA	624	53.0	ND	ND	ND	ND	ND	ND	ND	ND	170.0	ND	ND	ND
	09/07/89	9	AQUA	6240	52.1	ND	ND	ND	ND	ND	8.2	ND	ND	270.3	ND	ND	41.2
09/07/89	10	AQUA	8240	53.2	ND	ND	ND	ND	ND	7.4	ND	ND	250.0	ND	ND	62.4	

NOTES:

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BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL

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 4

NAPTHA RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 3 OF 5

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
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RW220R  
05-Oct-89

SAMPLE SOURCE	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS													
					BENZENE UG/L	1,1-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	ETHYL BENZENE MG/L	TOLUENE UG/L	CIS-1,2-DICHLORO-ETHYLENE UG/L	TRANS-1,2-DICHLORO-ETHYLENE UG/L	TOTAL XYLENES UG/L	1,2-DI-CHLORO-ETHANE UG/L	CHLORO-ETHANE UG/L	TRI-CHLORO-ETHANE UG/L	VINYL CHLORIDE UG/L	OTHER VOC UG/L	
					5	NPL	7	PROPOSED=700	PROPOSED=2000		70	100	PROPOSED=10000	5	NPL	5	2	
RWB-22	03/25/87	9	AQUA		184.0	124.0	ND	94.0	ND	ND	ND	60.0	199.0	ND	ND	ND		
	09/04/87	34	AQUA		ND	ND	ND	81.0	ND	ND	ND	ND	160.0	ND	420.0	ND		
	01/14/88	17	AQUA		117.0	48.0	ND	47.0	22.0	36.0	ND	ND	85.0	ND	70.0	ND		
	01/14/88	18	AQUA		122.0	53.0	ND	51.0	24.0	38.0	ND	ND	91.0	ND	90.0	ND		
	02/10/88	27	AQUA		170.0	59.0	ND	73.0	61.0	44.0	14.0	ND	140.0	ND	110.0	ND		
	02/10/88	28	AQUA		151.0	51.0	ND	70.0	50.0	46.0	11.0	ND	140.0	ND	ND	ND		
	05/19/88	32	AQUA		119.0	48.2	ND	103.0	79.5	92.5	ND	ND	133.0	ND	33.6	ND		
	05/19/88	33	AQUA		118.0	47.9	ND	58.8	34.7	113.0	ND	ND	113.0	ND	35.7	29.1	ND	
	09/25/88	30	AQUA		ND	8.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	12/09/88	20	AQUA		65.6	29.7	ND	41.0	16.4	55.7	12.5	ND	90.0	ND	ND	ND		
	02/24/89	27	AQUA		110.0	29.9	ND	52.9	34.4	62.5	13.8	ND	100.0	ND	52.6	ND		
	06/07/89	4	AQUA	624	150.0	23.4	ND	51.9	42.1	61.2	14.4	ND	97.1	ND	64.8	ND		
	09/07/89	7	AQUA	8240	100.0	19.3	ND	47.1	13.1	66.3	16.5	ND	64.7	ND	ND	ND		

NOTES:  
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ND = NOT DETECTED AT DETECTION LIMIT SPECIFIED BY THE LABORATORY.  
SEE LAB REPORT.  
BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.  
NPL = NO U.S. EPA PUBLISHED LEVEL.  
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 4  
NAPHA RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 5 OF 5  
GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX SBIN 024  
T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



RW1-7  
08-Oct-89

UNITS  
MAXIMUM CONTAMINANT LEVEL (MCL):

LABORATORY ANALYTICAL PARAMETERS

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	CIS 1,2-DICHLORO-ETHENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L
					NPL	PROPOSED=	PROPOSED=	PROPOSED=	PROPOSED=	200	5	PROPOSED=	2	NPL	PROPOSED=
					5	70	100	70	100	200	5	5			2000
FW 1-7	10/04/88	NSM-1	AQUA		1450.0	220.0	770.0	87.0	260.0	235.0	ND	ND	136.0	ND	ND
	10/06/88	NSM-5	AQUA		1100.0	180.0	731.0	77.0	273.0	280.0	ND	ND	125.0	ND	ND
	12/11/88	NSM-1	AQUA		422.0	53.6	659.0	45.8	211.0	374.0	ND	ND	102.0	ND	ND
	02/26/89	37	AQUA		394.0	63.4	500.0	53.0	240.0	390.0	ND	ND	80.0	ND	ND
	06/11/89	39	AQUA	624	280.0	58.2	450.0	41.4	200.0	360.0	ND	ND	74.6	ND	ND
	09/10/89	37	AQUA	8240	ND	ND	300.0	39.1	210.0	300.0	ND	ND	66.9	ND	ND

NOTES:  
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SEE LAB REPORT.

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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

RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS

PAGE 1 OF 5

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ASAUFR SBIN 024

T A GLEASON ASSOCIATES  
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RW8-12  
06-Q1-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS										
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	1,1,1-TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L
					NPL	5	7	70	100	200	5	5	2	NPL	2000
					6.2	ND	7.1	88.0	14.0	ND	215.0	ND	71.0	ND	ND
					5.8	ND	5.6	75.0	23.0	ND	187.0	ND	ND	ND	ND
					WELL NOT SAMPLED THIS EPISODE										
					ND	49.4	ND	500.0	110.0	ND	26.3	ND	96.8	ND	ND
					ND	31.4	ND	760.0	69.1	ND	280.0	ND	56.7	ND	ND
					ND	53.8	6.0	500.0	120.0	ND	39.7	ND	94.5	ND	ND

NOTES:

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SEE LAB REPORT.

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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

RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ASAUPR SBIN 024

T A GLEASON ASSOCIATES  
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Services



WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS									
					1,1-DI-ETHANE UG/L	1,2-DI-ETHANE UG/L	1,1-DI-ETHANE UG/L	1,2-DI-ETHANE UG/L	1,1,1-ETHANE UG/L	TRI-ETHYLENE UG/L	1,2-DI-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLOROFORM UG/L	TOLUENE UG/L
RW13	10/06/88	NSM-9	AQUA		ND	27.0	ND	328.0	65.0	ND	ND	84.0	ND	ND
	12/11/88	NSM-5	AQUA		ND	ND	517.0	81.4	ND	ND	ND	93.3	ND	ND
	02/26/89	39	AQUA		ND	47.1	450.0	110.0	ND	12.0	ND	85.6	ND	ND
	06/11/89	41	AQUA	624	ND	50.1	500.0	120.0	ND	33.0	ND	ND	ND	ND
	09/10/89	39	AQUA	8240	ND	53.5	480.0	120.0	ND	41.4	ND	66.8	ND	ND
	09/10/89	40	AQUA	8240	ND	52.4	480.0	120.0	ND	41.8	ND	66.3	ND	ND

NOTES:  
 OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
 ND = NOT DETECTED AT DETECTION LIMIT SPECIFIED BY THE LABORATORY.  
 SEE LAB REPORT.

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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

RECOVERY WELLS  
 GROUNDWATER QUALITY ANALYSIS  
 ORGANIC COMPOUNDS

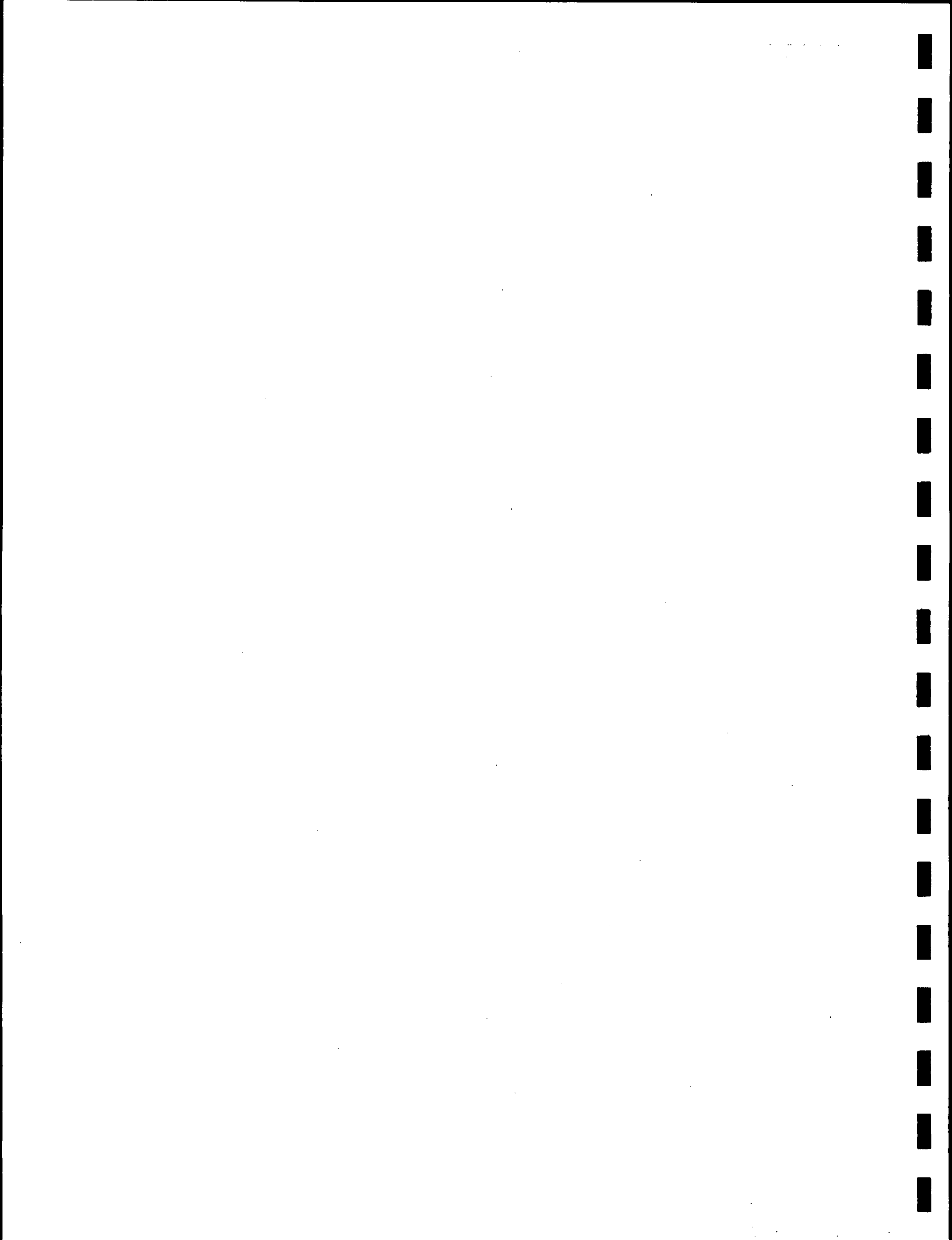
GROUNDWATER INVESTIGATIONS  
 ALLIED CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT # ASAU1R SBIN 024

T A GLEASON ASSOCIATES  
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RW18-19  
06-Oct-89

WELL NO.	SAMPLE DATE	SAMPLE #	LAB	METHOD	LABORATORY ANALYTICAL PARAMETERS											
					1,1-DI-CHLORO-ETHANE UG/L	1,2-DI-CHLORO-ETHANE UG/L	1,1-DI-CHLORO-ETHYLENE UG/L	1,2-DICHLORO-ETHYLENE UG/L	TRANS 1,2-DICHLORO-ETHYLENE UG/L	TRICHLORO-ETHANE UG/L	TRI-CHLORO-ETHYLENE UG/L	1,2-DI-CHLORO-PROPANE UG/L	VINYL CHLORIDE UG/L	CHLORO-FORM UG/L	TOLUENE UG/L	
					5	7	70	PROPOSED=	100	100	200	5	5	2	NPL	2000
	10/04/88	NSM-3	AQUA		ND	ND	ND	19.0	59.0	ND	ND	47.0	ND	ND	ND	ND
	10/06/88	NSM-8	AQUA		ND	ND	ND	19.0	57.0	ND	ND	45.0	ND	ND	ND	ND
	12/11/88	NSM-3	AQUA		ND	ND	ND	126.0	217.0	ND	ND	37.5	ND	ND	ND	ND
	02/26/89	41	AQUA		ND	ND	ND	22.8	38.4	ND	ND	47.4	ND	ND	ND	ND
	02/26/89	42	AQUA		ND	ND	ND	24.7	41.1	ND	ND	53.8	ND	ND	ND	ND
	06/11/89	42	AQUA	624	ND	ND	ND	26.8	49.1	ND	ND	51.4	ND	ND	ND	ND
	09/11/89	42	AQUA	8240	ND	ND	ND	26.9	37.2	ND	ND	37.8	ND	ND	ND	ND

NOTES:

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

BLANK SPACE INDICATES ANALYSIS NOT PERFORMED.

NPL = NO U.S. EPA PUBLISHED LEVEL.

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

RECOVERY WELLS  
GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS

PAGE 5 OF 5

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ASAUPT SBIN 024

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WELL NO.	SAMPLE DATE	SAMPLE #	LAB	SPECIFIC CONDUCTANCE UMHOS/CM	PH SU	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE		PHENOLS	
																				SMCL = 6.5-8.5	SMCL = 1000	SMCL = 5000	MG/L
RW13	12/11/88	NSM-5	AQUA	2610		17					<30		<5							60	0.01	0.01	
	02/26/89	39	AQUA	1772	7.05	14.5					<30		<10							<20	<0.01	<0.01	
	09/10/89	39	AQUA	1281	6.65	17					<10		<2							10	0.03	<0.01	
	08/10/89	40	AQUA	1275	6.70	17					<10		<4							10	0.033	<0.01	

NOTES:  
 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

SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL

NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 7

RECOVERY WELLS  
 GROUNDWATER QUALITY ANALYSIS  
 METALS, CYANIDE  
 AND PHENOLS

GROUNDWATER INVESTIGATIONS  
 ALLIED CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT ALCMPX SBIN 024

T A GLEASON ASSOCIATES  
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RW18-19 12-Oct-89		SPECIFIC CONDUCTANCE UMHOS/CM		PH SU SMCL = 6.5-8.5		TEMP C		ANTIMONY UG/L		ARSENIC UG/L		BERYLLIUM UG/L		CADMIUM UG/L		CHROMIUM UG/L		COPPER UG/L SMCL = 1000		LEAD UG/L		MERCURY UG/L		NICKEL UG/L		SELENIUM UG/L		SILVER UG/L		THALLIUM UG/L		ZINC UG/L SMCL = 5000		CYANIDE MG/L		PHENOLS MG/L			
WELL NO	SAMPLE DATE	SAMPLE #	LAB																																				
RW 18-19	12/12/88	NSM-3	AQUA	2080			18																																
	02/26/89	41	AQUA	1358	7.00		14																																
	02/26/89	42	AQUA	1310	7.10		14																																
	08/11/89	42	AQUA	1383	6.50		17																																

NOTES:  
 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  
 SMCL = SECONDARY MAXIMUM CONTAMINANT LEVEL  
 NPL = NO U.S. EPA PUBLISHED LEVEL

TABLE 7

RECOVERY WELLS  
 GROUNDWATER QUALITY ANALYSIS  
 METALS, CYANIDE  
 AND PHENOLS  
 PAGE 5 OF 5  
 GROUNDWATER INVESTIGATIONS  
 ALLIED CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT ALCMPX SBIN 024  
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PRIORITY POLLUTANTS

WELL NO.	DATE	SAMPLE #	LAB	VOLATILE ORGANIC COMPOUNDS (VOC)				BASE NEUTRAL COMPOUNDS				NOTE D CIS-1,2-DICHLOROETHENE UG/L								
				1,1-DI-CHLOROETHANE UG/L	1,1-DI-CHLOROETHYLENE UG/L	1,1-DI-CHLOROETHANE UG/L	TRI-CHLOROETHYLENE UG/L	CHLOROETHYLENE UG/L	BENZENE UG/L	CHLOROETHYLENE UG/L	CHLOROETHYLENE UG/L		NOTE A BASE NEUTRAL COMPOUNDS UG/L	NOTE B BIS (2-ETHYLHEXYL) PHTHALATE UG/L	NOTE C DI-N-ACID FRACTION UG/L					
S-8	11/05/86	6	AQUA	ND	59.3	ND	15.3	ND	4.7	79			4.3							
	11/05/86	7	AQUA	ND	68.9	ND	24.9	ND	3.2	97			6.3							
	11/05/86	8	HOWARD	ND	85.3	ND	ND	ND	13.3	99			ND							11.9
	02/12/87	16	AQUA	ND	61.5	ND	10.6	ND	3.4	76										
	02/12/87	17	AQUA	ND	56	ND	9	ND	3.4	68										
S-9	10/01/86	12	AQUA	ND	81.3	ND	2.2	ND	ND	84										
	11/05/86	4	AQUA	ND	29	ND	2.3	ND	ND	31				6.6						
	12/18/86	20	AQUA	ND	210	ND	ND	ND	ND	210										
	12/18/86	30	AQUA	ND	43.3	ND	ND	ND	ND	43										
	02/12/87	12	AQUA	ND	313	ND	23	ND	ND	336										
	06/05/87	7	AQUA	ND	460	ND	ND	ND	ND	460										17
S-12	11/06/86	24	AQUA	ND	ND	ND	ND	ND	ND	ND				ND						
S-14	11/06/86	21	AQUA	ND	120	ND	42.2	ND	3.6	166				ND						
	02/12/87	15	AQUA	77	217	20	ND	ND	ND	314										
	06/05/87	5	AQUA	58	180	ND	12	ND	8.5	258										
S-15	11/06/86	27	AQUA	ND	1.2	ND	1.5	ND	ND	3										
	12/18/86	22	AQUA	ND	ND	ND	ND	ND	ND	ND										
	06/05/87	6	AQUA	ND	ND	ND	ND	ND	ND	ND										

TABLE 2

GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 4 OF 8

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCHPX SBIN 004

T A GLEASON ASSOCIATES  
ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES

NOTES:

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

ND = NOT DETECTED  
SEE LAB REPORT FOR DETECTION LIMITS

A = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS  
BASE NEUTRALS.

B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS  
PHTHALATE ESTERS.

C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS  
ACID FRACTION.

D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC.

SEE LAB REPORT

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

SEE LAB REPORT



PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

BASE NEUTRAL COMPOUNDS

WELL NO.	DATE	SAMPLE #	LAB	VOLATILE ORGANIC COMPOUNDS (VOC)				BASE NEUTRAL COMPOUNDS				NOTE D CIS-1,2-DICHLOROETHENE	
				1,1-DI-CHLOROETHANE	1,1-DI-CHLOROETHYLENE	1,1,1-TRI-CHLOROETHANE	1,1,1-TRI-CHLOROETHYLENE	TRANS-1,2-DI-CHLOROETHYLENE	1,1-DI-CHLOROETHYLENE	NOTE A BASE NEUTRAL COMPOUNDS	NOTE B BIS (2-ETHYLHEXYL) PHTHALATE		NOTE B DI-N-OCTYL PHTHALATE
				UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
S-21	11/06/86	17	AQUA	ND	ND	ND	ND	116	ND	116	ND	ND	
	12/17/86	13	AQUA	ND	ND	ND	ND	69	ND	69	ND	ND	
	02/11/87	5	AQUA	ND	ND	ND	ND	89	ND	89	ND	ND	
	06/05/87	17	AQUA	ND	ND	ND	ND	30	ND	30	ND	ND	5.0
	06/05/87	18	AQUA	ND	ND	ND	ND	34	ND	34	ND	ND	5.6
S-22	11/06/86	18	AQUA	ND	ND	ND	ND	164	ND	164	ND	ND	
	01/07/87	6	AQUA	ND	ND	ND	ND	75.8	ND	76	ND	ND	
	01/07/87	7	AQUA	ND	ND	ND	ND	73.6	ND	74	ND	ND	
	02/12/87	6	AQUA	ND	ND	ND	ND	132	ND	132	ND	ND	50
	02/12/87	7	AQUA	ND	ND	ND	ND	109	ND	109	ND	ND	50
	06/05/87	20	AQUA	ND	ND	ND	ND	69	ND	69	ND	ND	41
S-23	11/06/86	19	AQUA	ND	ND	ND	ND	4.5	ND	5	ND	3.4	
	01/07/87	8	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/11/87	8	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	06/05/87	21	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	
I-D	01/09/87	13	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/12/87	1	AQUA	ND	ND	ND	ND	19.5	ND	20	ND	ND	
	06/05/87	13	AQUA	ND	ND	ND	ND	12	ND	12	ND	ND	

NOTES:

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ND = NOT DETECTED  
SEE LAB REPORT FOR DETECTION LIMITS

A = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS.  
SEE LAB REPORT

B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHTHALATE ESTERS.  
SEE LAB REPORT

C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION.  
SEE LAB REPORT

D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC.  
SEE LAB REPORT

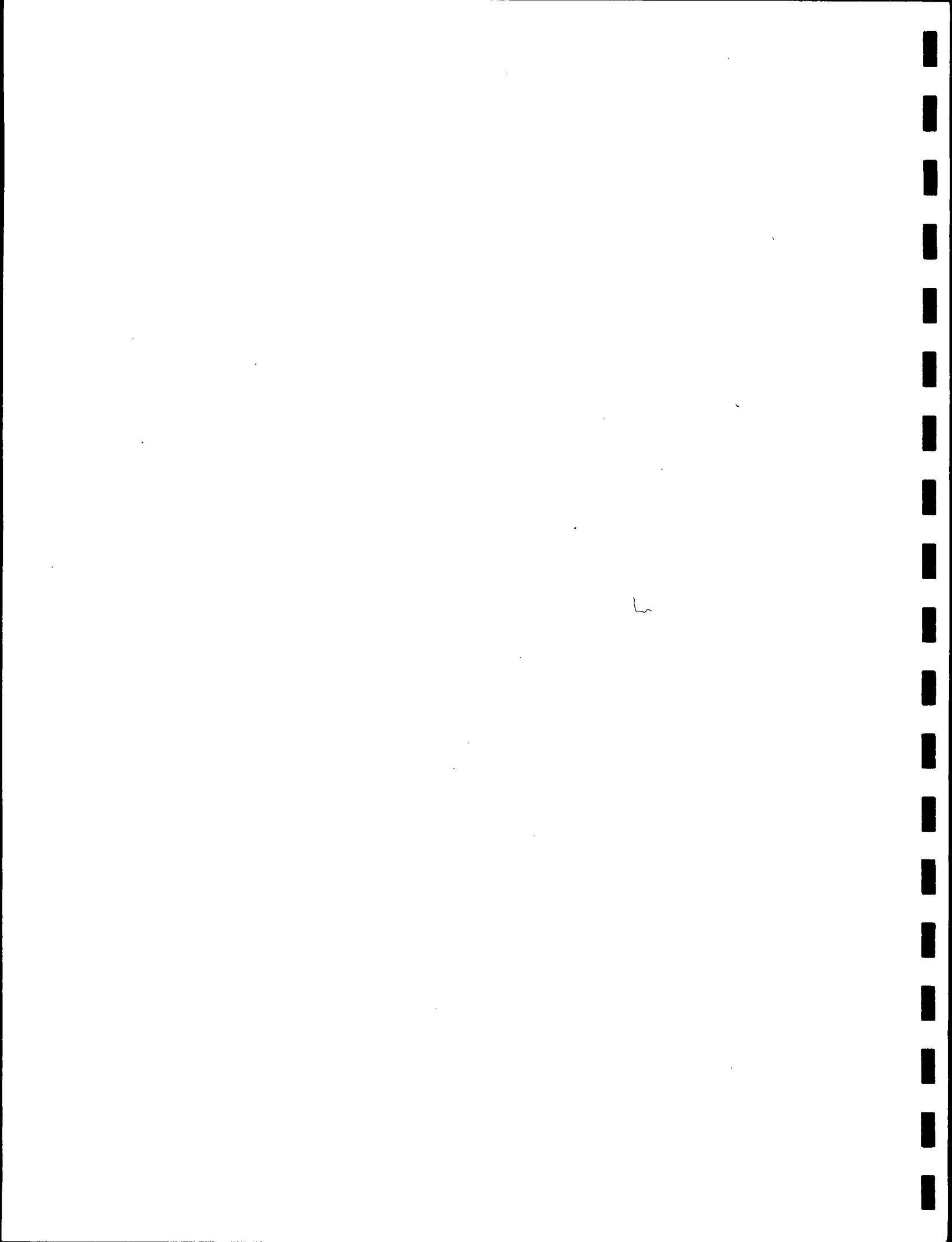
VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE.  
SEE LAB REPORT

TABLE 2

GROUNDWATER QUALITY ANALYSIS ORGANIC COMPOUNDS PAGE 6 OF 8

GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX SGIN 004

T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES













WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS
				UMHDS/CM	SU	C	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	MG/L	MG/L
D-3	5	11/05/86	AQUA				<3	<4	<1	<1	<10	8	11	<0.3	<10	<16	<4	<3	1020	<0.01	<0.010
D-4	109	10/01/86	AQUA	870																	
	309	10/01/86	AQUA				<6	<4	<1	<10	4	30	<0.3	<10	10	<4			9280		
	13	02/12/87	AQUA	600		11				<10		53							5280		
	8	06/05/87	AQUA	750	8.18	16				<5*			26*						20*	.098	1.33
D-5	22	11/05/86	AQUA				<3	7	<1	<10	24	9	<0.3	<10	<4	<4	<4	<3	44	0.03	0.025
	22	12/18/86	AQUA				<3	<4	<1	<10	24	<9	<0.3	<10	<8	<4	<4	<3	96	<0.010	<0.010
D-7	108	10/01/86	AQUA	1110																	
	308	10/01/86	AQUA				<6	4	<1	<1	20	10	<0.3	<20	<4	<10			320		
	26	11/06/86	AQUA				<3	4	<1	<10	4	3	<0.3	<10	<8	<4	<4	<3	28	<0.01	0.011
	9	06/05/87	AQUA	800	8.31	16				<5*			9*						10*	0.031	0.233
	10	06/05/87	AQUA	800	8.31	16				<5*			<3*						<10*	0.041	0.228
D-10	15	11/06/86	AQUA				<3	<4	<1	<1	12	12	<0.3	<10	<16	<4	<4	<3	240	<0.01	<0.010
D-11	3	11/05/86	AQUA				<3	<4	<1	<1	<10	12	<0.3	<10	<12	<4	<4	<3	270	<0.01	<0.010

NOTES:

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BLANK SPACE INDICATES NOT ANALYZED FOR

TABLE 3

GROUNDWATER QUALITY ANALYSIS METALS, CYANIDE AND PHENOLS PAGE 1 OF 7

GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT ALCHPX SBIN 04 T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES



WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	
				UMHOS/CM	SU	C	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	MG/L	MG/L
I-1	20	11/06/86	AQUA				15	<4	<1	<1	12	8	24	<0.3	<10	<12	<4	<3	84	<0.01	<0.010	
S-1	1	11/05/86	AQUA				<3	<4	<1	<10	24	15	<0.3	<10	<12	<4	3	20	<0.01	0.02		
	18	12/17/86	AQUA				<3	<4	<1	<10	44	<9	0.3	<10	<8	<10	<6	100	<0.010	<0.010		
	1	06/05/87	AQUA	625	7.15	14				<5*			<3*					<10*	0.042	0.020		
S-2	23	11/06/86	AQUA				<3	<4	<1	<1	12	12	35	<0.3	<10	<12	<4	<3	3120	0.01	0.033	
S-3	9	11/05/86	AQUA			12	<15	<4	<1	<1	18	52	86	<0.3	<10	<300	<4	<6	415	<0.01	<0.01	
	18	02/12/87	AQUA	1600							16		110						380			
	4	06/05/87	AQUA	1600	7.52	14				<5*			<3*						30*	0.040	<0.01	
S-4	107	09/28/86	AQUA	1930	6.88															<0.01		
	307	09/28/86	AQUA				<20	44	<2	<4	24	200	68	<0.3	44	<40	4		920			
RS-4	22	06/05/87	AQUA	1600	7.48	16					<5*		<3*						30*	0.028	>0.010	
S-5	29	11/07/86	AQUA				<6	<4	<1	<1	12	28	46	<0.3	<10	<24	<4	<6	360	0.01	<0.010	
S-7	25	11/06/86	AQUA				<6	<4	<1	<1	10	38	134	<0.3	<10	<8	<4	<3	610	0.01	0.016	

NOTES:

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\*METALS FILTERED THRU .45 MICRON FILTER

TABLE 3

GROUNDWATER QUALITY ANALYSIS METALS, CYANIDE AND PHENOLS PAGE 2 OF 7

GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT ALCHPX SBIN 04

T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES



EC1093

WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L
S-8	6	11/05/86	AQUA				<3	<4	<1	1	24	16	12	<0.3	32	<20	<4	<3	3520	<0.01	<0.01
	7	11/05/86	AQUA				<3	<4	<1	<1	24	20	13	0.3	28	<40	<4	<3	4040	<0.01	0.040
	8	11/05/86	HOWARD				<25	6	<10	<2	29	34	16	0.3	37	<2.5	<30	<25	4910	<0.005	0.007
	16	02/12/87	AQUA	1900		12					28		24						1090		
	17	02/12/87	AQUA								16		15						690		
S-9	110	10/01/86	AQUA	1775																<0.01	
	130	10/01/86	AQUA				<6	<4	<1	1	<20	130	33	<0.3	<20	<4	<10		930		
	4	11/01/86	AQUA				<3	<4	<1	<1	20	88	15	<0.3	16	<12	<4	<3	500	<0.01	<0.010
	20	12/18/86	AQUA				<3	<4	2	2	<10	28	<10	<0.3	<10	<8	<4	<24	120	<0.010	<0.010
	30	12/18/86	AQUA				<3	<4	<1	<1	<10	4	<10	<0.3	<10	<8	<4	<18	8	<0.010	<0.010
	7	06/05/87	AQUA	1800	7.68	16					<5*		<3*						10*	0.014	0.049
S-12	24	11/06/86	AQUA				<6	<4	<1	<1	12	20	45	<0.3	<10	<12	<4	<3	6320	<0.01	0.024
S-14	21	11/06/86	AQUA				<3	<4	<1	1	<10	40	16	<0.3	16	<8	<4	<3	370	<0.01	<0.010
	5	06/05/87	AQUA	1400	7.39	15					<5*		<3*						10*	0.048	<0.01
S-15	27	11/06/86	AQUA				<6	<4	<1	<1	16	48	16	<0.3	16	<12	<4	<3	120	<0.01	<0.010
	23	12/18/86	AQUA				<3	<4	<1	<1	<10	20	<15	<0.3	16	<4	8	<15	48	<0.010	<0.010
	6	06/05/87	AQUA	1700	7.27	16					<5*		<3*						10*	0.041	0.010

NOTES:

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TABLE 3

GROUNDWATER QUALITY ANALYSIS METALS, CYANIDE AND PHENOLS PAGE 3 OF 7

GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT ALCHPX S6IN 04

T A GLEASON ASSOCIATES

ENVIRONMENTAL AND GEOTECHNICAL SERVICES













WELL NO.	SAMPLE #	DATE	LAB	PH		TEMP C	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS
				SU	CH																
S-16	11	11/06/86	AQUA				<6	<4	<1	<10	310	65	<0.3	12	<16	<4	<3	220	<0.01	0.060	
	19	12/18/86	AQUA				<6	<4	<1	<10	52	<10	<0.3	12	<8	4	<9	52	<0.010	<0.010	
	29	12/18/86	AQUA				<3	<4	<1	<10	4	<9	0.4	<10	<8	4	<9	4	<0.010	<0.010	
	11	02/12/87	AQUA			15				<10		13						40			
	12	06/05/87	AQUA			19				<5*		7*						20*	0.070	<0.010	
S-17	16	11/06/86	AQUA				<3	<4	<1	<10	12	23	<0.3	20	<24	<4	<3	150	<0.01	0.025	
	15	06/05/87	AQUA			15				<5*		<3*						<10*	0.024	<0.010	
S-18	12	11/06/86	AQUA				<3	<4	<1	<10	16	11	0.3	<10	<8	<4	<3	170	<0.01	0.020	
	13	11/06/86	AQUA				<3	<4	<1	<10	24	15	<0.3	<10	<20	<4	<3	270	<0.01	0.012	
	14	11/06/86	HOWARD				<25	<5	<10	<2	27	32	8	<0.2	8	<2.5	<30	288	<0.005	0.007	
S-19	2	11/05/86	AQUA				<3	<4	<1	<12	16	25	<0.3	<10	<8	<4	<3	620	<0.01	<0.010	
S-20	30	11/07/86	AQUA				<3	<4	<1	<16	16	25	<0.3	<10	<8	<4	<6	64	0.02	<0.010	
	16	06/05/87	AQUA			13				<5*		<3*						10*	0.026	<0.010	
S-21	17	11/06/86	AQUA				<6	<4	<1	<20	20	33	<0.3	20	<100	<4	<3	160	<0.01	<0.010	
	17	06/05/87	AQUA			13				<5*		<3*						<10*	0.023	0.080	
	18	06/05/87	AQUA			13				<5*		<3*						10*	0.031	0.114	

NOTES:  
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\*METALS FILTERED THRU .45 MICRON FILTER

TABLE 3

GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS  
PAGE 4 OF 7

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCHPX SBIN 04

T A GLEASON ASSOCIATES

ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES



WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L
S-22	18	11/06/86	AQUA				<3	<4	<1	<1	12	<4	5	<0.3	<10	<40	4	<3	28	<0.01	<0.010
	20	06/05/87	AQUA	1000	7.64	13					<5*		<3*						10*	0.063	0.018
S-23	19	11/06/86	AQUA				<3	<4	<1	1	12	8	34	<0.3	<10	<16	4	<3	120	<0.01	<0.010
	21	06/05/87	AQUA	1000	7.59	13					<5*		<3*						10*	0.032	0.242
7-25	31	11/07/86	AQUA				<6	5	<1	2	12	40	66	<0.3	24	<12	<4	<6	120	0.01	<0.010
	20A	02/12/87	AQUA	700		10					16		300						170		
	20B	02/12/87	AQUA								<10*		3*						12*		
	2	06/05/87	AQUA	600	7.31	12					<5*		<3*						10*	0.026	<0.010
7-50	32	11/07/86	AQUA				<6	<4	<1	<1	<10	16	4	<0.3	<10	<4	<4	<6	32	0.01	<0.010
	21	02/12/87	AQUA								12		<3						12		
9-33	11	01/08/87	AQUA				<50	11	6	2	170	160	69	0.6	220	<80	<4	<1	840		
	19A	02/12/87	AQUA								844		125						210		
	19B	02/12/87	AQUA								<10*		<3*						12*		
	3	06/05/87	AQUA	1250	7.88	14					<5*		4*						10*	0.014	<0.010
1-0	13	01/09/87	AQUA				<1	<8	<0.4	3	40	<4	240	<0.3	12	<4	<4	<1	44		
	1	02/12/87	AQUA	1300		11					18		52						14		
	13	06/05/87	AQUA	1250	7.62	13					<5*		5*						20*	0.022	<0.010

TABLE 3

GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS  
PAGE 5 OF 7

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCHPX SB IN 04  
T A GLEASON ASSOCIATES  
ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES

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WELL NO.	SAMPLE #	DATE	LAB	PH		TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS
				SU	C	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
BLANK	28	11/06/86	AQUA				<3	<4	<1	<1	<10	88	<3	<0.3	12	<4	<4	<3	4	<0.01	0.023
	25	12/18/86	AQUA				<3	<4	<1	<1	<10	4	4	<0.3	<10	<4	<4	<3	6	0.035	<0.010
	24	12/18/86	AQUA				<3	<4	<1	5	<10	4	<3	0.3	4	<4	<4	<5	4	<0.010	
	12	01/08/87	AQUA				<1	<4	<0.4	<1	<10	<4	<3	<0.3	<10	4	<4	<1	<4		
	23	02/12/87	AQUA								<10		<3						8		
		02/12/87	AQUA								<10		<3						4		
	23	06/05/87	AQUA							<5*	<5*		<3*						<10*	0.029	<0.010

NOTES:

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TABLE 3

GROUNDWATER QUALITY ANALYSIS:  
 METALS, CYANIDE AND PHENOLS  
 PAGE 7 OF 7  
 GROUNDWATER INVESTIGATIONS  
 ALLIED CORPORATION  
 SOUTH BEND, INDIANA  
 PROJECT ALCOMPX 88IN 04  
 T A GLEASON ASSOCIATES  
 ENVIRONMENTAL AND GEOTECHNICAL SERVICES



TABLE 4  
BLADDER PUMP INSTALLATION DATA

WELL NO.	DIAMETER AND TYPE	TOTAL DEPTH OF WELL (ft)	APPROX. STATIC WATER LEVEL (ft)	PUMP SIZE	PUMP INTAKE (ft)	TOP OF PUMP (ft)
S-1	4" STEEL	36	25	4" x 6'	31	25
S-3	4" STEEL	25	20	1" x 6'	24.5	18.5
S-9	4" STEEL	21	17	1" x 6'	20.5	14.5
S-14	4" STEEL	20	16	1" x 6'	20	14
S-15	4" STEEL	22	18	1" x 6'	21.5	15.5
S-16	4" STEEL	21	19	1" x 3.5'	21	15.5
S-17	4" STEEL	31	16	4" x 3.5'	26	22.5
S-20	4" STEEL	19	15	1" x 6'	19	13
S-21	4" STEEL	23	16	4" x 3.5'	18	14.5
S-22	4" STEEL	26	14	4" x 6'	21	15
S-23	4" STEEL	28	16	4" x 6'	23	17
D-4	4" STEEL	113	21	4" x 11'	108	97
D-7	4" STEEL	76	17	4" x 11'	30	19
1-D	1.5" PVC	208	17	1" x 11'	170	159
2-D	1.5" PVC	188	18	1" x 11'	40	29
4-D	1.5" PVC	203	22	1" X 11'	35	24
5-D	1.5" PVC	195	25	1" x 11'	40	29
7-25	1.5" PVC	25	20	1" x 6'	24	18
9-33	1.5" PVC	33	18	1" x 6'	30	24



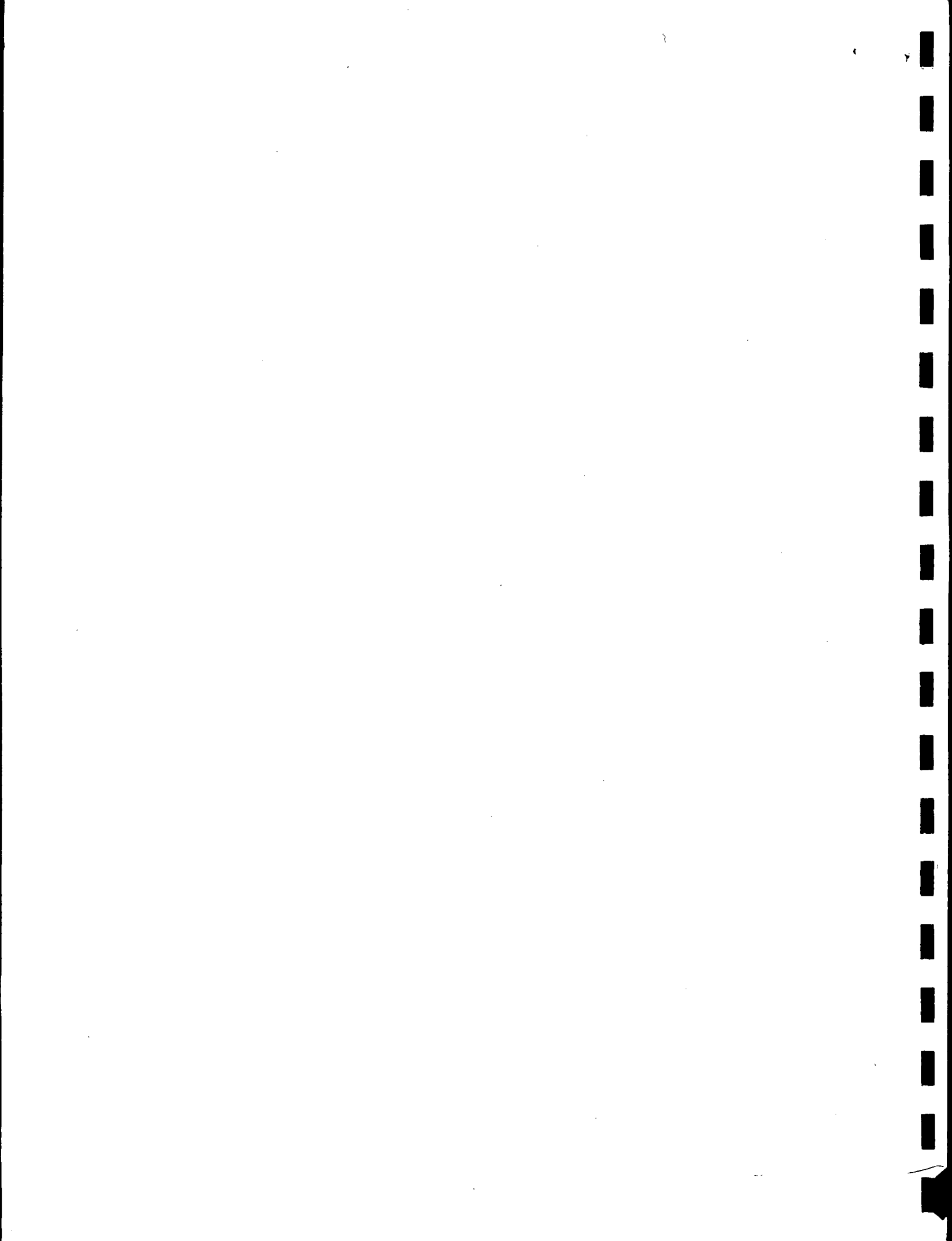
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GROUNDWATER MONITORING REPORT  
THIRD QUARTER 1987  
TABLE 5

ALCMPX SBIN 04

20 JANUARY 1988

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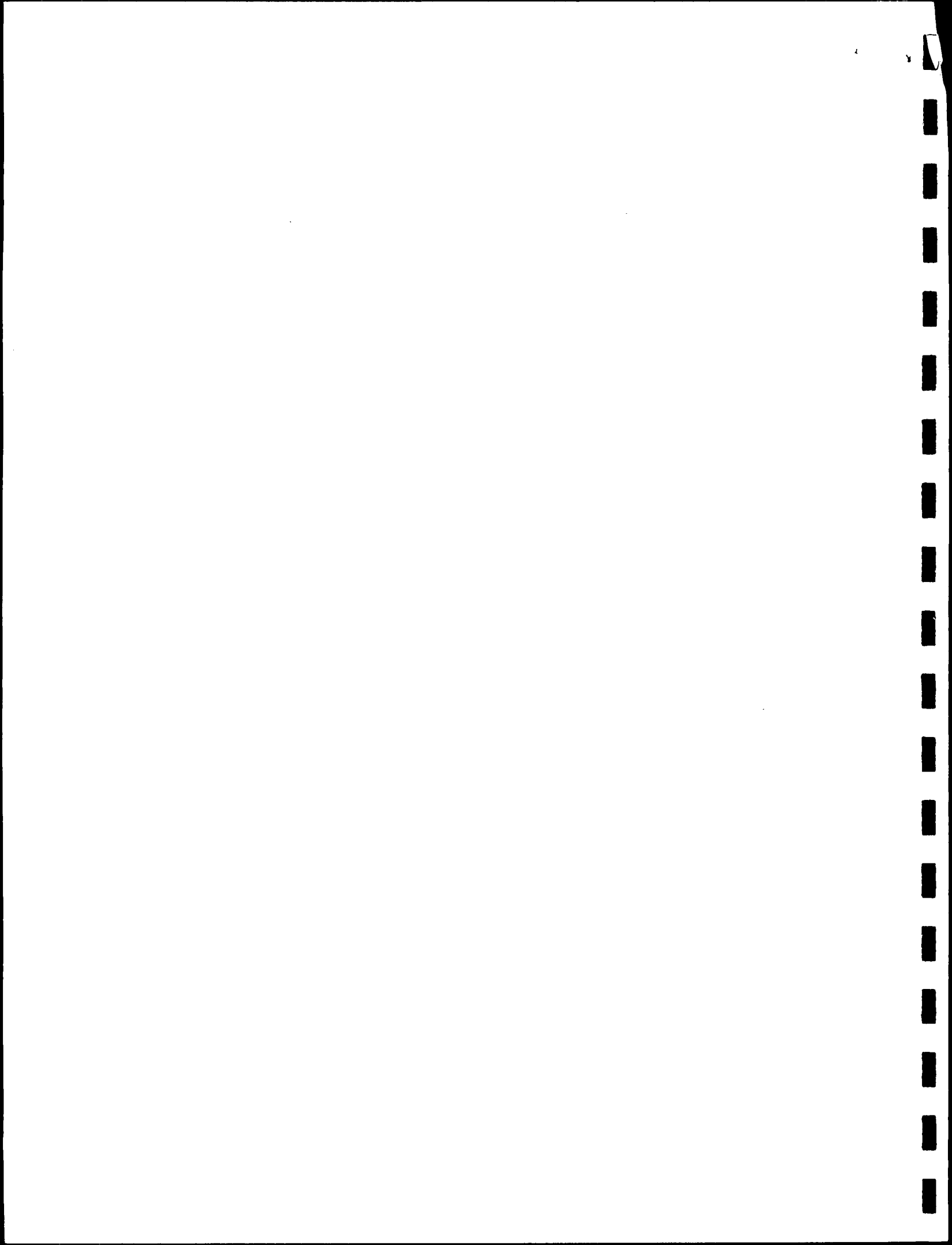












PRIORITY POLLUTANTS

		VOLATILE ORGANIC COMPOUNDS (VOC)										BASE NEUTRAL COMPOUNDS										
WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE	1,1-DI- CHLORO- ETHYLENE	1,2-DI- CHLORO- ETHYLENE	1,2-DI- CHLORO- ETHANE	1,1,1- TRI- CHLORO- ETHANE	1,1,1- TRI- CHLORO- ETHYLENE	1,2-DI- CHLORO- ETHYLENE	1,2-DI- CHLORO- ETHANE	VINYL CHLORIDE	FORM PHthalate	TOLUENE COMPOUNDS	DI-N- OCTYL PHthalate	NOTE A BASE NEUTRAL COMPOUNDS	NOTE B BIS [2-ETHYLHEXYL] PHthalate	NOTE 8 DI-N- OCTYL PHthalate	NOTE C ACID FRACTION	NOTE D [CIS-1,2- DICHORO- ETHRENE	NOTES:	
S-4	09/28/86	8	AQUA	ND	170	990	257	174	3031	ND	ND	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.
S-4A	09/28/86	9	HONARD	1340.0	26.5	86.5	89.5	79.5	2252	ND	ND	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	IA = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS. SEE LAB REPORT.	
S-4A	06/05/87	22	AQUA	1100	200	110	200	120	1730	ND	ND	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	IB = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHthalate ESTERS. SEE LAB REPORT.	
S-4A	09/04/87	27	AQUA	1100	ND	170	ND	17	1367	ND	790	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	IC = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION. SEE LAB REPORT.	
<p>TABLE 5</p> <p>GROUNDWATER QUALITY ANALYSIS</p> <p>ORGANIC COMPOUNDS</p> <p>PAGE 5 OF 27</p> <p>MONITOR WELLS</p> <p>GROUNDWATER INVESTIGATIONS</p> <p>ALLIED CORPORATION</p> <p>SOUTH BEND, INDIANA</p> <p>PROJECT # ALCHPX SBIN 007</p> <p>T A GLEASON ASSOCIATES</p> <p>Environmental and Geotechnical Services</p>																						























PRIORITY POLLUTANTS

WELL NO.	DATE	SAMPLE #	LAB	VOLATILE ORGANIC COMPOUNDS (VOC)										BASE NEUTRAL COMPOUNDS				NOTE D	NOTES									
				1,1-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	1,1,1- TRI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHYLENE	1,1,2- TRI- CHLORO- ETHYLENE	SUM	PROPANE [CHLORIDE FORM	VINYL [CHLORO- FORM	TOLUENE [COMPOUNDS PHthalate	PHthalate	DI-N- OCTYL	NOTE B BIS	NOTE A NEUTRAL [COMPOUNDS PHthalate	NOTE B BIS			NOTE C ACID FRACTION	NOTE D CIS-1,2- ETHENE							
S-17	11/06/86	16	AQUA	4.3	ND	1.5	ND	ND	12.0	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS. SEE LAB REPORT.
	01/07/87	4	AQUA	ND	ND	ND	ND	ND	94.8	95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHthalate ESTERS. SEE LAB REPORT.
	02/12/87	3	AQUA	ND	ND	7.9	ND	116	124	124	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION. SEE LAB REPORT.
	06/05/87	15	AQUA	ND	ND	ND	ND	80	80	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT.
	09/03/87	20	AQUA	ND	ND	ND	ND	86	86	86	ND	ND	ND	ND	ND	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.
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TABLE 5																												
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GROUNDWATER QUALITY ANALYSIS ORGANIC COMPOUNDS PAGE 10 OF 27 MONITOR WELLS																												
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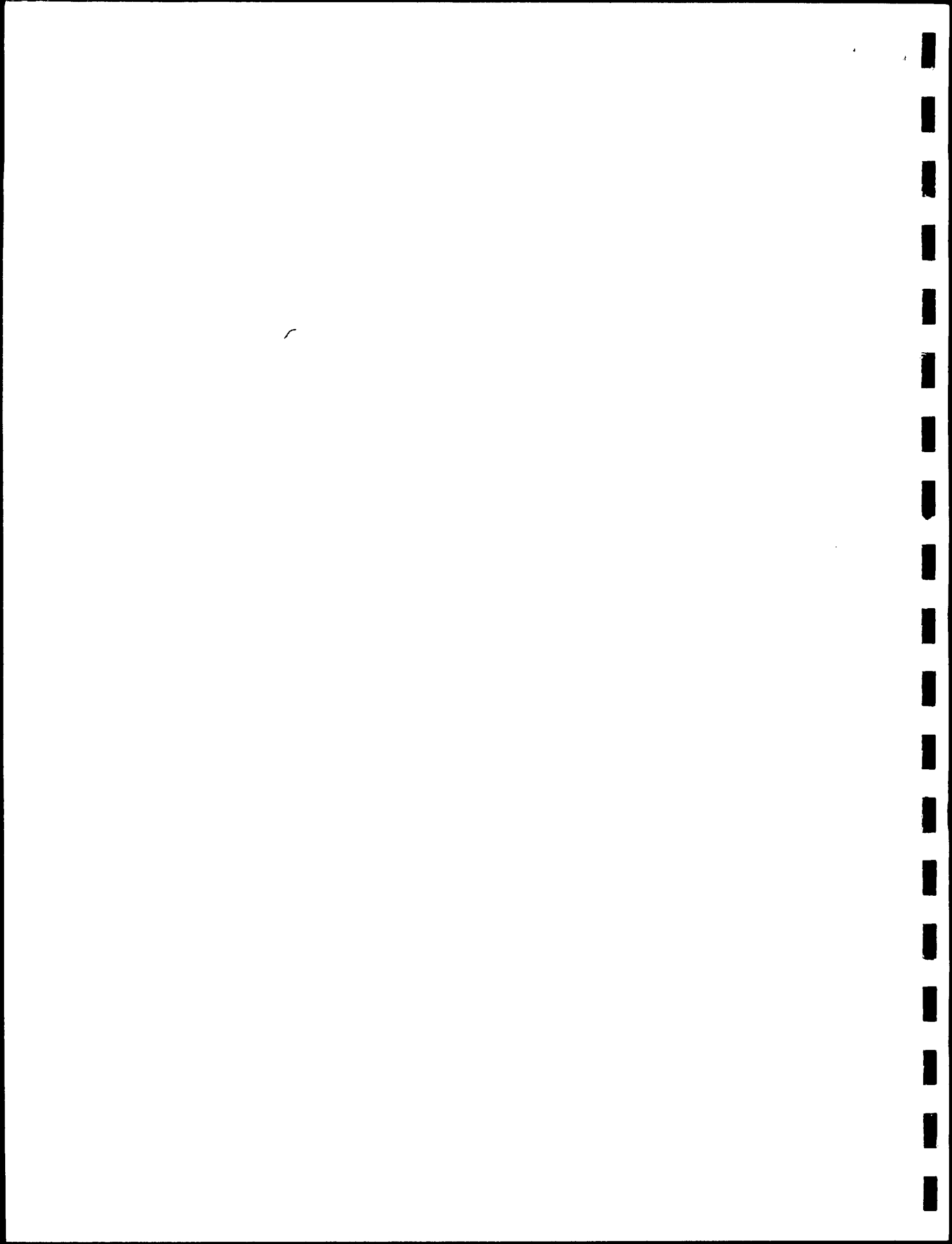












PRIORITY POLLUTANTS

WELL NO.	DATE	SAMPLE #	LAB	VOLATILE ORGANIC COMPOUNDS (VOC)												BASE NEUTRAL COMPOUNDS				NOTE D	NOTES							
				1,1-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	1,1,1- TRI- CHLORO- ETHANE	1,1,2- DI- CHLORO- ETHANE	1,2,2- TRI- CHLORO- ETHANE	SUM	FORM	CHLORO- VINYL	PROPANE CHLORIDE	PHthalate	(2-ETHYLHEXYL) OCTYL	DI-N- OCTYL	PHthalate	ACID FRACTION	CIS-1,2- DICHLORO- ETHENE										
S-23	11/06/86	19	AQUA	ND	ND	ND	4.5	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	A = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS. SEE LAB REPORT.
	01/07/87	8	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHthalate ESTERS. SEE LAB REPORT.
	02/11/87	8	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION. SEE LAB REPORT.
	06/05/87	21	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCM SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT.
	09/03/87	13	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	VOC RESULTS ARE A SUMMARY OF A GCM SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.
																												TABLE 5
																												GROUNDWATER QUALITY ANALYSIS ORGANIC COMPOUNDS PAGE 14 OF 27 MONITOR WELLS
																												GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX S81M 007 T A GLEASON ASSOCIATES
																												Environmental and Geotechnical Services



PRIORITY POLLUTANTS

		VOLATILE ORGANIC COMPOUNDS (VOC)													
WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	1,1-DI- CHLORO- ETHYLENE	1,1,1- TRI- CHLORO- ETHANE	1,1,1- TRI- CHLORO- ETHYLENE	1,2-DI- CHLORO- ETHYLENE	1,2-DI- CHLORO- PROPANE	VINYL CHLORIDE	ETHYL- BENZENE	TOLUENE	NOTE D CIS-1,2- DICHLORO- ETHENE	NOTES:
				UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	SUM	UG/L	UG/L	UG/L	
S-24	107/10/87	2	AQUA	ND	ND	ND	ND	145	ND	150	295	ND	ND	ND	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC.
	109/04/87	25	AQUA	ND	ND	ND	ND	140	ND	170	310	ND	ND	150	SEE LAB REPORT FOR DETECTION LIMITS
															ND = NOT DETECTED SEE LAB REPORT FOR DETECTION LIMITS
															TABLE 5
															GROUNDWATER QUALITY ANALYSIS ORGANIC COMPOUNDS
															PAGE 15 OF 27 MONITOR WELLS
															GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX SBN 007
															T A GLEASON ASSOCIATES
															ENVIRONMENTAL AND GEOTECHNICAL SERVICES



PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	1,1-DI- CHLORO- ETHYLENE	ETHYLENE	SUM	VINYL CHLORIDE	1,2-DI- CHLORO- PROPANE	ETHYL- BENZENE	TOLUENE	ETHENE	NOTE D	NOTES:	
S-25	07/10/87	1	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
				UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
																ND = NOT DETECTED SEE LAB REPORT FOR DETECTION LIMITS
																D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT
																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 16 OF 27 MONITOR WELLS
																GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX SBIN 007
																T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES



PRIORITY POLLUTANTS

		VOLATILE ORGANIC COMPOUNDS (VOC)													
WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,1,1- TRI- CHLORO- ETHANE UG/L	1,1,1- TRI- CHLORO- ETHYLENE UG/L	1,2-DI- CHLORO- ETHANE UG/L	1,2-DI- CHLORO- PROPANE UG/L	VINYL CHLORIDE UG/L	BENZENE UG/L	ETHYL- BENZENE UG/L	TOLUENE UG/L	ETHENE UG/L	NOTE D CIS-1,2- DICHLORO- ETHENE UG/L
S-26	07/10/87	7	AQUA	ND	ND	ND	ND	ND	ND	16	ND	ND	ND	ND	ND
	09/03/87	16	AQUA	ND	ND	ND	ND	ND	ND	14	ND	ND	ND	ND	ND
ND = NOT DETECTED SEE LAB REPORT FOR DETECTION LIMITS D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT 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 17 OF 27 MONITOR WELLS															
GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX S81N 007															
T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES															





PRIORITY POLLUTANTS

		VOLATILE ORGANIC COMPOUNDS (VOC)												NOTES	
WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE UG/L	1,2-DI- CHLORO- ETHANE UG/L	1,1-DI- CHLORO- ETHANE UG/L	TRANS-1,2 DI- CHLORO- ETHYLENE UG/L	TRI- CHLORO- ETHANE UG/L	TRI- CHLORO- ETHYLENE UG/L	VINYL CHLORIDE UG/L	1,2-DI- CHLORO- PROPANE UG/L	ETHYL- BENZENE UG/L	TOLUENE UG/L	NOTE D CIS-1,2- DICHLORO- ETHENE UG/L	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
S-27	07/10/87	8	AQUA	ND	ND	ND	10	ND	90	100	ND	ND	ND	9.4	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT
	09/04/87	26	AQUA	ND	ND	ND	8	100	100	108	ND	ND	ND	7.5	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>TABLE 5</p> <p>GROUNDWATER QUALITY ANALYSIS ORGANIC COMPOUNDS</p> <p>PAGE 18 OF 27 MONITOR WELLS</p> <p>GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX SBIN 007</p> <p>T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES</p>															



PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

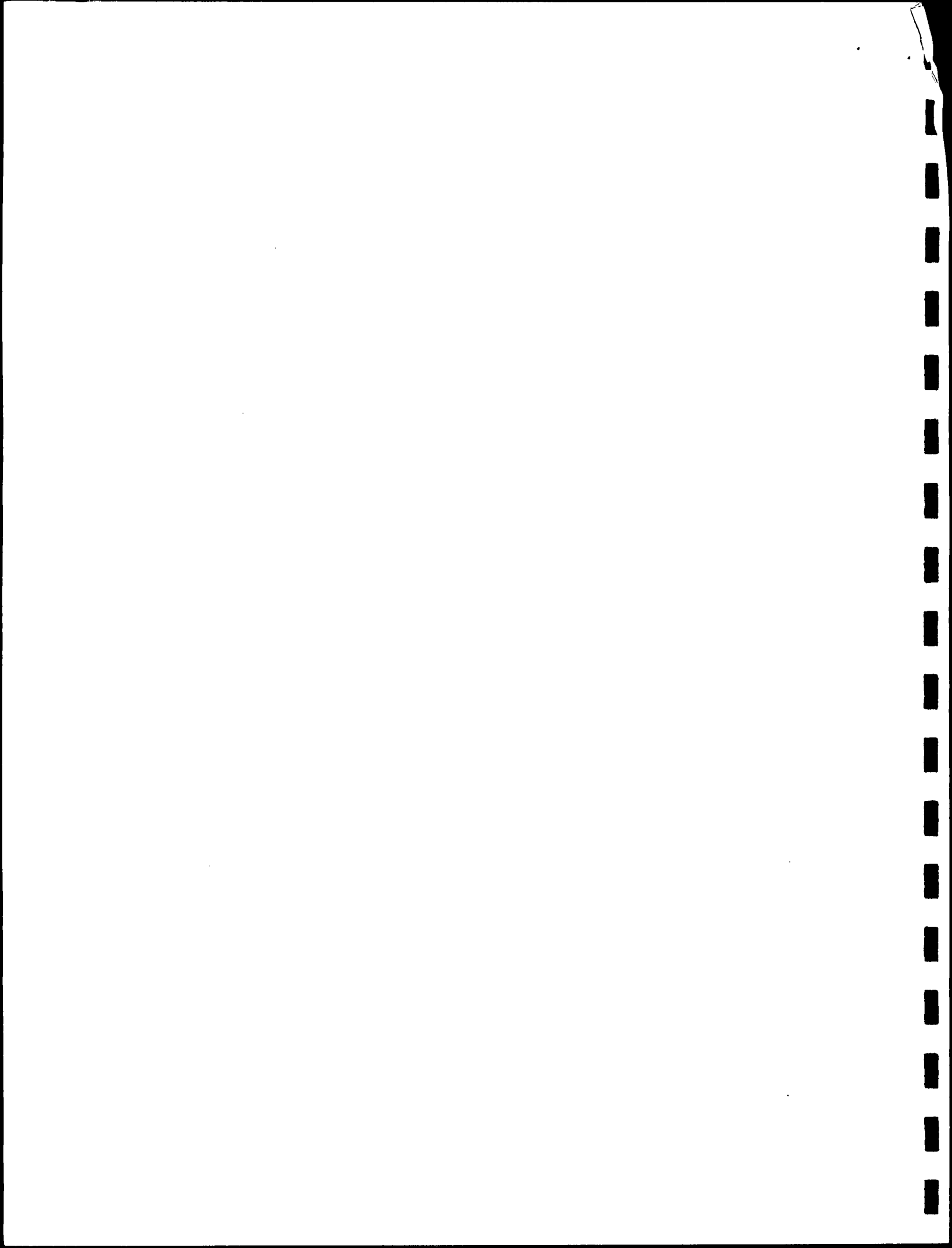
WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE UG/L	1,2-DI- CHLORO- ETHANE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	TRANS-1,2 DI- CHLORO- ETHYLENE UG/L	1,1,1- TRI- CHLORO- ETHANE UG/L	1,1,1,1- TRI- CHLORO- ETHYLENE UG/L	SUM	VINYL CHLORIDE UG/L	1,2 DI- CHLORO- PROPANE UG/L	ETHYL- BENZENE UG/L	TOLUENE UG/L	ETHENE UG/L	NOTE D	NOTES:
7-D	07/10/87	3	AQUA	ND	ND	ND	17	ND	19	36	ND	ND	ND	ND	ND	250	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT
	07/10/87	4	AQUA	ND	ND	ND	16	ND	17	33	ND	ND	ND	ND	ND	250	SEE LAB REPORT FOR DETECTION LIMITS
	09/04/87	29	AQUA	ND	ND	ND	ND	ND	20	20	ND	14	ND	ND	ND	220	VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT
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GROUNDWATER QUALITY ANALYSIS																	
ORGANIC COMPOUNDS																	
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MONITOR WELLS																	
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SOUTH BEND, INDIANA																	
PROJECT # ALCHPX SBIN 007																	
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GEOTECHNICAL SERVICES																	
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PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE	UG/L	1,1-DI- CHLORO- ETHYLENE	UG/L	1,1,1- TRI- CHLORO- ETHANE	UG/L	1,1,1- TRI- CHLORO- ETHYLENE	UG/L	1,2-DI- CHLORO- ETHANE	UG/L	1,2-DI- CHLORO- ETHYLENE	UG/L	1,2-DI- CHLORO- PROPANE	UG/L	ETHYL- BENZENE	UG/L	TOLUENE	UG/L	NOTE D	NOTES:
8-D	107/10/87	5	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	720	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT
	109/04/87	30	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	900	VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT
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TABLE 5																							
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GROUNDWATER QUALITY ANALYSIS ORGANIC COMPOUNDS																							
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PAGE 20 OF 27 MONITOR WELLS																							
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GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX SBIN 007																							
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T A GLEASON ASSOCIATES =====																							
ENVIRONMENTAL AND GEOTECHNICAL SERVICES																							
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PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

BASE NEUTRAL COMPOUNDS

NOTES:

WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE	1,1-DI- CHLORO- ETHYLENE	1,2-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHYLENE	1,2-DI- CHLORO- PROPANE	1,2-DI- CHLORO- VINYL CHLORIDE	1,2-DI- CHLORO- FORM	TOLUENE	PHENOL	PHENOL FRACTION	ETHYLENE DIBROMIDE	ETHYLENE DIBROMIDE FRACTION	NOTE A BASE NEUTRAL	NOTE B BIS (2-ETHYLHEXYL)	NOTE C DI-N- OCTYL PHthalate	NOTE D CIS-1,2- DIBROMIDE	NOTES
2-0	12/18/86	2	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SEE LAB REPORT.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHthalate ESTERS.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SEE LAB REPORT.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SEE LAB REPORT.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GMS SCAN FOR PRIORITY POLLUTANT VOC.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SEE LAB REPORT.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	VOC RESULTS ARE A SUMMARY OF A GMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

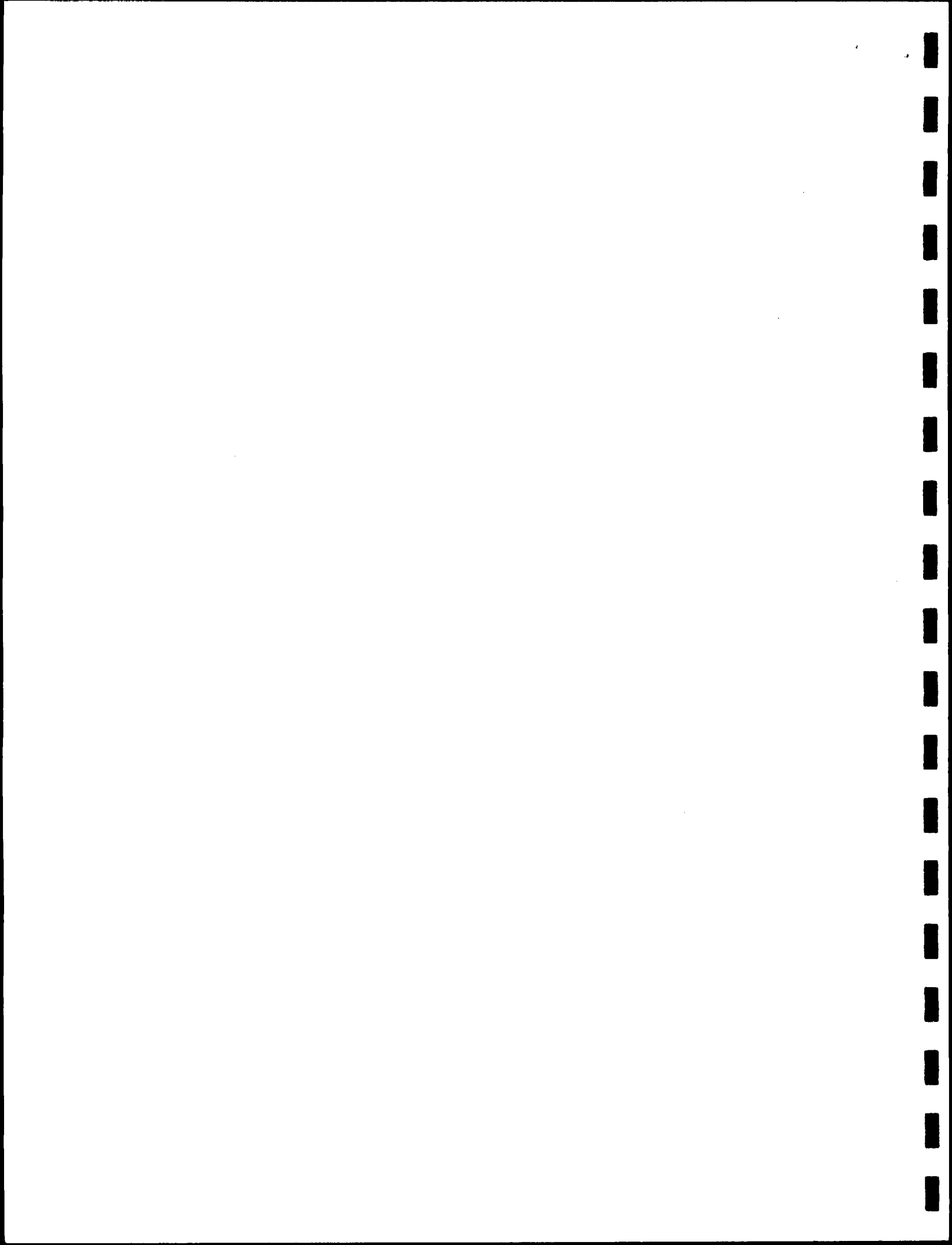
TABLE 5

GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
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GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX S81N 007

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services













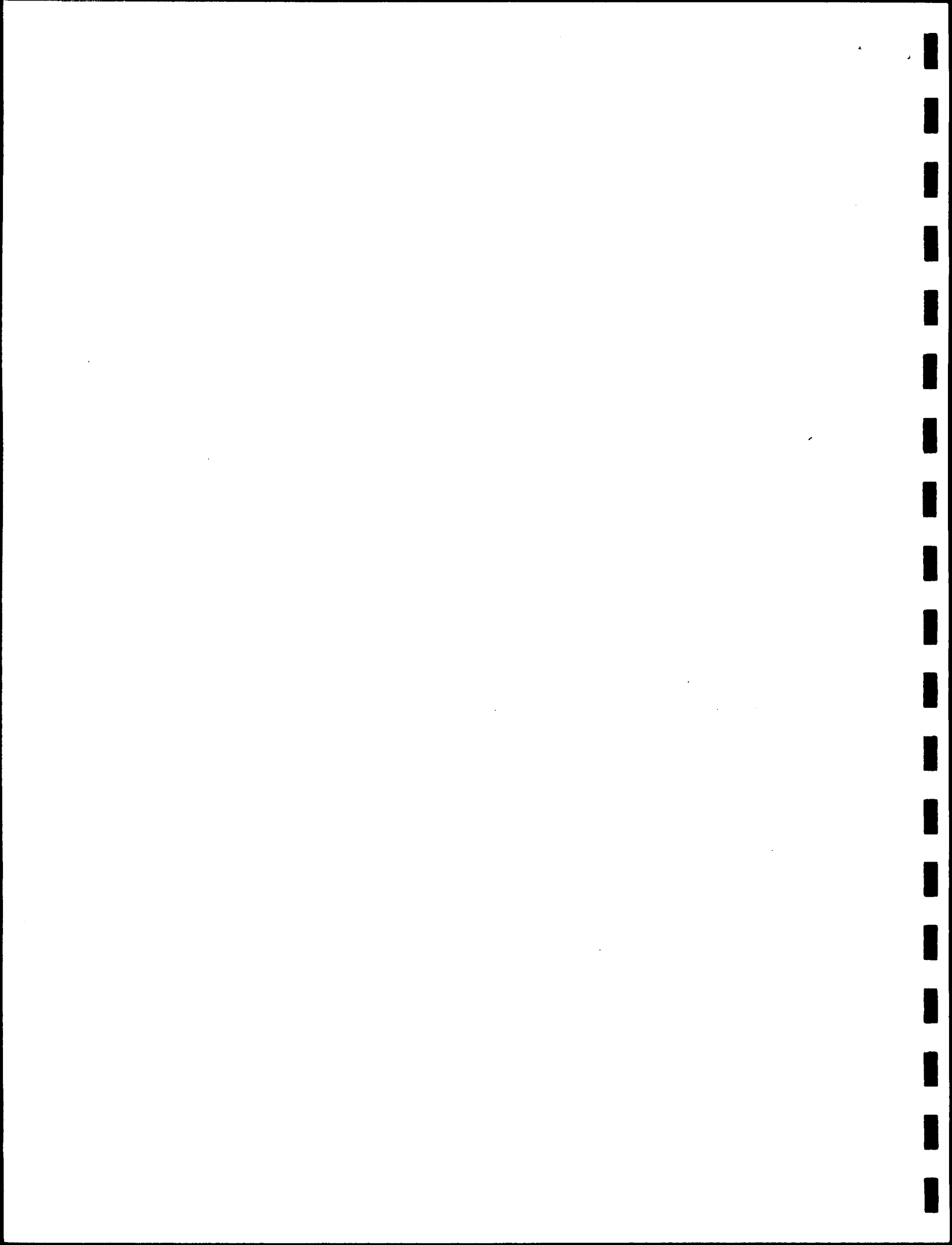




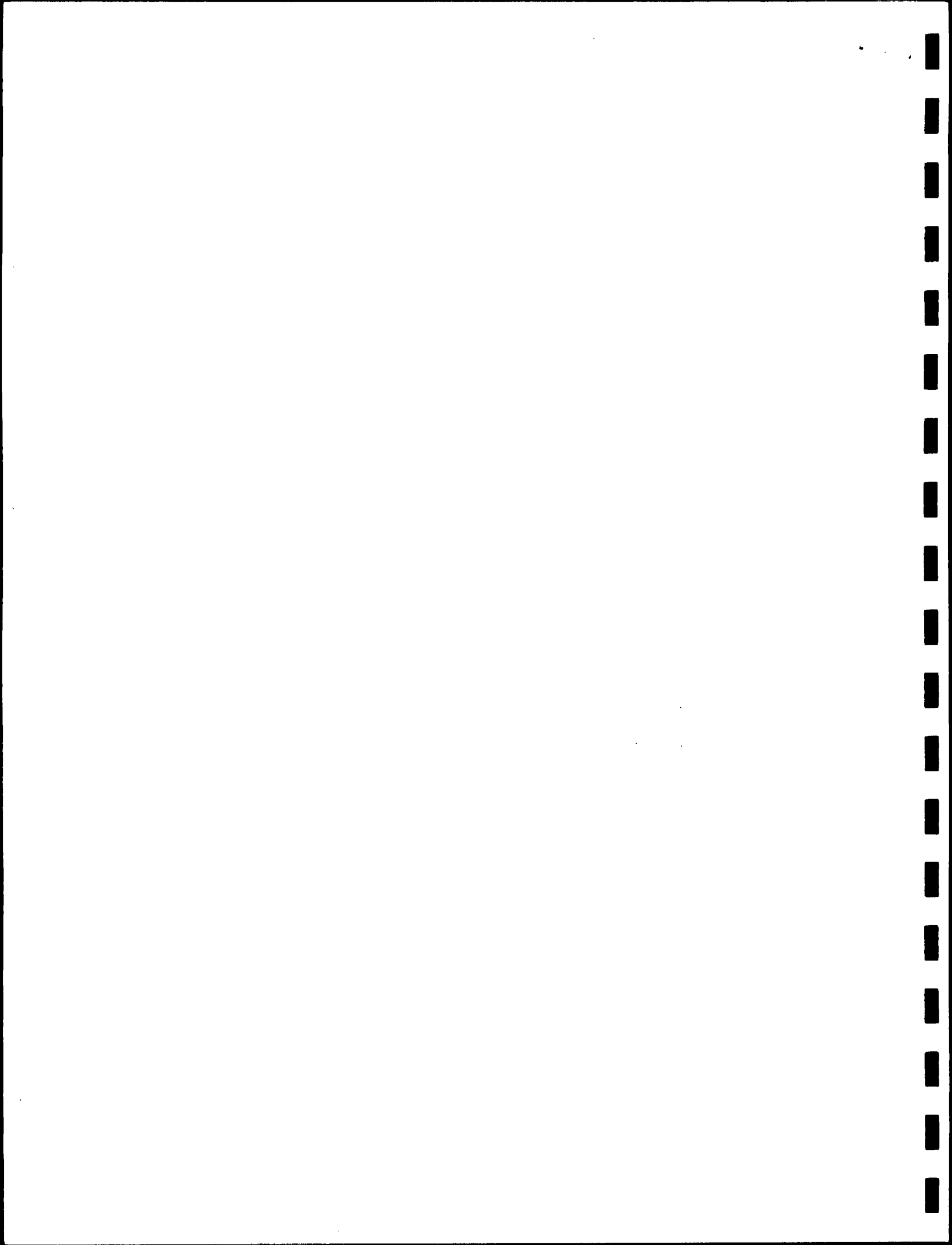
PRIORITY POLLUTANTS

WELL NO.	DATE	SAMPLE #	LAB	VOLATILE ORGANIC COMPOUNDS (VOC)				BASE NEUTRAL COMPOUNDS				NOTE D	NOTES:	
				1,1-DI- [CHLORO- ETHANE	1,2-DI- [CHLORO- ETHYLENE	TRI- [CHLORO- ETHYLENE	SUM	DI- [CHLORO- PROPANE	VINYL [CHLORO- FORM	PHthalate	PHthalate			DI-N- [OCTYL ACID
7-25	11/07/86	31	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS. SEE LAB REPORT.
	06/05/87	2	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHTHALATE ESTERS. SEE LAB REPORT.
	09/03/87	2	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION. SEE LAB REPORT.
														D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT.
														VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.
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TABLE 5														
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GROUNDWATER QUALITY ANALYSIS														
ORGANIC COMPOUNDS														
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GROUNDWATER INVESTIGATIONS														
ALLIED CORPORATION														
SOUTH BEND, INDIANA														
PROJECT # ALCMPX SBIN 007														
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T A GLEASON ASSOCIATES														
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Environmental and Geotechnical Services														
=====														













Bendix

Bendix Energy Controls Division  
717 North Bendix Drive  
South Bend, IN 46620

Bendix  
IND005461165



December 11, 1987

Mr. Glenn Pratt  
Office of Environmental  
Management  
105 South Meridian Street  
P. O. Box 6015  
Indianapolis, Indiana 46206-6015

DEC 17 1 33 PM '87  
DEPARTMENT  
OF  
ENVIRONMENTAL  
MANAGEMENT

Subject: Hydro-Geological Monitoring Applicable to the South Bend, Indiana Divisions of Allied-Signal Inc.

Dear Mr. Pratt:

Enclosed is a copy of the Groundwater Monitoring Quarterly Report for 3rd Quarter 1987, submitted by T. A. Gleason Associates. Allied-Signal has also submitted copies of the report to the City of South Bend, the United States Environmental Protection Agency and the St. Joseph County Health Department.

If we can be of assistance with respect to the report, please advise the undersigned.

Sincerely,

ALLIED-SIGNAL INC.  
Bendix Energy Controls Division

T. L. Moore  
Vice President & General Manager

TLM/ed

Enclosure

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DEPARTMENT  
OF  
ENVIRONMENTAL  
MANAGEMENT  
• Dec 17 10 35 AM '87

GROUNDWATER MONITORING REPORT  
3RD QUARTER 1987  
ALLIED CORPORATION  
BENDIX DIVISION  
SOUTH BEND, INDIANA

ALCMPX SBIN 007

DECEMBER 8, 1987

COPY # 7





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Table 6	Groundwater Quality Analysis Organic Compounds Recovery Wells



## 1.0 INTRODUCTION AND BACKGROUND

Presented herein are the results of the most recent groundwater sampling and groundwater elevation measurements performed at the Allied Corporation, Bendix Complex, South Bend, Indiana (Figure 1). These results are a continuation of the groundwater monitoring program initiated by Allied in 1981.

## 2.0 WATER LEVEL MEASUREMENTS

Water elevations were measured from 54 groundwater wells in and around the Bendix Complex on September 1, 1987 (see Figure 2). The measurements were made with an electronic water level indicator manufactured by Solinst Inc., Ontario Canada. All measurements were taken to the nearest .01 foot to a point on the well casings which have been surveyed to obtain a reference elevation. The new monitor wells and most of the existing monitor wells were surveyed by Lang, Feeney & Assoc., Inc. during September 1987 to verify the reference elevations.

Water level measurements and the calculated water elevations are presented in Table 1.

## 3.0 WELL SAMPLING

Thirty wells were sampled on September 3 and 4, 1987. Table 2 presents a summary of the wells sampled and the parameters analyzed for. As shown in Table 2, twenty-six monitor wells and four recovery wells were sampled. Recovery well E-3 was inoperative at the time and was not sampled. We recommend that the seven recently installed monitor wells (see Figure 2) be incorporated into the quarterly monitoring program.





### 3.1 PURGING

Prior to sampling, the water level and total well depth were measured and the well volume was calculated. Three to five well volumes were then removed from each monitor well using a centrifugal pump connected to a section of dedicated polyethylene purging tube, or to the water outlet side of the dedicated bladder pumps. The bladder pump was used to purge the low yielding wells. The recovery well taps were allowed to run approximately five minutes prior to sample collection.

### 3.2 SAMPLING

Monitor well samples were obtained from each well using either a dedicated bladder pump or PVC bailer. The bailer was carefully lowered into and withdrawn from the well to avoid agitation of the samples. Well samples were collected directly from a tap on the outlet pipe from the wells in which a bladder pump had been installed, and on the recovery wells.

In addition, as part of our Quality Assurance Procedures, duplicate samples were taken at monitor wells D7 and S-15 and a field blank was prepared and submitted for analysis with the samples collected. Samples were measured in the field for pH, Specific Conductivity and Temperature.

### 3.3 SAMPLE HANDLING

Appropriate EPA-approved containers for the above mentioned parameters were obtained from Aqua Tech Environmental Consultants, Inc., Melmore, Ohio. In addition, the containers for metals, cyanide and phenols contained the required



preservatives. All samples for metals analysis including the field blank were filtered through a .45 micron cellulose filter prior to being placed in the sample containers. All samples were placed in insulated coolers with ice packs immediately after collection and shipped directly to Aqua Tech with the completed chain of custody forms.

#### 4.0 ANALYTICAL PROCEDURES AND RESULTS

Aqua Tech Laboratories performed analysis on all samples in accordance with USEPA analytical protocols.

The results of the analyses for metals (chromium, lead and zinc), cyanide and phenols are presented in Table 3 and 4. The results of the analyses for volatile organic compounds are summarized in Tables 5 and 6.

The laboratory results are maintained in our files and are available upon request.



(1) WELL NO.	09/01/87			06/06/87			06/04/87	
	REFERENCE ELEVATION	WATER DEPTH	WATER ELEVATION	REFERENCE ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION
S-1	728.09	25.61	702.48	726.22	NM		25.17	701.05
S-2	721.82	20.90	700.92	721.76	NM		20.62	701.14
S-3	716.65	20.16	696.49	716.61	20.25	696.36	20.27	696.34
S-5	712.83	14.30	698.53	713.12	14.25	698.87	14.27	698.85
S-6	713.08	16.24	696.84	715.44	NM		NM	
S-7	716.16	17.92	698.24	716.52	17.80	698.72	17.80	698.72
S-8	714.65	18.56	696.09	714.60	18.67	695.93	18.70	695.90
S-9	714.17	17.51	696.66	713.30	17.59	695.71	17.60	695.70
S-10		NM		715.40	NM		NM	
S-11		NM		715.64	NM		NM	
S-12	721.45	20.43	701.02	721.23	20.15	701.08	20.13	701.10
S-13		NM		721.10	NM		NM	
S-14	711.86	15.60	696.26	711.89	NM		15.64	696.25
S-15	714.37	18.47	695.90	714.29	18.55	695.74	18.59	695.70
S-16	716.18	18.73	697.45	716.14	18.85	697.29	18.86	697.28
S-17	716.97	19.11	697.86	717.00	NM		NM	
S-18	715.41	16.91	698.50	715.44	16.81	698.63	16.85	698.59
S-19	723.38	20.79	702.59	723.16	NM		NM	
S-20	709.97	14.32	695.65	710.00	15.34	694.66	15.39	694.61
S-21	711.33	15.53	695.80	711.37	NM		16.65	694.72
S-22	709.33	14.06	695.27	709.36	NM		14.03	695.33
S-23	710.24	15.93	694.31	710.53	NM		16.50	694.03
S-24	713.03	16.19	696.84					
S-25	710.60	15.37	695.23					
S-26	714.50	17.53	696.97					
S-27	715.40	18.58	696.82					
D-1		NM		720.73	NM		NM	
D-1A		NM		721.69	NM		NM	
D-3	714.51	18.50	696.01	714.45	NM		NM	
D-4	717.85	21.07	696.78	717.88	NM		NM	
D-5	712.14	15.75	696.39	712.07	NM		NM	
D-7	713.83	16.83	697.00	713.74	NM		NM	
D-8	717.04	19.91	697.13	717.07	NM		NM	
D-9		NM		717.00	NM		NM	
D-10	716.53	18.17	698.36	716.69	NM		NM	
D-11	723.47	20.91	702.56	723.24	NM		NM	
D-12	710.29	23.04	687.25	710.35	NM		NM	
I-1	711.52	16.25	695.27	711.58	NM		NM	
1-D	714.17	16.67	697.50	714.19	NM		NM	
2-D		NM		715.36	NM		NM	
3-D		NM		713.29	NM		NM	
4-D	712.10	22.90	689.20	712.12	NM		NM	
5-D	712.01	24.35	687.66	714.43	NM		NM	
6-D	711.41	24.12	687.29	713.37	NM		NM	
7-D	714.85	18.25	696.60					
8-D	714.56	17.59	696.97					

NOTES:

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

1 = SURVEYED BY LANG, FEENEY & ASSOC., INC. 9/87. WATER ELEVATIONS PRIOR TO JULY 1987 ARE BASED ON FORMER REFERENCE ELEVATIONS.

TABLE 1

WATER LEVEL MEASUREMENTS

PAGE 1 OF 2

GROUNDWATER INVESTIGATIONS  
ALLIED COMPLEX  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX

T A GLEASON ASSOCIATES  
ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES



WELL NO.	09/01/87			06/06/87			06/04/87		NOTES:
	(1) REFERENCE ELEVATION	WATER DEPTH	WATER ELEVATION	REFERENCE ELEVATION	WATER DEPTH	WATER ELEVATION	WATER DEPTH	WATER ELEVATION	
86-1		NM		715.70	NM			NM	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  1 = SURVEYED BY LANG, FEENEY & ASSOC., INC. 9/87. WATER ELEVATIONS PRIOR TO JULY 1987 ARE BASED ON FORMER REFERENCE ELEVATIONS.
86-2		NM		714.98	NM		18.42	696.56	
86-4		NM		715.09	NM		18.44	696.65	
86-5		NM		715.04	NM		18.40	696.64	
86-6		NM			17.12		17.18		
86-7	714.15	16.57	697.58	714.27	16.67	697.60	16.70	697.57	
86-8		NM		714.62	17.07	697.55	17.12	697.50	
86-9		NM		715.25	17.73	697.52		NM	
86-10	715.06	17.43	697.63	715.06	17.54	697.52	17.58	697.48	
86-11		NM		715.14	17.65	697.49	17.72	697.42	
86-12		NM		715.71	18.22	697.49	18.28	697.43	
86-13	714.75	17.25	697.50	714.75	17.41	697.34	17.44	697.31	
86-14		NM		715.05	17.36	697.69	17.42	697.63	
86-15		NM		715.06	17.23	697.83	17.26	697.80	
86-18	714.84	18.43	696.41	714.84	18.46	696.38		NM	
86-19	714.33	16.62	697.71	714.33			16.78	697.55	
86-20		NM		713.07				NM	
86-21		NM		713.76			16.16	697.60	
7-25	720.47	21.09	699.38	720.38	20.78	699.60	20.65	699.73	
7-50	719.83	20.52	699.31	719.84				NM	
8-27		NM		715.45				NM	
9-33	716.69	18.67	698.02	716.57	18.38	698.19	18.42	698.15	
RWB-6	715.80	19.30	696.50	715.80				NM	
RWB-16	715.30	18.41	696.89	715.30				NM	
RWB-21	717.62	21.42	696.20	717.62				NM	
RWB-22	715.11	18.70	696.41	715.11				NM	
RWE-3	714.50	18.06	696.44	714.50				NM	

TABLE 1

WATER LEVEL MEASUREMENTS

PAGE 2 OF 2

GROUNDWATER INVESTIGATIONS  
ALLIED COMPLEX  
SOUTH BEND, INDIANA  
PROJECT # ALCPX

T A GLEASON ASSOCIATES

ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES





TABLE 2 - SAMPLE SUMMARY

<u>Quarterly Sampling Wells</u>	<u>Recently Installed Wells</u>	<u>Existing Recovery Wells</u>
S-1	S-4 A	RWB-21
S-3	7-D	RWB-6
S-9	8-D	RWB-22
S-14	S-25	RWB-16
S-15	S-26	E-3 (Inoperable)
S-16	S-27	
S-17	S-24	
S-20		
S-21		
S-22		
2-23		
D-4		
D-7		
1D		
2D		
4D		
5-D		
7-25		
9-33		
<u>Parameters</u>	<u>Parameters</u>	<u>Parameters</u>
VOC (624)	VOC (624)	VOC (624)
Cyanide	Cyanide	
Phenols	Phenols	
Chrome	Chrome	
Lead	Lead	
Zinc	Zinc	



WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L	
D-4	109	10/01/86	AQUA	870																		
	309	10/01/86	AQUA				<6	<4	<1	<1	<10	4	30	<0.3	<10	10	<4		9280			
	13	02/12/87	AQUA	600		11					<10		53						5280			
	8	06/05/87	AQUA	750	8.18	16				<5*		26*							20*	.098	1.33	
	8	09/03/87	AQUA	725	8.15	15				<10*		<3*							44*	<0.005	0.729	
<p>NOTES:</p> <p>OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.</p> <p>&lt; = LESS THAN</p> <p>*METAL FILTERED THRU .45 MICRON FILTER</p> <p>BLANK SPACE INDICATES NOT ANALYZED FOR</p>																						
<p>=====</p> <p>TABLE 3</p> <p>=====</p> <p>GROUNDWATER QUALITY ANALYSIS</p> <p>METALS, CYANIDE AND PHENOLS</p> <p>PAGE 1 OF 27</p> <p>MONITOR WELLS</p> <p>GROUNDWATER INVESTIGATIONS</p> <p>ALLIED CORPORATION</p> <p>SOUTH BEND, INDIANA</p> <p>PROJECT ALCHPX SBIN 007</p> <p>T A GLEASON ASSOCIATES</p> <p>Environmental and Geotechnical Services</p>																						



SPECIFIC		CONDUCTANCE	PH	TEMP	SU	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS		
WELL NO.	SAMPLE #	DATE	LAB			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	MG/L	MG/L	
D-7	108	10/01/86	AQUA	1110																		
	308	10/01/86	AQUA			<6	4	<1	20	10	11	<0.3	<20	<4	<10		320					
	26	11/06/86	AQUA			<3	4	<1	<10	4	3	<0.3	<10	<8	<4	<3	28	<0.01	0.011			
	9	06/05/87	AQUA	800	8.31	16			<5*		9*						10*	0.031	0.233			
	10	06/05/87	AQUA	800	8.31	16			<5*		<3*						<10*	0.041	0.228			
	17	09/03/87	AQUA	850	7.97	15			<10*		<3*						<8*	<0.005	0.369			
	18	09/03/87	AQUA	850	7.97	15			<10*		<3*						4*	<0.005	0.400			

NOTES:

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

< = LESS THAN

\*METAL FILTERED THRU .45 MICRON FILTER

BLANK SPACE INDICATES NOT ANALYZED FOR

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TABLE 3

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GROUNDWATER QUALITY ANALYSIS

METALS, CYANIDE AND PHENOLS

PAGE 2 OF 27

MONITOR WELLS

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GROUNDWATER INVESTIGATIONS

ALLIED CORPORATION

SOUTH BEND, INDIANA

PROJECT ALCHPX SBIN 007

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T A GLEASON ASSOCIATES

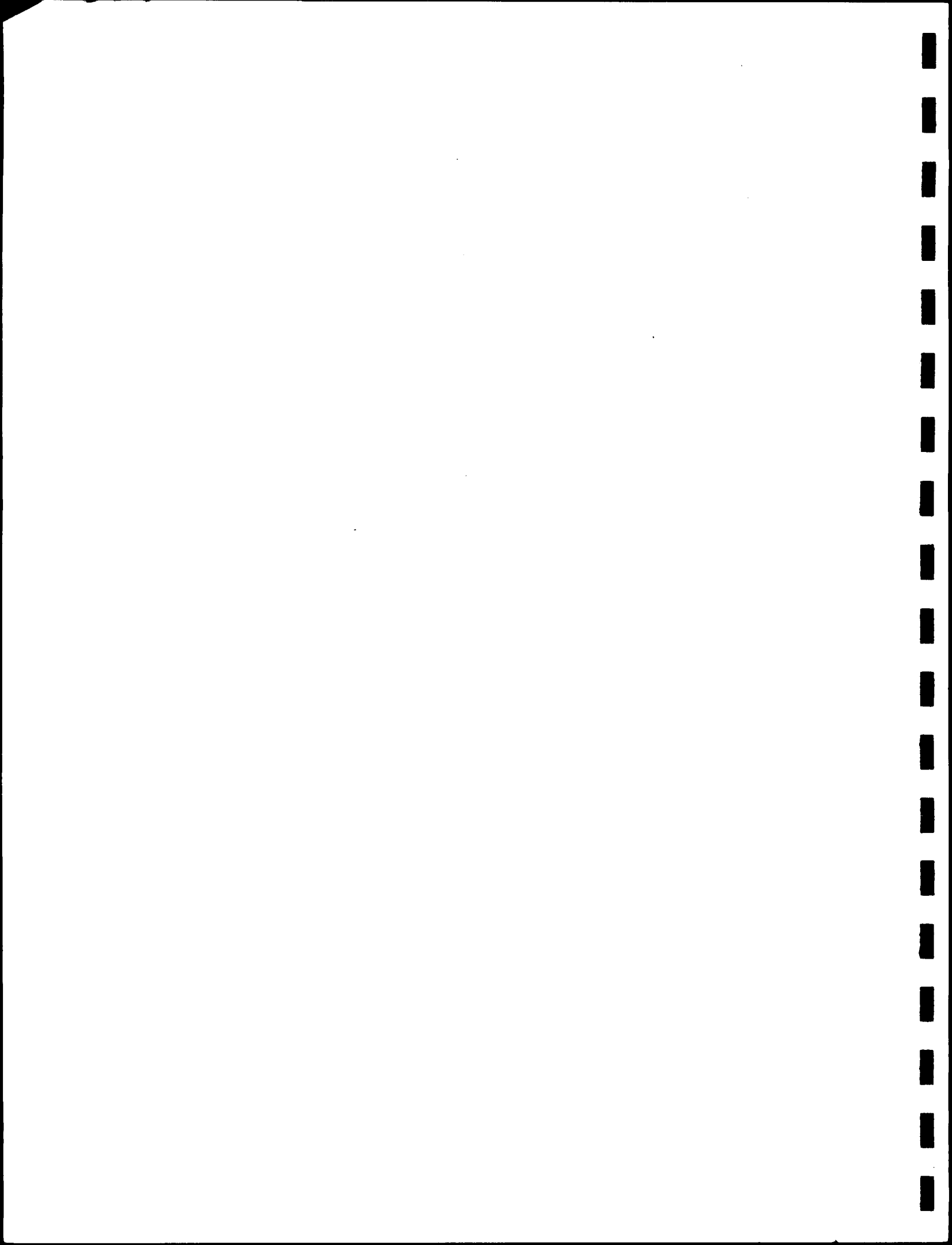
Environmental and Geotechnical Services

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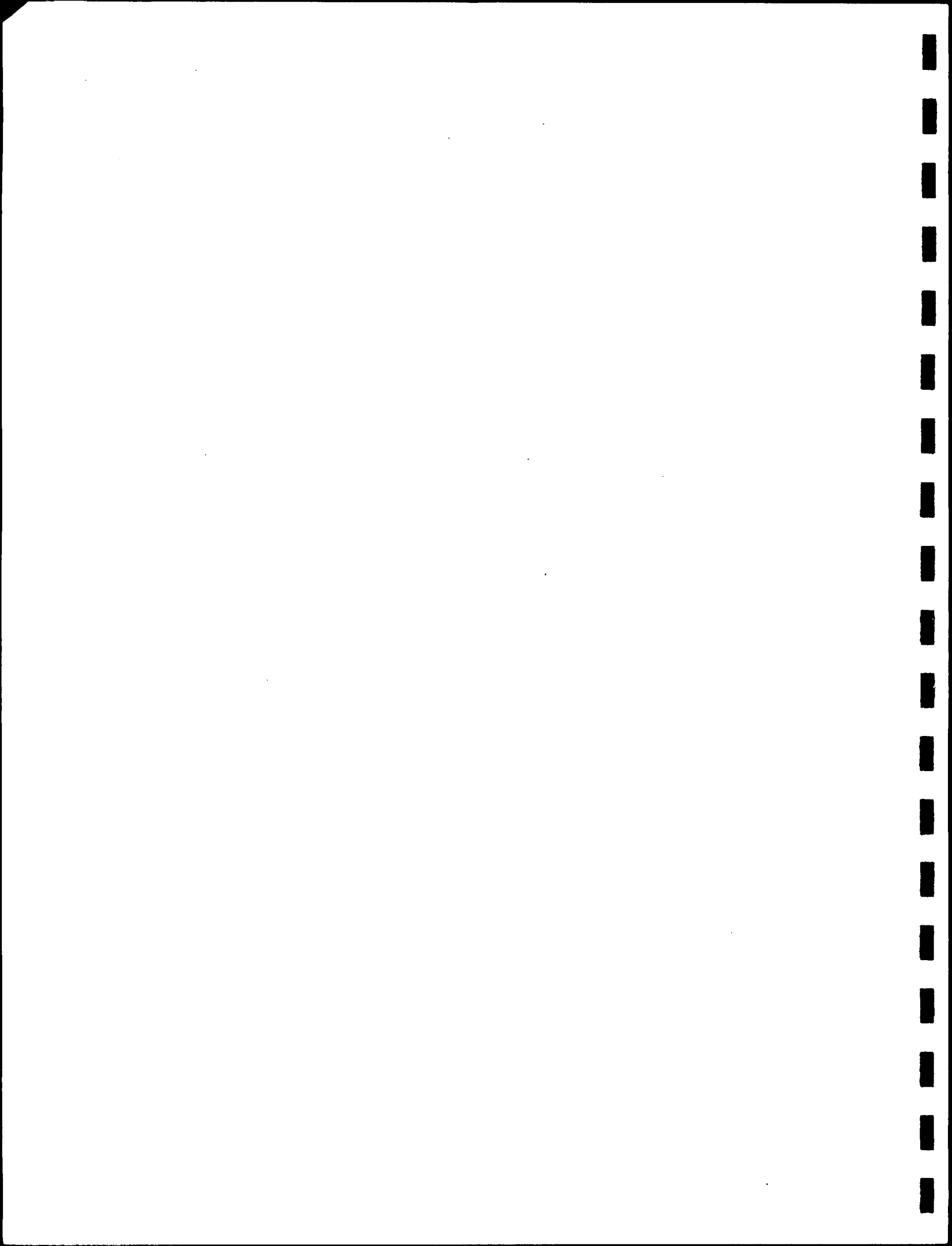
















SPECIFIC		PH	TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES:	
WELL NO.	SAMPLE #	DATE	LAB	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	MG/L	MG/L	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.	
																			< = LESS THAN	
S-9	110	10/01/86	AQUA	1775																
	130	10/01/86	AQUA		<6	<4	<1	<20	130	33	<0.3	<20	<4	<10		930				*METALS FILTERED THRU .45 MICRON FILTER
	4	11/01/86	AQUA		<3	<4	<1	20	88	15	<0.3	16	<12	<4	<3	500	<0.01	<0.010		
	20	12/18/86	AQUA		<3	<4	2	<10	28	<10	<0.3	<10	<8	<4	<24	120	<0.010	<0.010		BLANK SPACE INDICATES NOT ANALYZED FOR
	30	12/18/86	AQUA		<3	<4	<1	<10	4	<10	<0.3	<10	<8	<4	<18	8	<0.010	<0.010		
	7	06/05/87	AQUA	1800				<5*		<3*						10*	0.014	0.049		
	9	09/03/87	AQUA	1725				<10*		<3*						12*	<0.005	<0.010		
																				=====
																				TABLE 3
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																				GROUNDWATER QUALITY ANALYSIS
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																				SOUTH BEND, INDIANA
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SPECIFIC CONDUCTANCE	PH	TEMP	ANTHRONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES:
UMHOS/CH	SU	C	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	MG/L	MG/L	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
21			<3	<4	<1	1	<10	40	16	<0.3	16	<8	<4	<3	370	<0.01	<0.010	
5	1400	7.39					<5*		<3*						10*	0.048	<0.01	*METALS FILTERED THRU .45 MICRON FILTER
7	1400	7.28					<10*		<3*						48*	<0.005	<0.010	BLANK SPACE INDICATES NOT ANALYZED FOR
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TABLE 3																		
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GROUNDWATER QUALITY ANALYSIS																		
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PROJECT ALCHPX SBIN 007																		
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Environmental and Geotechnical Services																		





WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEHP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES	
					SU	C	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	MG/L	MG/L	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
S-15	27	11/06/86	AQUA				<6	<4	<1	<1	16	48	16	<0.3	16	<12	<4	<3	120	<0.01	<0.010		
	23	12/18/86	AQUA				<3	<4	<1	<10	20	20	<15	<0.3	16	<4	8	<15	48	<0.010	<0.010		*METALS FILTERED THRU .45 MICRON FILTER
	6	06/05/87	AQUA	1700	7.27	16				<5*			<3*						10*	0.041	0.010		BLANK SPACE INDICATES NOT ANALYZED FOR
	5	09/03/87	AQUA	1625	7.18	15				<10*			<3*						4*	<0.005	<0.010		
	6	09/03/87	AQUA	1625	7.18	15				<10*			<3*						12*	<0.005	<0.010		
TABLE 3																							
GROUNDWATER QUALITY ANALYSIS																							
METALS, CYANIDE AND PHENOLS																							
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Environmental and Geotechnical Services																							



SPECIFIC		PH	TEMP	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES:
WELL NO.	SAMPLE #	DATE	LAB	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	MG/L	MG/L	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
S-16	11	11/06/86	AQUA	<6	<4	<1	<1	<10	310	65	<0.3	12	<16	<4	<3	220	<0.01	0.060	
	19	12/18/86	AQUA	<6	<4	<1	1	<10	52	<10	<0.3	12	<8	4	<9	52	<0.010	<0.010	
	29	12/18/86	AQUA	<3	<4	<1	1	<10	4	<9	0.4	<10	<8	4	<9	4	<0.010	<0.010	*METALS FILTERED THRU .45 MICRON FILTER
	11	02/12/87	AQUA					<10		13						40			BLANK SPACE INDICATES NOT ANALYZED FOR
	12	06/05/87	AQUA					<5*		7*						20*	0.070	<0.010	
	28	09/04/87	AQUA					<10*		4*						40*	0.012	0.017	
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TABLE 3																			
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GROUNDWATER QUALITY ANALYSIS																			
METALS, CYANIDE AND PHENOLS																			
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PROJECT ALCHPX S81N 007																			
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T A GLEASON ASSOCIATES																			
Environmental and Geotechnical Services																			
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WELL NO.	SAMPLE #	DATE	LAB	S-17	PH	TERP C	ANTHRONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	CONDUCTANCE	SPECIFIC	NOTES:
16		11/06/86	AQUA				<3	<4	<1	<1	<10	12	23	<0.3	20	<24	<4	<3	150	<0.01	0.025			OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
15		06/05/87	AQUA		7.55	15			<5*				<3*						<10*	0.024	<0.010			< = LESS THAN
20		09/03/87	AQUA		7.62	15			<10*				<3*						4*	<0.005	0.426			*METALS FILTERED THRU .45 MICRON FILTER
																								BLANK SPACE INDICATES NOT ANALYZED FOR
																								GROUNDWATER QUALITY ANALYSIS METALS, CYANIDE AND PHENOLS
																								PAGE 10 OF 27 MONITOR WELLS
																								GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT ALCHPX SBIN 007
																								T A GLEASON ASSOCIATES Environmental and Geotechnical Services

TABLE 3













WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES
S-22	18	11/06/86	AQUA				<3	<4	<1	<1	12	<4	5	<0.3	<10	<40	4	<3	28	<0.01	<0.010	
	20	06/05/87	AQUA	1000	7.64	13			<5*				<3*						10*	0.063	0.018	*METALS FILTERED THRU .45 MICRON FILTER
	12	09/03/87	AQUA	1050	7.51	14			<10*				<3*						8*	<0.005	0.133	BLANK SPACE INDICATES NOT ANALYZED FOR

TABLE 3

GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS

PAGE 13 OF 27  
MONITOR WELLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCHPX SBN 007

T A GLEASON ASSOCIATES

Environmental and  
Geotechnical Services



WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP	ANTHRONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES	
				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	MG/L	MG/L	
S-23	19	11/06/86	AQUA	<3	<4	<1	1	12	8	34	<0.3	<10	<16	4	<3	120	<0.01	<0.010					OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
	21	06/05/87	AQUA	1000	7.59	13	<5*	<5*	<3*	<3*									10*	0.032	0.242	*METALS FILTERED THRU .45 MICRON FILTER	
	1813	09/03/87	AQUA	1000	7.27	14	<10*	<10*	<3*	<3*									8*	0.009	0.640	BLANK SPACE INDICATES NOT ANALYZED FOR	
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TABLE 3																							
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METALS, CYANIDE AND PHENOLS																							
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T A GLEASON ASSOCIATES																							
Environmental and Geotechnical Services																							
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SPECIFIC CONDUCTANCE

PH	6.96	14	TEHP		ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	
SU		C			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	MG/L	MG/L

WELL NO.	25	DATE	09/04/87	AQUA	1350	6.96	14														
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S-24																						
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NOTES: OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
< = LESS THAN  
\*METALS FILTERED THRU .45 MICRON FILTER  
BLANK SPACE INDICATES NOT ANALYZED FOR

TABLE 3  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE AND PHENOLS  
PAGE 15 OF 27  
MONITOR WELLS  
GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT ALCMPX S81N 007  
T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services





SPECIFIC	CONDUCTANCE	PH	TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENDOLS
CONDUCTANCE	PH	TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENDOLS	
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	MG/L	MG/L
S-25	11	09/03/87	AQUA	1100	7.17	16	<10*	<3*							12*	<0.005	<0.010	
NOTES: OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS. < = LESS THAN *METALS FILTERED THRU .45 MICRON FILTER BLANK SPACE INDICATES NOT ANALYZED FOR TABLE 3 GROUNDWATER QUALITY ANALYSIS METALS, CYANIDE AND PHENDOLS PAGE 16 OF 27 MONITOR WELLS GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT ALCHPX SBIN 007 T A GLEASON ASSOCIATES Environmental and Geotechnical Services																		



SPECIFIC	CONDUCTANCE	PH	TEMP	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS		
CONC.				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-26	1100	7.22	16							<3*						4*	<0.005	<0.010		
WELL NO.	SAMPLE #	DATE	LAB																	

NOTES:

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

< = LESS THAN

\*METALS FILTERED THRU .45 MICRON FILTER

BLANK SPACE INDICATES NOT ANALYZED FOR

TABLE 3

GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE AND PHENOLS

PAGE 17 OF 27  
MONITOR WELLS

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCHPX S81N 007

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



SPECIFIC		CONDUCTANCE															NOTES:					
WELL NO.	SAMPLE #	DATE	LAB	PH	TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.	
S-27	26	09/04/87	AQUA	1350	6.97	14	<10*	4*	<0.005	<0.010	40*	<0.005	<0.010									< = LESS THAN
*METALS FILTERED THRU .45 MICRON FILTER  BLANK SPACE INDICATES NOT ANALYZED FOR  TABLE 3  GROUNDWATER QUALITY ANALYSIS METALS, CYANIDE AND PHENOLS  PAGE 18 OF 27 MONITOR WELLS  GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT ALCHPX SBIN 007  T A GLEASON ASSOCIATES Environmental and Geotechnical Services																						



WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP C	SULPHUR DIOXIDE	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES
7-25	31	11/07/86	AQUA					<6	5	<1	2	12	40	66	<0.3	24	<12	<4	<6	120	0.01	<0.010	
	20A	02/12/87	AQUA	700		10					16			300						170			*METALS FILTERED THRU .45 MICRON FILTER
	20B	02/12/87	AQUA								<10*			3*						12*			
	2	06/05/87	AQUA	600	7.31	12					<5*			<3*						10*	0.026	<0.010	BLANK SPACE INDICATES NOT ANALYZED FOR
	2	09/03/87	AQUA	600	7.51	13					<10*			<3*						<4*	<0.005	<0.010	
=====																							
TABLE 3																							
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GROUNDWATER QUALITY ANALYSIS																							
METALS, CYANIDE AND PHENOLS																							
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PAGE 19 OF 27																							
MONITOR WELLS																							
=====																							
GROUNDWATER INVESTIGATIONS																							
ALLIED CORPORATION																							
SOUTH BEND, INDIANA																							
PROJECT ALCHPX S81N 007																							
=====																							
T A GLEASON ASSOCIATES																							
Environmental and																							
Geotechnical Services																							
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SPECIFIC		PH	TEMP	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHEOLS	
CONDUCTANCE		SU	C	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	
WELL NO.	SAMPLE #	DATE	LAB																
9-33	11	01/08/87	AQUA	<50	11	6	2	170	160	69	0.6	220	<80	<4	<1	840			
	19A	02/12/87	AQUA				844			125						210			
	19B	02/12/87	AQUA				<10*			<3*						12*			
	3	06/05/87	AQUA				<5*			4*						10*	0.014	<0.010	
	3	09/03/87	AQUA				<10*			<3*						<4*	<0.005	<0.100	

NOTES:  
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
< = LESS THAN

\*METALS FILTERED THRU .45 MICRON FILTER  
BLANK SPACE INDICATES NOT ANALYZED FOR

TABLE 3  
GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE AND PHEOLS  
PAGE 20 OF 27  
MONITOR WELLS  
GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCPX SBIN 007  
T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services

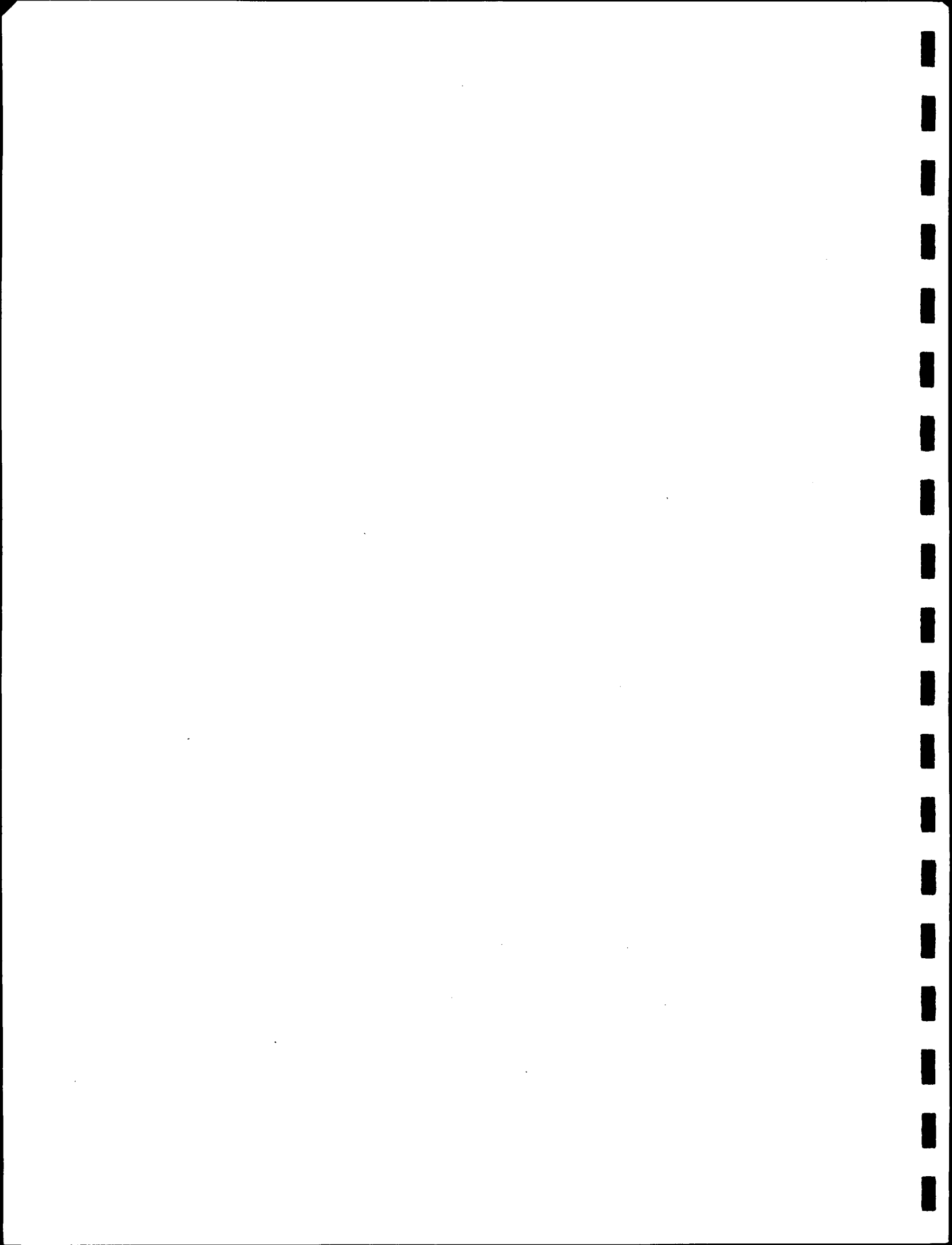


WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP C	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L
1-D	13	01/09/87	AQUA				<1	<8	<0.4	3	40	<4	240	<0.3	12	<4	<4	<1	44		
	1	02/12/87	AQUA	1300		11					18		52						14		
	13	06/05/87	AQUA	1250	7.62	13				<5*			5*						20*	0.022	<0.010
	22	09/04/87	AQUA	1200	7.71	14				20*			39*						160*	0.009	0.048
*****																					
TABLE 3																					
*****																					
GROUNDWATER QUALITY ANALYSIS																					
METALS, CYANIDE AND PHENOLS																					
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MONITOR WELLS																					
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GROUNDWATER INVESTIGATIONS																					
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SOUTH BEND, INDIANA																					
PROJECT ALCHPX S81H 007																					
*****																					
T A GLEASON ASSOCIATES																					
Environmental and Geotechnical Services																					
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NOTES:  
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
< = LESS THAN

\*METALS FILTERED THRU .45 MICRON FILTER

BLANK SPACE INDICATES NOT ANALYZED FOR



WELL NO.	SAMPLE #	DATE	LAB	PH	TEMP C	ANTHONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L	NOTES:
2-0	2	12/18/86	AQUA			<6	7	<1	<1	<10	16	20	<0.3	16	<8	<4	<9	120			
	11	06/05/87	AQUA	7.69	17				<3*									*10	0.013	<0.010	*METALS FILTERED THRU .45 MICRON FILTER
	19	09/03/87	AQUA	7.81	15				<10*									12*	<0.005	0.722	BLANK SPACE INDICATES NOT ANALYZED FOR
=====																					
TABLE 3																					
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GROUNDWATER QUALITY ANALYSIS																					
METALS, CYANIDE AND PHENOLS																					
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GROUNDWATER INVESTIGATIONS																					
ALLIED CORPORATION																					
SOUTH BEND, INDIANA																					
PROJECT ALCHPX SBIN 007																					
=====																					
T A GLEASON ASSOCIATES																					
=====																					
Environmental and Geotechnical Services																					



WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP	SU	C	ANTHONY ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES:
							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	
4-D	129	10/14/86	AQUA																				OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  < = LESS THAN
	329	10/14/86	AQUA				<6	4	<1	2	<20	30	7	<0.3	30	<4	<10	<3					%METALS FILTERED THRU .45 MICRON FILTER
	14	06/06/87	AQUA	1200	7.67	16					<5*			<3*						20*	0.030	0.016	BLANK SPACE INDICATES NOT ANALYZED FOR
TABLE 3																							
GROUNDWATER QUALITY ANALYSIS																							
METALS, CYANIDE AND PHENOLS																							
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T A GLEASON ASSOCIATES																							
Environmental and Geotechnical Services																							





WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES	
					SU	C	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	MG/L	MG/L	
5-D	4	12/18/86	AQUA				<6	<4	<1	<1	<10	8	<6	<0.3	<10	<16	4	<12	52				OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
	5	12/18/86	AQUA				<6	<1	<1	2	<10	8	<6	<0.3	<10	<16	<4	<9	40				
	19	06/05/87	AQUA	1000	7.90	14					<5*		<3*						10*	0.013	<0.010		
	15	09/03/87	AQUA	950	7.81	13				<10*			<3*						16*	<0.005	<0.010		
																							BLANK SPACE INDICATES NOT ANALYZED FOR
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TABLE 3																							
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GROUNDWATER QUALITY ANALYSIS																							
METALS, CYANIDE																							
AND PHENOLS																							
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GROUNDWATER INVESTIGATIONS																							
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PROJECT ALCMPX SBIN 007																							
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T A GLEASON ASSOCIATES																							
Environmental and																							
Geotechnical Services																							



SPECIAL INSTRUCTIONS	SPECIFIC CONDUCTANCE	PH	TEMP	ANTHRONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES	
WELL NO.	SAMPLE #	DATE	LAB	U/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	MG/L	MG/L		
7-D	29	09/04/87	AQUA	1100	7.17	16	<10*	<3*	<0.01	24*	<0.01	<0.010								*METALS FILTERED THRU .45 MICRON FILTER  BLANK SPACE INDICATES NOT ANALYZED FOR
=====																				
TABLE 3																				
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GROUNDWATER QUALITY ANALYSIS																				
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=====																				
T A GLEASON ASSOCIATES																				
Environmental and Geotechnical Services																				
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WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP C	SU	ANTHRONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	
								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	MG/L	MG/L
8-D	30	09/04/87	AQUA	1300	7.29	16				<10*				<3*						28*	0.014	<0.010	
<p>NOTES:</p> <p>OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.</p> <p>&lt; = LESS THAN</p> <p>*METALS FILTERED THRU .45 MICRON FILTER</p> <p>BLANK SPACE INDICATES NOT ANALYZED FOR</p>																							
<p>TABLE 3</p> <p>GROUNDWATER QUALITY ANALYSIS</p> <p>METALS, CYANIDE AND PHENOLS</p> <p>PAGE 26 OF 27</p> <p>MONITOR WELLS</p> <p>GROUNDWATER INVESTIGATIONS</p> <p>ALLIED CORPORATION</p> <p>SOUTH BEND, INDIANA</p> <p>PROJECT ALCHPX SBIN 007</p> <p>T A GLEASON ASSOCIATES</p> <p>Environmental and Geotechnical Services</p>																							



SPECIFIC CONDUCTANCE	PH	TEMP C	ANTHRONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE MG/L	PHENOLS MG/L	NOTES:
28				<3	<4	<1	<10	88	<3	<0.3	12	<4	<4	4	<0.01	0.023	
25				<3	<4	<1	<10	4	4	<0.3	<10	<4	<4	6	0.035	<0.010	*METALS FILTERED THRU .45 MICRON FILTER
24				<3	<4	<1	<10	4	<3	0.3	4	<4	<4	4	<0.010		BLANK SPACE INDICATES NOT ANALYZED FOR
12				<1	<4	<0.4	<1	<4	<3	<0.3	<10	4	<4	<1	<4		
23							<10		<3					8			
							<10		<3					4			
23							<5*		<3*					<10*	0.029	<0.010	
36							<10*		<3*					4	<0.005	<0.010	TABLE 3
GROUNDWATER QUALITY ANALYSIS																	
METALS, CYANIDE AND PHENOLS																	
PAGE 27 OF 27																	
MONITOR WELLS																	
GROUNDWATER INVESTIGATIONS																	
ALLIED CORPORATION																	
SOUTH BEND, INDIANA																	
PROJECT ALCHPX SBIN 007																	
T A GLEASON ASSOCIATES																	
Environmental and Geotechnical Services																	

WELL NO. | SAMPLE # | DATE | LAB

BLANK

28

11/06/86

AQUA

25

12/18/86

AQUA

24

12/18/86

AQUA

12

01/08/87

AQUA

23

02/12/87

AQUA

02/12/87

AQUA

23

06/05/87

AQUA

36

09/04/87

AQUA





WELL NO.	SAMPLE #	DATE	LAB	ANTIMONY UG/L	ARSENIC UG/L	BERYLLIUM UG/L	CADMIUM UG/L	CHROMIUM UG/L	COPPER UG/L	LEAD UG/L	MERCURY UG/L	NICKEL UG/L	SELENIUM UG/L	SILVER UG/L	THALLIUM UG/L	ZINC UG/L	CYANIDE HG/L	PHENOLS HG/L	NOTES:
E-3	7	03/25/87	AQUA					<20		<3						.080	.07	.012	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
RWB-6	10	03/25/87	AQUA					<20		<3						10	.05	.131	
	11	03/25/87	AQUA					<20		<3						10	.05	<.01	< = LESS THAN
RWB-16	8	03/25/87	AQUA					<20		<3						10	.07	.017	BLANK SPACE INDICATES NOT ANALYZED FOR
																			TABLE 4
RWB-21	12	03/25/87	AQUA					<20		<3						10	.05	.015	GROUNDWATER QUALITY ANALYSIS METALS, CYANIDE AND PHENOLS
																			PAGE 1 OF 1
RWB-22	9	03/25/87	AQUA					<20								10	.07	.012	RECOVERY WELLS
																			GROUNDWATER INVESTIGATIONS
																			ALLIED CORPORATION
																			SOUTH BEND, INDIANA
																			PROJECT #ALCMPX S81M 007
																			T A GLEASON ASSOCIATES
																			ENVIRONMENTAL AND
																			GEOTECHNICAL SERVICES



PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

BASE NEUTRAL COMPOUNDS

NOTES:

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

ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.

IA = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS.

SEE LAB REPORT.

B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHTHALATE ESTERS.

SEE LAB REPORT.

IC = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION.

SEE LAB REPORT.

ID = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC.

SEE LAB REPORT.

IVOC 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 1 OF 27  
MONITOR WELLS

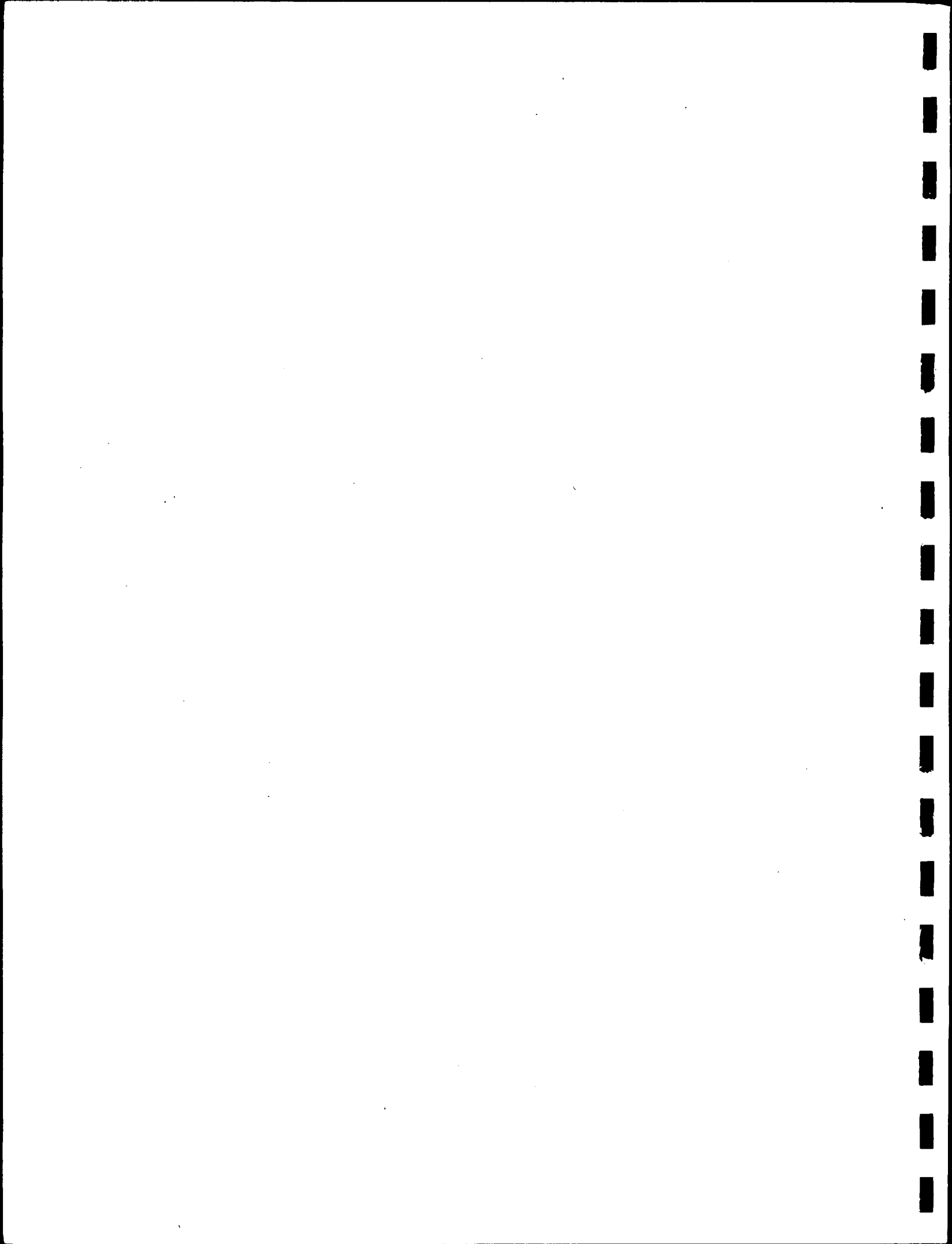
GROUNDWATER INVESTIGATIONS

ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCMPX S81N 007

T A GLEASON ASSOCIATES

Environmental and Geotechnical Services

WELL NO.	DATE	SAMPLE #	LAB	TRANS-1,2-DI-1,1-DI-CHLORO-ETHANE	UG/L	1,2-DI-CHLORO-PROPANE	UG/L	VINYL CHLORIDE	UG/L	FORM	UG/L	TOLUENE	UG/L	PHthalate	UG/L	DI-N-ETHYL-ACID FRACTION	UG/L	NOTE A	NOTE B	NOTE C	NOTE D
D-4	10/01/86	11	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
	02/12/87	13	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
	06/05/87	8	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
	09/03/87	8	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				

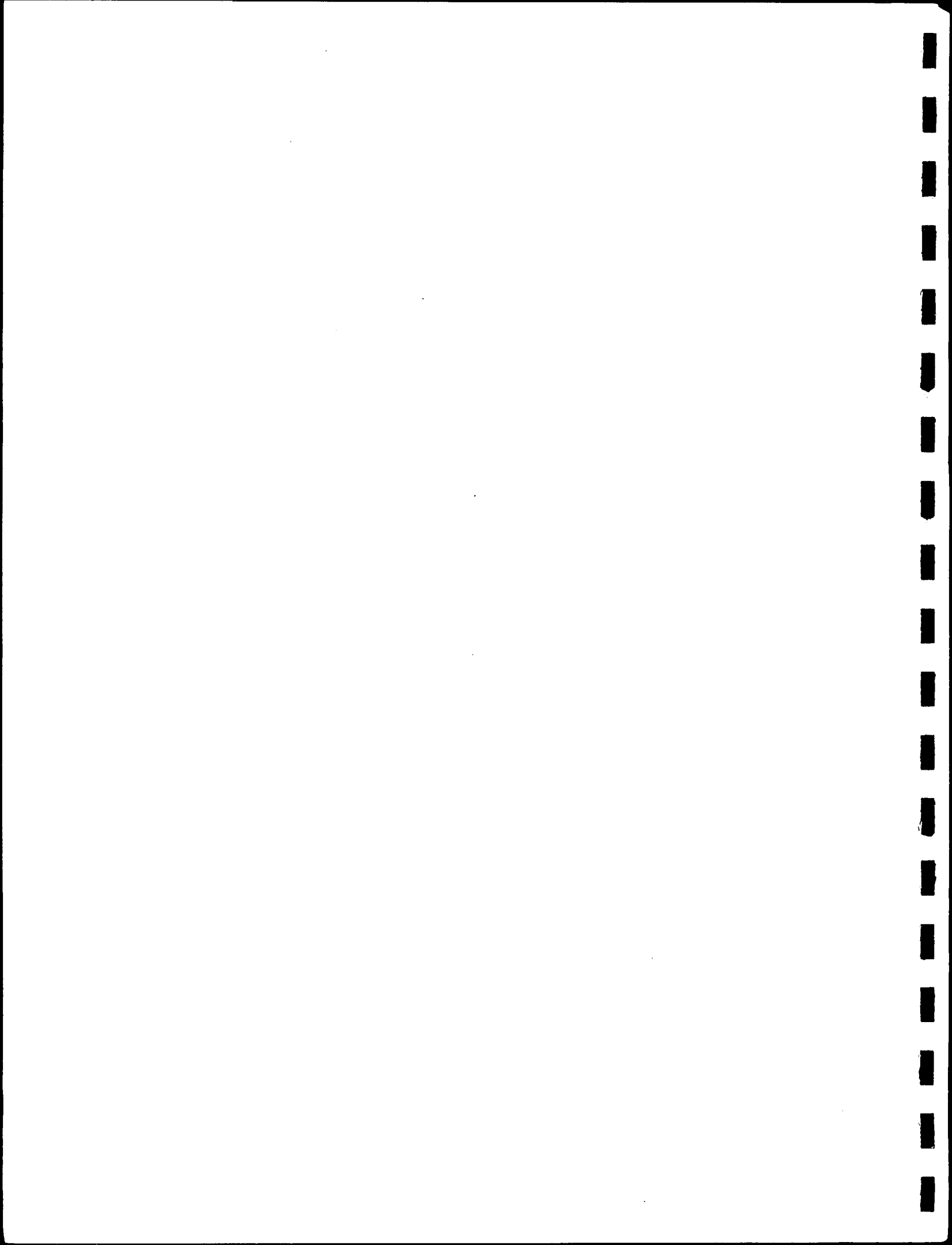












PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

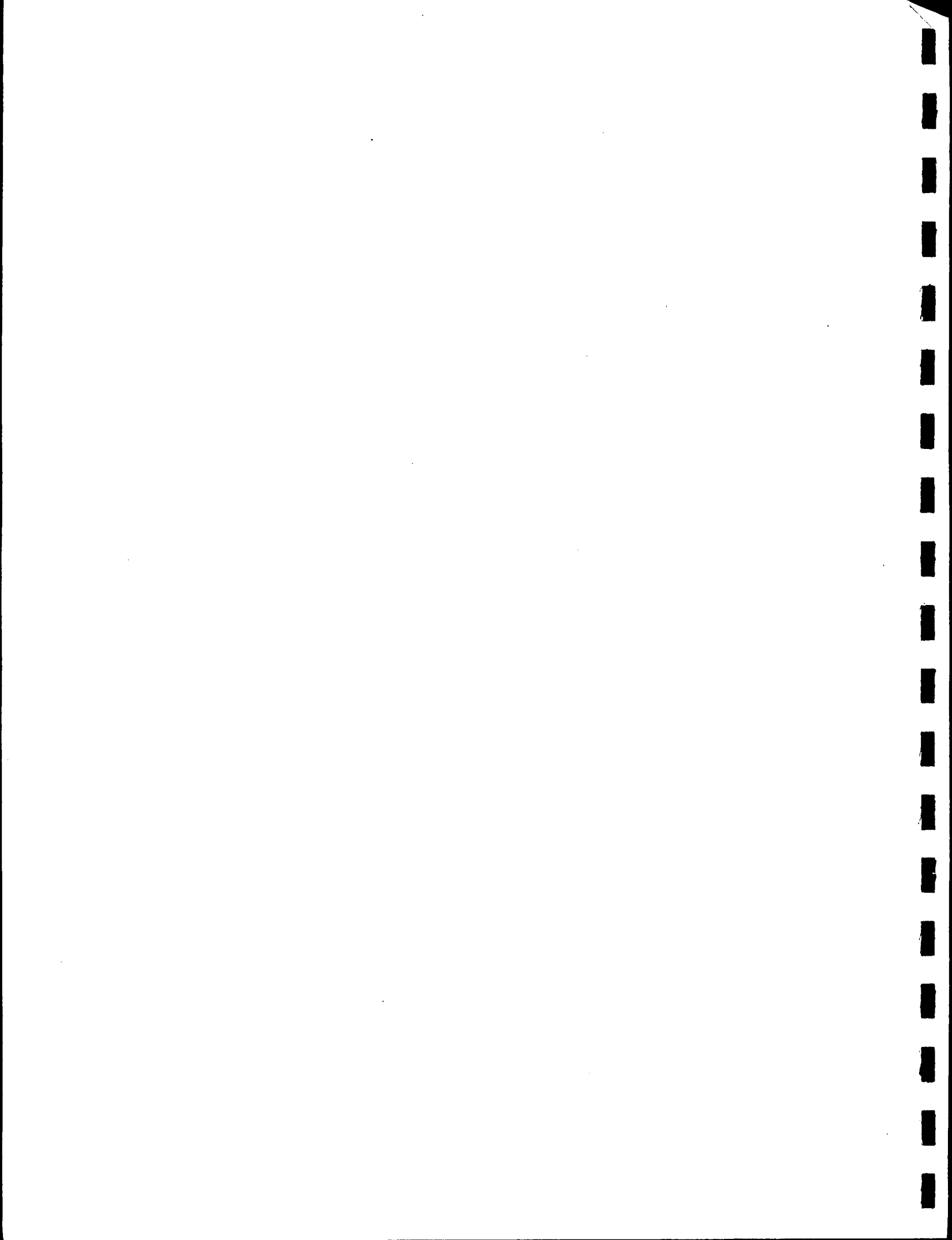
BASE NEUTRAL COMPOUNDS

WELL NO.		DATE	SAMPLE #	LAB	VOC					Base Neutral Compounds				Notes					
					TRANS-1,2-DI-CHLOROETHANE	1,2-DI-CHLOROETHANE	1,1-DI-CHLOROETHANE	TRI-CHLOROETHANE	CHLOROETHYLENE	PROPANE	VINYL CHLORIDE	FORM	TOLUENE	PHthalate	PHthalate	OCTYL	NOTE B	NOTE C	NOTE D
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	BIS (2-ETHYLHEXYL)	ACID FRACTION	CIS-1,2-DICHLOROETHENE
9	S-3	11/05/86		AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6			
4		06/05/87		AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
4		09/03/87		AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				

ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.  
 A = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS.  
 SEE LAB REPORT.  
 B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHthalate ESTERS.  
 SEE LAB REPORT.  
 C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION.  
 SEE LAB REPORT.  
 D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCS SCAN FOR PRIORITY POLLUTANT VOC.  
 SEE LAB REPORT.  
 VOC RESULTS ARE A SUMMARY OF A GCS 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 27
MONITOR WELLS
GROUNDWATER INVESTIGATIONS
ALLIED CORPORATION
SOUTH BEND, INDIANA
PROJECT # ALCMPX SBIN 007
T A GLEASON ASSOCIATES
Environmental and Geotechnical Services











PRIORITY POLLUTANTS

WELL NO.	DATE	SAMPLE #	LAB	VOLATILE ORGANIC COMPOUNDS (VOC)													BASE NEUTRAL COMPOUNDS													NOTES
				1,1-DI- [CHLORO-] ETHANE	1,2-DI- [CHLORO-] ETHANE	1,1-DI- [CHLORO-] ETHYLENE	1,2-DI- [CHLORO-] ETHYLENE	1,1,1- [TRI- CHLORO-] ETHANE	1,1,1,1- [TRI- CHLORO-] ETHYLENE	1,2-DI- [CHLORO-] PROPANE	1,2-DI- [CHLORO-] PROPYLENE	VINYL [CHLORO-] CHLORIDE	FORM [CHLORO-] CHLORIDE	PHthalate	(2-ETHYLHEXYL) [OCTYL PHthalate]	DI-N- [OCTYL PHthalate]	ACID [FRACTION ETHENE]	NOTE C [CIS-1,2- DICHLORO- LIMITED TO OUR WRITTEN REPORTS.]	NOTE D											
S-14	11/06/86	21	AQUA	ND	120	ND	42.2	ND	3.6	166	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS. SEE LAB REPORT.	
	02/12/87	15	AQUA	77	217	20	ND	ND	ND	314	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHthalate ESTERS. SEE LAB REPORT.		
	06/05/87	5	AQUA	58	180	ND	12	ND	8.5	258	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150 C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION. SEE LAB REPORT.		
	09/03/87	7	AQUA	ND	140	ND	ND	ND	8.0	148	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCM SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT.		
VOC RESULTS ARE A SUMMARY OF A GCM SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.																														
TABLE 5																														
GROUNDWATER QUALITY ANALYSIS ORGANIC COMPOUNDS PAGE 7 OF 27 MONITOR WELLS																														
GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX SBIN 007 T A GLEASON ASSOCIATES																														
Environmental and Geotechnical Services																														













PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

BASE NEUTRAL COMPOUNDS

WELL NO.	DATE	SAMPLE #	LAB	VOC										Base Neutral Compounds				Notes	
				1,1-DI-CHLOROETHANE	1,1-DI-CHLOROETHANE	1,2-DI-CHLOROETHANE	1,2-DI-CHLOROETHANE	1,1,1-TRI-CHLOROETHANE	1,1,2-TRI-CHLOROETHANE	1,2,3-TRI-CHLOROETHANE	1,2,4-TRI-CHLOROETHANE	1,1,1,2-TETRA-CHLOROETHANE	1,1,2,2-TETRA-CHLOROETHANE	1,1,1,2,2-PENTACHLOROETHANE	1,1,1,2,2,2-HEXACHLOROETHANE	NOTE A BASE NEUTRAL	NOTE B BIS (2-ETHYLHEXYL) PHTHALATE		NOTE C DI-N-OCTYL ACID FRACTION
S-17	11/06/86	16	AQUA	4.3	ND	1.5	ND	ND	12.0	18	ND	ND	ND	ND	ND	ND	ND	ND	A = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS. SEE LAB REPORT.
	01/07/87	4	AQUA	ND	ND	ND	ND	ND	94.8	95	ND	ND	ND	ND	ND	ND	ND	ND	B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHTHALATE ESTERS. SEE LAB REPORT.
	02/12/87	3	AQUA	ND	ND	ND	7.9	ND	116	124	ND	ND	ND	ND	ND	ND	ND	ND	C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION. SEE LAB REPORT.
	06/05/87	15	AQUA	ND	ND	ND	ND	ND	80	80	ND	ND	ND	ND	ND	ND	ND	5.6	D = SAMPLED NON-PRIORITY POLLUTANT. CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT.
	09/03/87	20	AQUA	ND	ND	ND	ND	ND	86	86	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																			
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MONITOR WELLS																			
=====																			
GROUNDWATER INVESTIGATIONS																			
ALLIED CORPORATION																			
SOUTH BEND, INDIANA																			
PROJECT # ALCHPX SBIN 007																			
T A GLEASON ASSOCIATES																			
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Environmental and Geotechnical Services																			





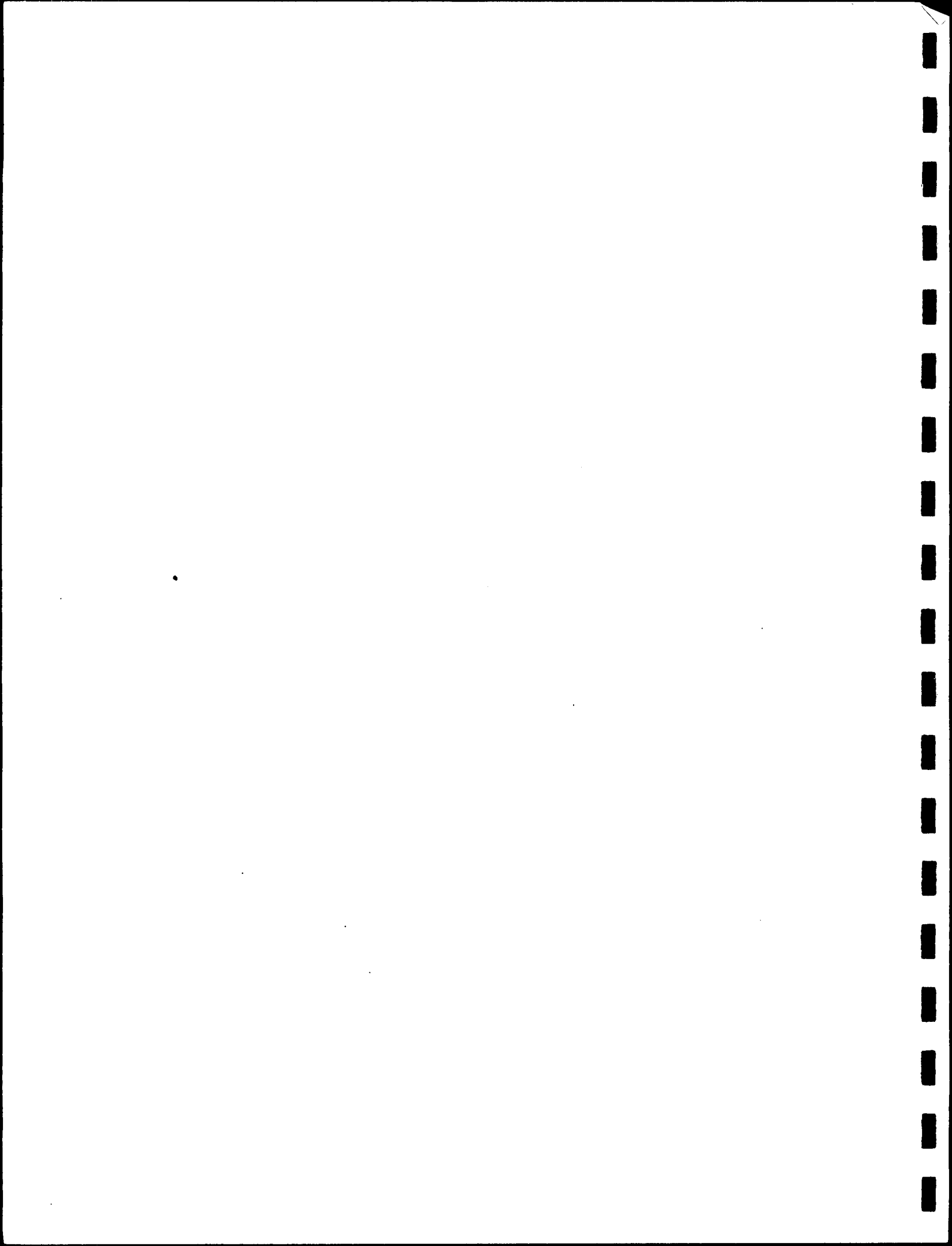




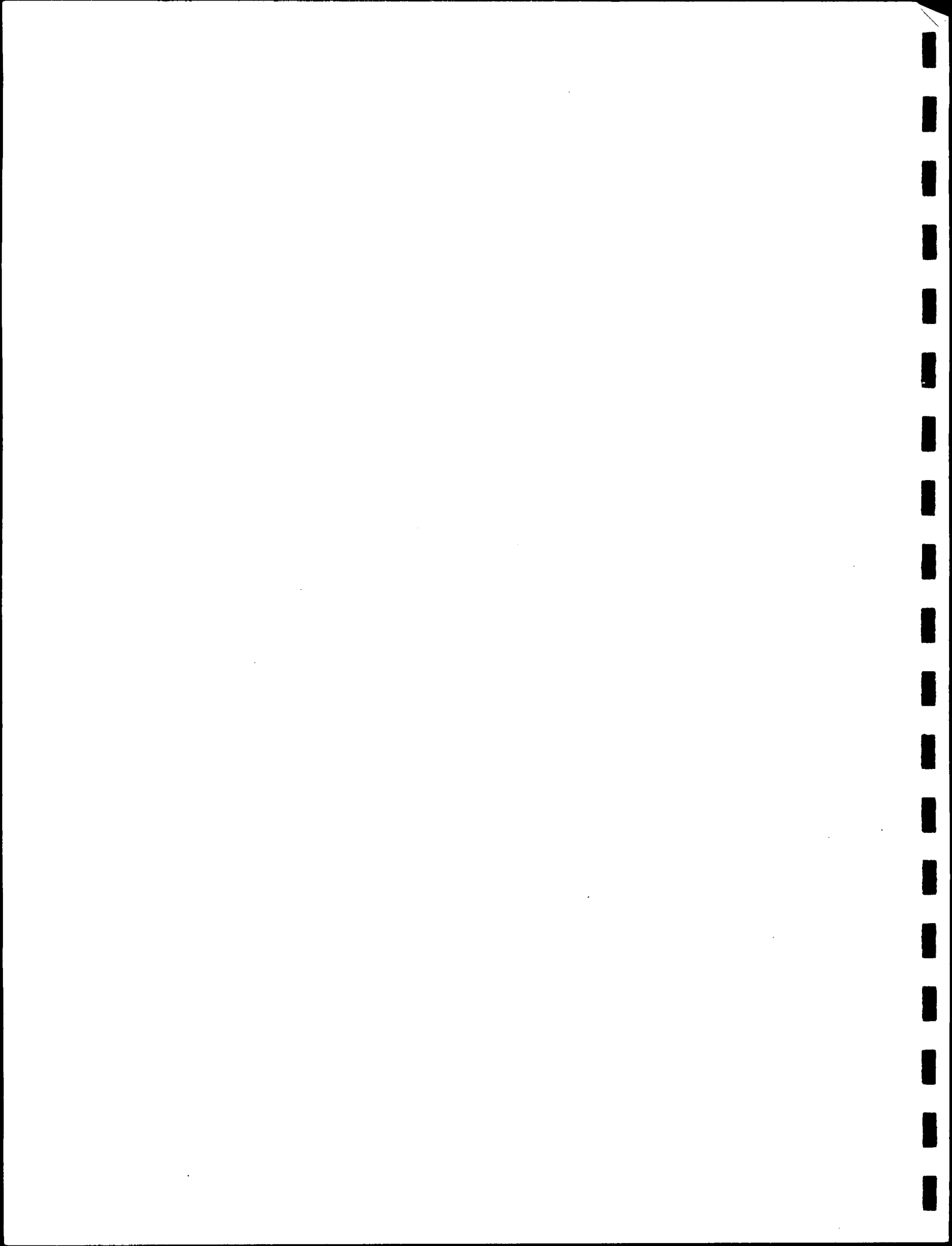












PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

WELL NO.	DATE	SAMPLE #	LAB	VOC												NOTE D	NOTES	
				1,1-DI- CHLORO- ETHANE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,1,1- TRI- ETHANE UG/L	1,1,1- TRI- ETHYLENE UG/L	1,2-DI- CHLORO- ETHANE UG/L	1,2-DI- CHLORO- ETHYLENE UG/L	1,2,2- TRI- ETHANE UG/L	1,2,2- TRI- ETHYLENE UG/L	VINYL CHLORIDE UG/L	BENZENE UG/L	TOLUENE UG/L	ETHYLENE DIBROMIDE UG/L			
S-24	07/10/87	2	AQUA	ND	ND	ND	ND	145	150	295	ND	ND	ND	ND	ND	ND	170	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT
	09/04/87	25	AQUA	ND	ND	ND	ND	140	170	310	ND	ND	ND	ND	ND	ND	150	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 15 OF 27 MONITOR WELLS
																		GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCMPX SBIN 007
																		T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES





PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE UG/L	1,2-DI- CHLORO- ETHANE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,2-DI- CHLORO- ETHYLENE UG/L	TRI- CHLORO- ETHYLENE UG/L	SUM	VINYL CHLORIDE UG/L	1,2-DI- CHLORO- PROPANE UG/L	ETHYL- BENZENE UG/L	TOLUENE UG/L	NOTE D CIS-1,2- DICHLORO- ETHENE UG/L	NOTES:
S-25	07/10/87	1	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT
	09/03/87	11	AQUA	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 16 OF 27 MONITOR WELLS
															GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX SBIN 007
															T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES

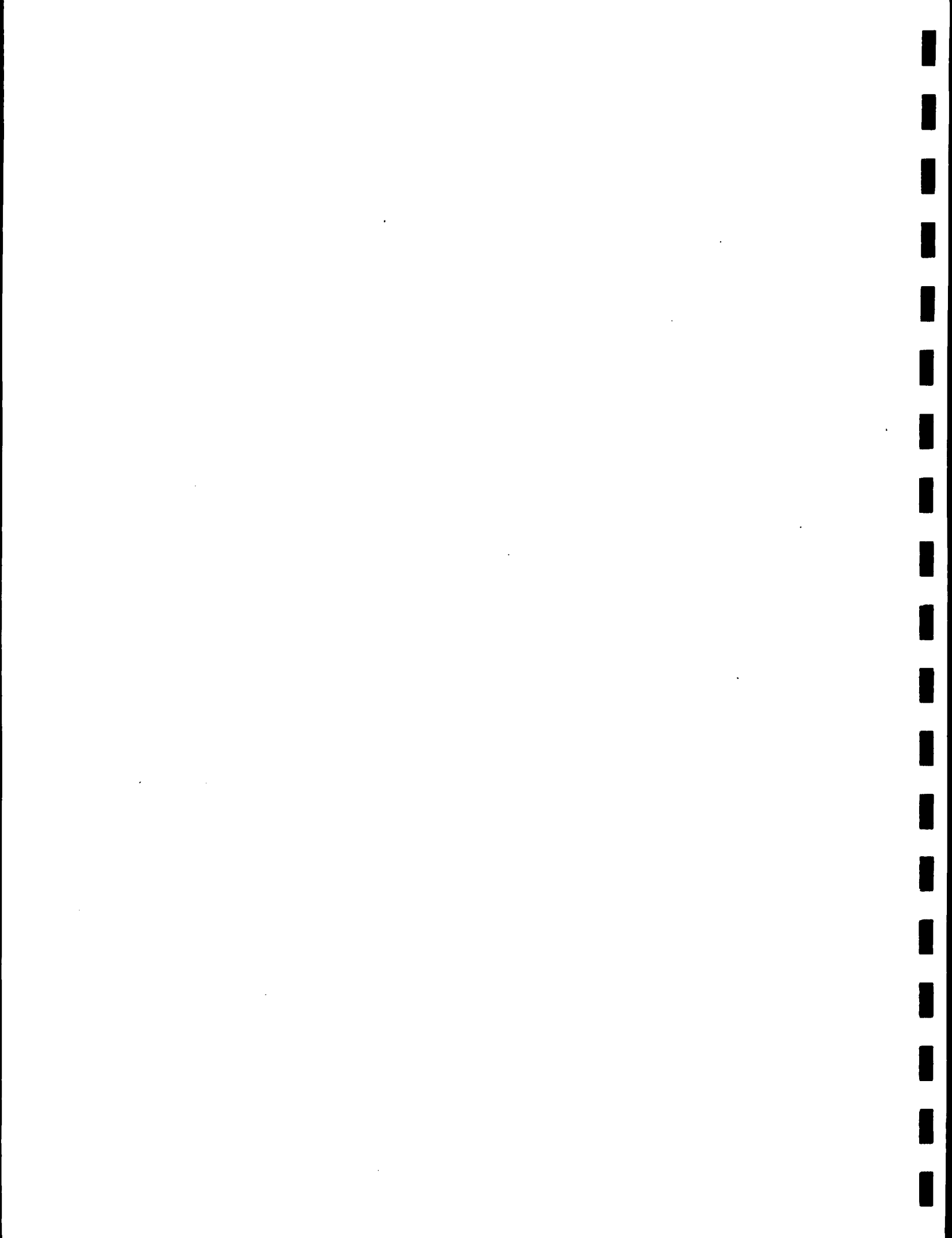






PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)														NOTE D
WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,1-DI- CHLORO- ETHANE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	NOTE D
S-27	07/10/87	8	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.4
	09/04/87	26	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.5
ND = NOT DETECTED SEE LAB REPORT FOR DETECTION LIMITS D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT 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 18 OF 27 MONITOR WELLS GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCHPX SBIN 007 T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES														



PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE UG/L	1,2-DI- CHLORO- ETHANE UG/L	1,1-DI- CHLORO- ETHYLENE UG/L	TRANS-1,2- DI- CHLORO- ETHYLENE UG/L	1,1,1- TRI- CHLORO- ETHANE UG/L	TRI- CHLORO- ETHYLENE UG/L	SUM UG/L	VINYL CHLORIDE UG/L	1,2 DI- CHLORO- PROPANE UG/L	ETHYL- BENZENE UG/L	TOLUENE UG/L	ETHENE UG/L	NOTE D CIS-1,2- DICHLORO- ETHENE UG/L	NOTES:
7-0	07/10/87	3	AQUA	ND	ND	ND	17	ND	19	36	ND	ND	ND	ND	ND	250	D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT
	07/10/87	4	AQUA	ND	ND	ND	16	ND	17	33	ND	ND	ND	ND	ND	250	VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT
	09/04/87	29	AQUA	ND	ND	ND	ND	ND	20	20	ND	14	ND	ND	ND	220	SEE LAB REPORT
TABLE 5																	
GROUNDWATER QUALITY ANALYSIS ORGANIC COMPOUNDS																	
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GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCMPX SBIN 007																	
T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEOTECHNICAL SERVICES																	





PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE	UG/L	1,1-DI- CHLORO- ETHANE	UG/L	1,1,1- TRI- CHLORO- ETHANE	UG/L	1,1,1- TRI- CHLORO- ETHANE	UG/L	VINYL CHLORIDE	UG/L	1,2 DI- CHLORO- PROPANE	UG/L	ETHYL- BENZENE	UG/L	TOLUENE	UG/L	NOTE D CIS-1,2- DICHLORO- ETHENE	UG/L	NOTES:
8-0	07/10/87	5	AQUA	ND		ND		ND		ND		ND		ND		ND		ND		720		D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC. SEE LAB REPORT
	09/04/87	30	AQUA	ND		ND		ND		ND		ND		ND		ND		ND		900		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>TABLE 5</p> <p>GROUNDWATER QUALITY ANALYSIS</p> <p>ORGANIC COMPOUNDS</p> <p>PAGE 20 OF 27</p> <p>MONITOR WELLS</p> <p>GROUNDWATER INVESTIGATIONS</p> <p>ALLIED CORPORATION</p> <p>SOUTH BEND, INDIANA</p> <p>PROJECT # ALCHPX SBIN 007</p> <p>T A GLEASON ASSOCIATES</p> <p>ENVIRONMENTAL AND GEOTECHNICAL SERVICES</p>																						

















PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

BASE NEUTRAL COMPOUNDS

NOTES:

WELL NO.	DATE	SAMPLE #	LAB	1,1-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	1,1,1- TRI- CHLORO- ETHANE	1,1,2-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	VINYL CHLORO- FORM	TOLUENE COMPOUNDS	PHthalate FRACTION	ETHENE	NOTE A BASE NEUTRAL	NOTE B BIS (2-ETHYLHEXYL)	NOTE C DI-N- ACID	NOTE D CIS-1,2- DICHLORO- ETHENE	INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
7-25	11/07/86	31	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	IA = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SEE LAB REPORT.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	IB = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS PHthalate ESTERS.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SEE LAB REPORT.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	IC = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SEE LAB REPORT.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	JD = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SEE LAB REPORT.
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	IVOC 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 25 OF 27
																	MONITOR WELLS
																	GROUNDWATER INVESTIGATIONS
																	ALLIED CORPORATION
																	SOUTH BEND, INDIANA
																	PROJECT # ALCHPX SBIN 007
																	T A GLEASON ASSOCIATES
																	Environmental and Geotechnical Services











SAMPLE SOURCE	DATE	SAMPLE #	LAB	TRANS-1,2										NOTES:			
				1,1-DI- CHLORO- ETHYLENE	1,1-DI- CHLORO- ETHYLENE	1,2-DI- CHLORO- ETHYLENE	TOTAL XYLENES	CIS-1,2 DICHORO- ETHYLENE	DI- CHLORO- ETHYLENE	TRI- CHLORO- ETHYLENE	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.						
				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
E-3	03/25/87	7	AQUA	72	56	ND	10	53	ND	23	ND	ND	ND	ND	224		ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.
RUB-6	03/25/87	10	AQUA	ND	300	8.7	50	410	54	65	ND	ND	ND	ND	888		
	03/25/87	11	AQUA	ND	300	12	50	410	72	69	ND	ND	ND	ND	913		
	09/04/87	33	AQUA	ND	ND	ND	ND	700	45	ND	290	ND	ND	ND	1035		
RUB-16	03/25/87	8	AQUA	22	16	ND	ND	16	ND	ND	ND	ND	ND	ND	54		
	09/04/87	35	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
																	TABLE 6
RUB-21	03/25/87	12	AQUA	ND	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	15		GROUNDWATER QUALITY ANALYSIS ORGANIC COMPOUNDS
	09/04/87	32	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		PAGE 1 OF 1 RECOVERY WELLS
RUB-22	03/25/87	9	AQUA	184	124	ND	94	ND	60	199	ND	ND	ND	ND	661		GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT # ALCPX SBIN 004
	09/04/87	34	AQUA	ND	ND	ND	81	ND	ND	160	ND	420	ND	ND	661		T A GLEASON ASSOCIATES ----- ENVIRONMENTAL AND GEOTECHNICAL SERVICES





Shallow monitor wells 8-27 and 9-33 encountered the till confining layer at 19.25 ft and 27.25 ft respectively. The till is described as a gray stiff silty clay with disseminated sand and gravel. Well 7-50 was bored to 50 ft and did not encounter the till confining layer.

The deep aquifer is generally a stratified unit comprising permeable sand and gravel interbedded with fine-grained till. The sand and gravel zones are discontinuous across the region (Figure 10). In some instances, these sand and gravel zones below the till confining layer may be isolated or they may be in hydraulic communication with the shallow aquifer as extensions of the zone (e.g., D1 and D1A). Therefore, intermediate depth monitor wells which were not completed to bedrock are screened in sand zones which may not be characteristic of the deep aquifer.

Cross section "A-A'" (Figure 11) compares the area on the north side of the complex where the deep aquifer sand and gravel appears to be absent to the south side of the Complex which has significant sand zones (Figure 12). The lithologic change is relatively abrupt. Several glacial features may be responsible for this phenomenon including a kame delta, which is an ice margin feature in which sediments are deposited in standing water within or between ice blocks. Alternatively, a trough wall may have formed along the fringe of the bedrock valley.

Where no significant till layer exists, as along the southeastern edge of the site (e.g., well 1D, the 1941 test well #6, and the 1934 production well), the upper and lower aquifers are in direct hydraulic communication. Therefore, the area south of the Complex where the two aquifers are in direct hydraulic communication (see Section 1.1.3) apparently extends



onto Allied property (see Figure 5). Cross section C-C' (Figure 13) illustrates the lack of a significant till confining layer at sites 1D and 2D and the more typical thick till zone found at well locations to the northeast of monitor wells 1D and 2D.

### 3.1.1 Direction of Groundwater Flow (Shallow Aquifer)

The mean depth of groundwater flow in the shallow aquifer was calculated from groundwater measurements to be approximately 16.5 feet below ground surface. The direction of groundwater flow in the shallow aquifer is toward the north and northeast (Figure 14). The southeastern portion of the Allied Complex exhibits a flow pattern to the northwest because of the pumping of recovery wells RWB-6, RWB-16, RWB-22, RWB-23, and E-3.

The measured hydraulic gradient ranges from  $1.3 \times 10^{-3}$  to  $5.6 \times 10^{-3}$ .

### 3.1.2 Rate of Groundwater Flow (Shallow Aquifer)

The rate of groundwater flow was calculated using the Darcy Equation:

$$v = \frac{KI}{n}$$

Where  $v$  is the velocity of groundwater,  $K$  is the hydraulic conductivity,  $n$  is the porosity of the medium, and  $I$  is the hydraulic gradient. The calculated rate of groundwater flow in the shallow aquifer is approximately 35 ft/yr based on an estimated hydraulic conductivity of 10 ft/day, an average hydraulic gradient of  $3 \times 10^{-3}$ , and 0.30 for the porosity term. Because of the variability of the saturated thickness, grain size, and silt content of the upper aquifer, the hydraulic conductivity could vary by an order of magnitude within the area, resulting in a groundwater velocity of up to 350 ft/year.



### 3.1.3 Direction of Groundwater Flow (Deep Aquifer)

The average depth to groundwater was calculated from groundwater measurements to be approximately 16.5 feet below ground surface. The direction of groundwater flow in the deep aquifer trends toward the northeast (Figure 15). The piezometric elevations measured in monitor wells 5D and 6D (approximate groundwater elevations of 689 ft and 688 ft, respectively) show that the deep aquifer is confined, i.e., the water levels are nearly 100 feet higher than the top of the aquifer. A hydraulic gradient ranging from  $4.6 \times 10^{-4}$  to  $1.9 \times 10^{-3}$  was measured from piezometric elevations.

### 3.1.4 Rate of Groundwater Flow (Deep Aquifer)

The rate of groundwater flow in the deep aquifer was calculated using the Darcy Equation. A rate of approximately 200 ft/yr was calculated using an estimated hydraulic conductivity of 200 ft/day, an average hydraulic gradient of  $1 \times 10^{-3}$ , and 0.35 for the porosity term.

### 3.1.5 Vertical Gradient

Vertical gradients were calculated for nested monitor wells. In cases where the vertical gradient is very small, it is probable that the paired wells are screened in strata which is in direct hydraulic communication. Well 2D/S16 has a vertical gradient of  $9.0 \times 10^{-4}$ . The highest calculated vertical gradients were for nested wells D12/S23 and 5D/S21 with values of 0.05 and 0.04, respectively. These values illustrate the effects of the clay layer separating the upper and lower aquifers.



## 3.2 GROUNDWATER PLUME DELINEATION

### 3.2.1 Organic Compounds (Shallow Aquifer)

Nineteen existing and four recently installed shallow aquifer monitor wells were sampled on one or more episodes from August 1986 thru February 1987. Analyses <sup>were</sup> was performed for Priority Pollutant VOC, Base Neutrals, Acids, Phenols and Cyanide. The analytical results are presented in Table 1, and the results for Phenols & Cyanide are presented in Table 2.

#### Acids and Base Neutrals

The only Priority Pollutant detected in any of the monitor wells was Bis (2-Ethylhexyl) Phthalate, which was sampled in 9 wells at concentrations ranging from 2.6 ug/l to 15.6 ug/l. These concentrations are significantly less than the calculated no-adverse effect of 4200 ug/l [USEPA, Bis (2-Ethylhexyl) Phthalate, Health and Environmental Effects Profile No. 27, Washington, DC, Office of Solid Waste (April 30, 1980)].

#### Volatile Organic Compounds

Figure 16 shows total VOC concentrations in the shallow aquifer during the most recent sampling of each well. The major contaminants detected in the shallow aquifer monitor wells were trichloroethylene (TCE), trans-1,2-dichloroethylene (1,2-DCE), 1,2-dichloroethane (1,2-DCA), and 1,1-dichloroethane (1,1-DCA). The highest levels of VOC outside of the facility, sampled in February 1987 were from wells S9 and S14 (336 and 314 ug/l, respectively). The highest concentration of VOC previously detected was





sampled from monitor well S4 (3031 ug/l) in September 1986 (see Figure 17). Wells S9 and S14 are located downgradient of S4. DCA was the major contaminant detected in these wells (Figure 18).

Figures 16 - 19 show a VOC plume with concentrations of TCE and 1,2-DCE ranging from 398 ug/l to 1314 ug/l in the shallow aquifer beneath the facility, as illustrated by monitor wells 10, 13, and 15.

Figure 19 shows the sum of TCE and 1,2-DCE in relation to total VOC concentrations during the most recent sampling. TCE and 1,2-DCE at levels ranging from 89 ug/l to 124 ug/l were sampled in monitor wells S17, S21, and S22. Groundwater flow in the plant area located in the southeast portion of the complex is generally to the north-northeast (see Section 3.1.1.1). This evidence suggests a relationship between the plume in that area and TCE and 1,2-DCE concentrations detected in wells north-northeast of this plume.

TCE and 1,2-DCE were also found in wells S2 (142 ug/l in November 1986 and 27 ug/l in January 1987) and S4 (1164 ug/l in September 1986). Monitor well S4 is located northwest of the VOC plume. A northwesterly groundwater flow is induced by pumping of recovery wells RWB-16, RWB-6, RWB-22, RWB-23, and E-3 (see Section 3.1.1.1).



### Cyanide

The highest reported cyanide concentration was 20 ug/l in Well S-20, which is just above the detection limit of 10 ug/l and well below the 1980 USEPA drinking water criteria of 200 ug/l.

### Phenols

The highest reported phenols concentration was 60 ug/l in Well S-16. Subsequent samplings of S-16 did not detect phenols above the detection limit of 10 ug/l. The USEPA drinking water criteria for phenols is 300 ug/l.

### 3.2.2 Organic Compounds (Deep Aquifer)

Seven existing and six recently installed deep aquifer monitor wells were sampled on one or more episodes from October 1986 thru February 1987. Analyses <sup>were</sup> ~~was~~ performed for Priority Pollutant VOC, base neutrals, acids, cyanide, and phenols. The analytical results are presented in Tables 1 and 2.

#### Acids and Base Neutrals

Three wells sampled Bis (2-Ethylhexyl) phthalate at concentrations ranging from 3.3 to 4.6 ug/l, significantly less than the no-adverse effect level of 4200 ug/l.



### Volatile Organic Compounds

Four deep aquifer monitor wells sampled VOC ranging from 2 ug/l to 842 ug/l during the most recent sampling for each well (Figure 20). Available evidence indicates that access of VOC to the deep aquifer has occurred in portions of the plant area where the shallow and deep aquifers are in direct hydraulic communication, e.g., near monitor wells 1D and 2D (Figure 21).

Three of the wells which sampled VOC were screened on top of bedrock (Wells 1D, 2D, and 4D). Well 1D sampled 20 ug/l of TCE and Well 4D sampled 2 ug/l of 1,2 DCE during the recent sampling (Figure 22). Well 2D sampled 20 ug/l of DCA.

Well D7, which is screened at a depth of 71 to 76 ft, sampled 812 ug/l of DCA and 30 ug/l of 1,2-DCE (Figure 23). The VOC sampled in well D7 may be VOC migration from the vicinity of S4.

### Cyanide

Well D5 sampled 30 ug/l cyanide in November 1986 but did not detect cyanide in the December 1986 sampling. None of the other wells sampled cyanide.

### Phenols

Well D5 sampled 25 ug/l phenols in November 1986 but did not detect phenols in the December 1986 sampling. None of the other wells sampled phenols.



### 3.2.3 Heavy Metals in the Shallow Aquifer

Groundwater analytical results for heavy metals are presented in Table 2. Except for the most recent sampling (February 1987), all groundwater samples were analyzed for total metals (i.e., the samples were not filtered before analysis). During the most recent sampling, February 12, 1987, both filtered and unfiltered samples from two wells, 7-25 and 9-33, were analyzed to compare the results. The results show that the filtered i.e. dissolved values, were significantly less than the unfiltered, i.e. total values for chromium, lead, and zinc. For example, total lead sampled in 7-25 was 300 ug/l and dissolved lead was 3 ug/l. Total chromium was 16 ug/l and dissolved chromium was <10 ug/l. Total zinc was 170 ug/l and dissolved zinc was 12 ug/l.

A similar trend was shown in well 9-33. Total lead was detected at 125 ug/l, while dissolved lead was less than 10 ug/l. Total chromium was detected at 844 ug/l; dissolved chromium was less than 3 ug/l. Total zinc was 210 ug/l and dissolved zinc was detected at 12 ug/l.

The difference between total metal values and dissolved metal values is significant for two reasons:

1. The Indiana health based drinking water criteria, Maximum Contaminant Level, MCL, is based exclusively on dissolved, i.e. filtered values.
2. When there is a significant difference between the total and dissolved value it is because of the amount of sediment in the sample, and the sediment is indicative that the screened interval is in fine grained material, i.e., clays, silts, and/or fine sands, as is the case in some of the complex wells.





The following presentation of metals in the aquifers is based on total metals.

#### 3.2.3.1 Lead

The federal and Indiana MCL for lead is 50 ug/l. Five wells sampled total lead at greater than 50 ug/l during the most recent sampling -- monitor wells S3, S4, S7, 7-25 and 9-33 (Figure 24). Total lead concentrations ranged from as high as 300 ug/l in well 7-25 to 68 ug/l in well S4. Two wells, S12 and S5, sampled lead values just below the MCL at 45 ug/l and 46 ug/l respectively. Samples collected from wells 7-25 and 9-33 were analyzed for total lead and dissolved lead. The total lead concentrations were 300 ug/l in 7-25 and 125 ug/l in 9-33. However, the concentrations of dissolved lead were 3 ug/l in well 7-25 and less than 3 ug/l in well 9-33. The disparity in lead values suggests that the suspended sediment in the unfiltered groundwater samples contained lead. During filtering, the sediment was removed and consequently only trace concentrations of dissolved lead were present.

#### 3.2.3.2 Zinc

The MCL for zinc is 5000 ug/l. Monitor well S12 sampled 6320 ug/l of zinc. No other shallow aquifer monitor well sampled zinc concentrations above the MCL (Figure 25).

#### 3.2.3.3 Chromium

The MCL for chromium is 50 ug/l. During the most recent sampling, monitor well 9-33 sampled 844 ug/l of total chromium (unfiltered). However, a filtered sample from the same well found less than 10 ug/l of chromium. No other shallow aquifer well sampled chromium concentrations above the MCL (Figure 26).



#### 3.2.4 Heavy Metals in the Deep Aquifer

Groundwater analytical results for heavy metals indicated elevated levels of zinc in one deep aquifer well, and elevated levels of lead in two deep aquifer wells. Other heavy metals detected were below federal and state Maximum Contaminant Levels (MCL).

##### 3.2.4.1 Lead

The MCL for lead is 50 ug/l. Monitor well D4 sampled 53 ug/l and well 1D sampled 52 ug/l of lead during the latest sampling. All other deep aquifer monitor wells sampled less than the MCL for lead (Figure 27).

##### 3.2.4.2 Zinc

The MCL for zinc is 5000 ug/l. Monitor well D4 sampled 5280 ug/l of zinc during the latest sampling (Figure 28). The only other deep aquifer well to sample more than 1000 ug/l of zinc was D3 (1020 ug/l).

##### 3.2.4.3 Chromium

The MCL for chromium is 50 ug/l. The highest value reported from deep aquifer monitor wells was sampled in well 1D in January 1987 (40 ug/l). All other deep aquifer wells sampled chromium at 20 ug/l or less (Figure 29).



### 3.3 SUMMARY

#### 3.3.1 Shallow Aquifer

Groundwater flow in the shallow aquifer is generally north-northeasterly although pumping of recovery wells RWB6, RWB16, RWB22, and E3 will induce a northwesterly flow (See Figure 14). The rate of groundwater flow was estimated to range from approximately 35 ft/year to 350 ft/year.

Elevated levels of VOC, total lead, total zinc, and total chromium were detected in portions of the shallow aquifer. VOC were detected in two areas: 1) a TCE and 1,2-DCE plume (concentrations ranging from below detection limits to 1314 ug/l) located in and north-northeast of the plant area; and 2) a DCA plume (concentrations ranging from below detection limits to 1440 ug/l) located near and north-northeast of monitor well S4.

Five wells sampled total lead concentrations above the MCL of 50 ug/l during the most recent sampling. However, two wells (7-25 and 9-33) were sampled for total metals and dissolved metals. The levels of total lead (125 ug/l to 300 ug/l) were significantly higher than dissolved lead concentrations (below detection limits to 3 ug/l).

The MCL for chromium is 50 ug/l. Only well 9-33 sampled chromium above the MCL. The total chromium concentration was reported at 855 ug/l; the dissolved chromium concentration was less than 10 ug/l.



The significantly higher total metal values suggests that the sediment in the turbid unfiltered sample contained metals.

The MCL for zinc is 5000 ug/l. Only monitor well S12 sampled zinc in excess of the MCL (6320 ug/l).

### 3.3.2 Deep Aquifer

Groundwater flow in the deep aquifer is to the northeast. The rate of groundwater flow was calculated to be approximately 200 ft/yr.

Elevated levels of VOC, total lead, and total zinc were detected in some wells. Available evidence indicates that contaminants have migrated into the deep aquifer in portions of the plant area where the shallow and deep aquifers are virtually in direct hydraulic communication, e.g., near monitor wells 1D and 2D (see Figure 21).

VOC were detected in three wells screened on top of bedrock (wells 1D, 2D, and 4D). Well 1D sampled 20 ug/l of TCE, and Well 4D sampled 2 ug/l of 1,2 DCE. Well 2D sampled 20 ug/l of DCA.

Total lead was found in concentrations above the MCL of 50 ug/l in two wells -- 1D (52 ug/l) and D4 (53 ug/l) -- during the recent sampling. Well D4 also sampled total zinc above the MCL of 5000 ug/l.





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- <sup>2</sup>Bluer, N.K., G.S. Fraser, and E.J. Hartke, 1983. Geology  
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- <sup>3</sup>Leverett, F. and F.B. Taylor, 1915. The Pleistocene of  
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- <sup>4</sup>Hunn, J.D. and J.S. Rosenshein, 1969. Geohydrology and  
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Indiana Department of Natural Resources, Division of Water  
Bulletin 33.



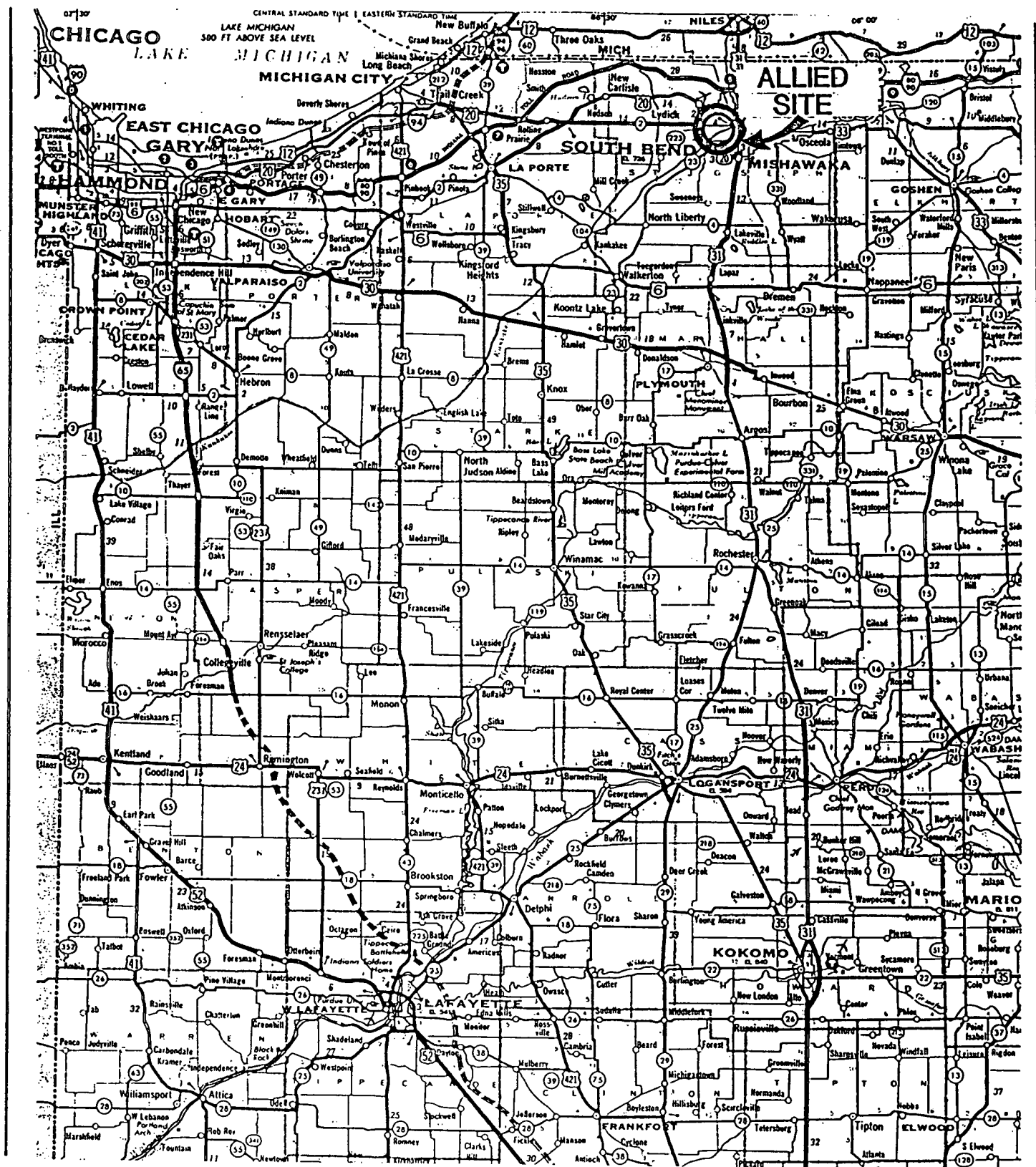


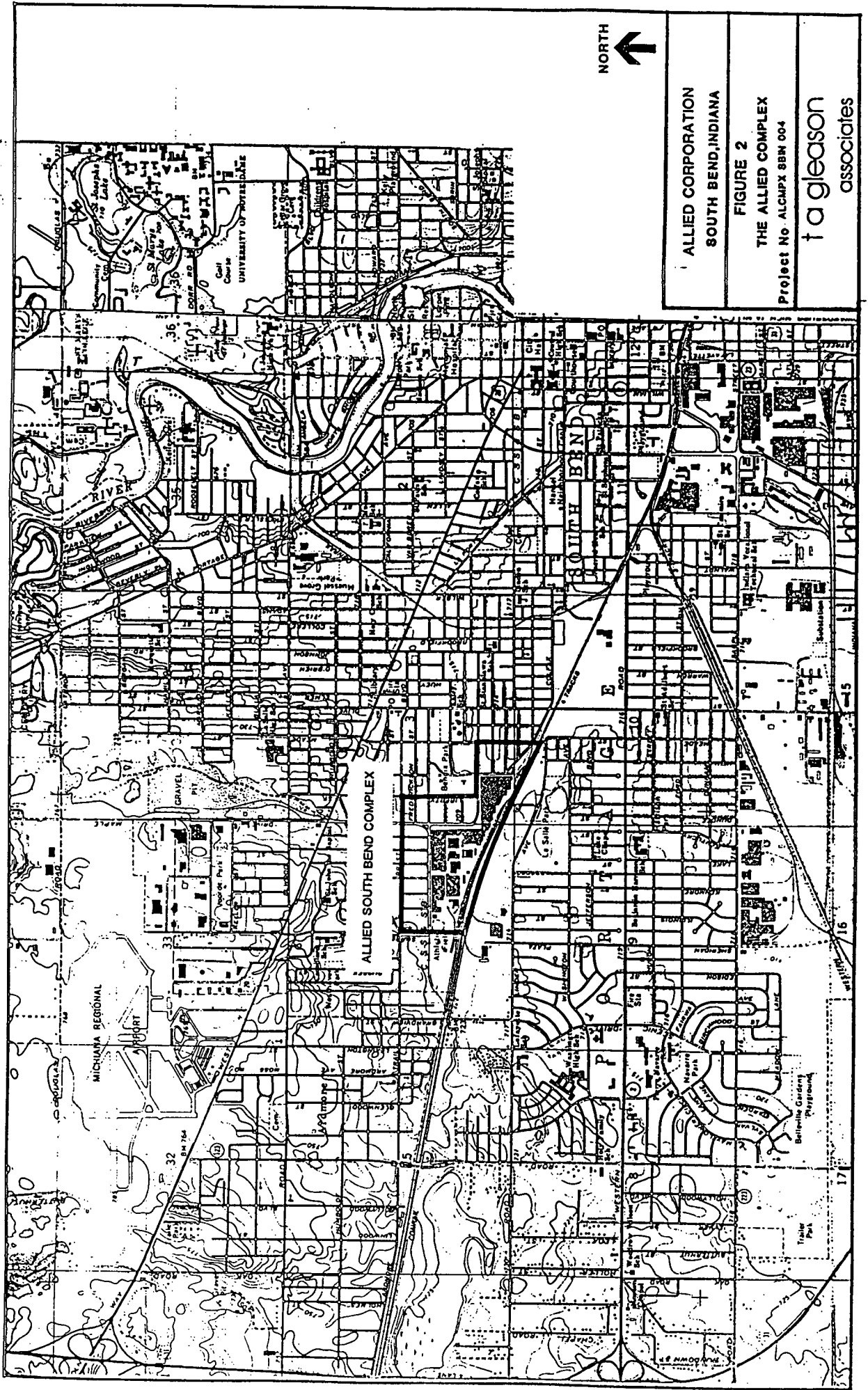
Figure 1  
SITE LOCATION

ALLIED CORPORATION

t a gleason  
associates

ALCMPX SBIN 004







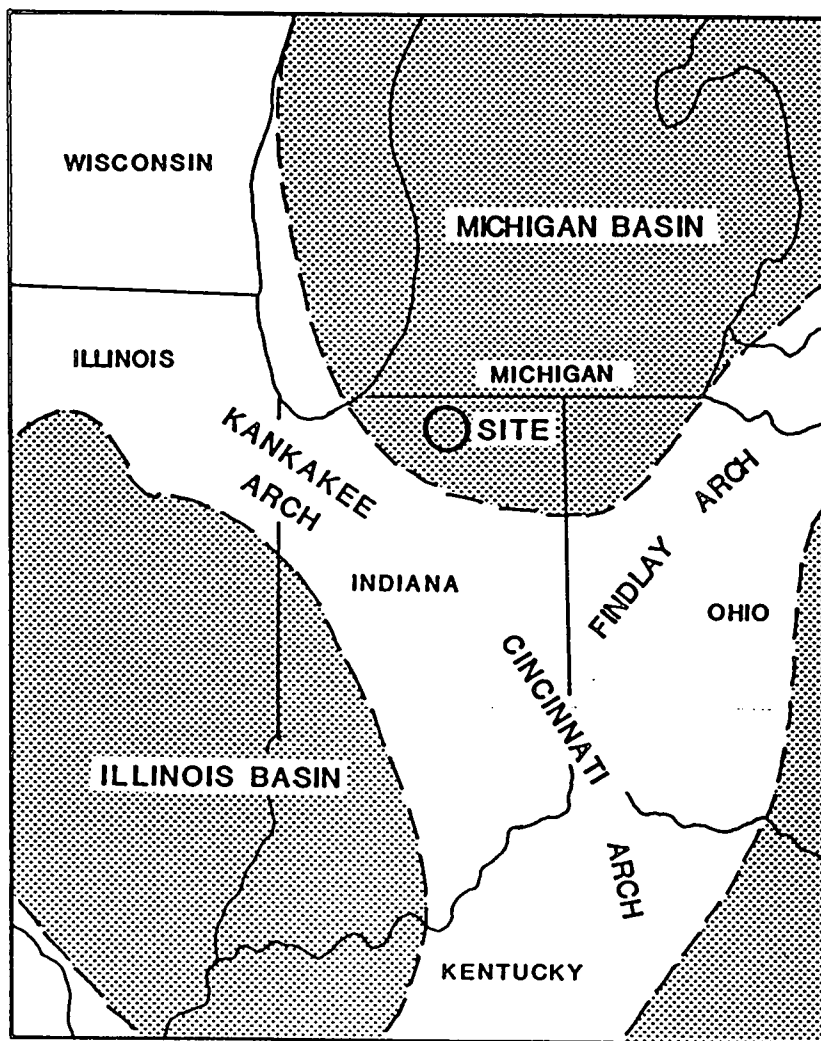


Figure 3  
 REGIONAL BEDROCK  
 STRUCTURAL FEATURES





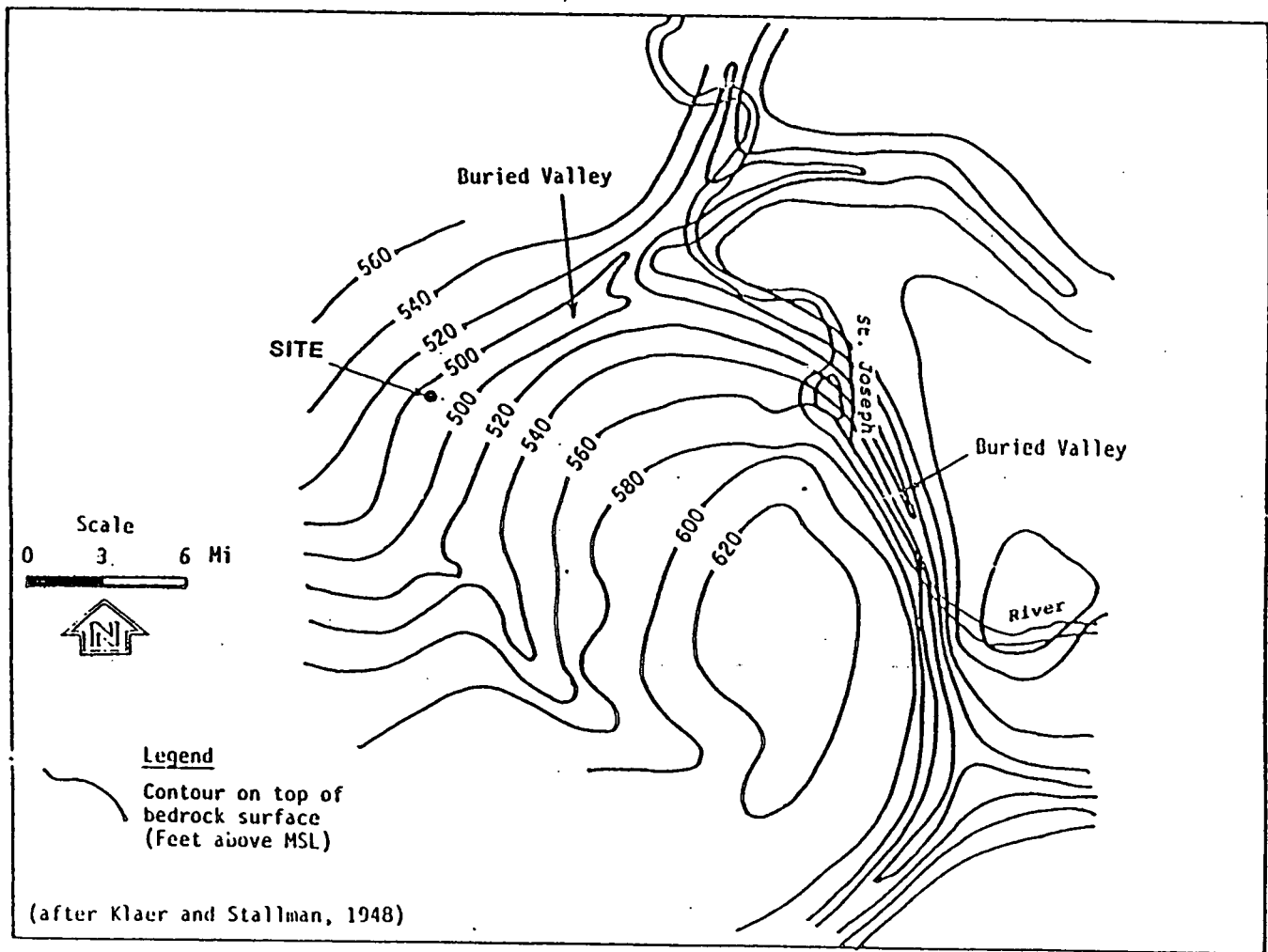


Figure 4

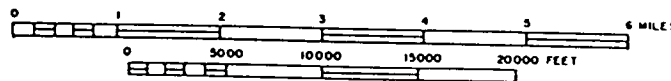
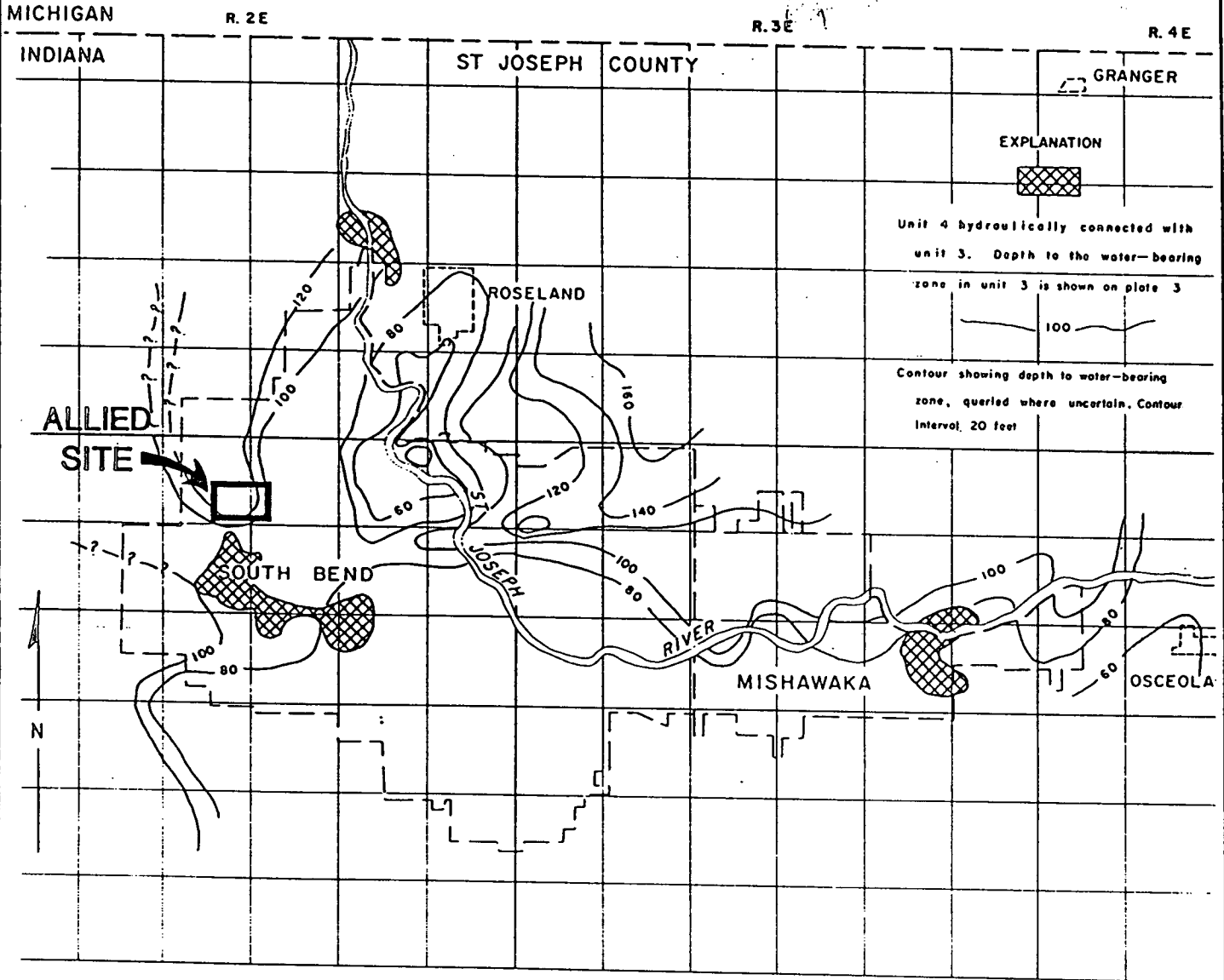
LOCAL BEDROCK  
STRUCTURAL FEATURES



STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF WATER

GEOHYDROLOGY AND GROUND WATER  
POTENTIAL OF  
ST. JOSEPH COUNTY, INDIANA

1969



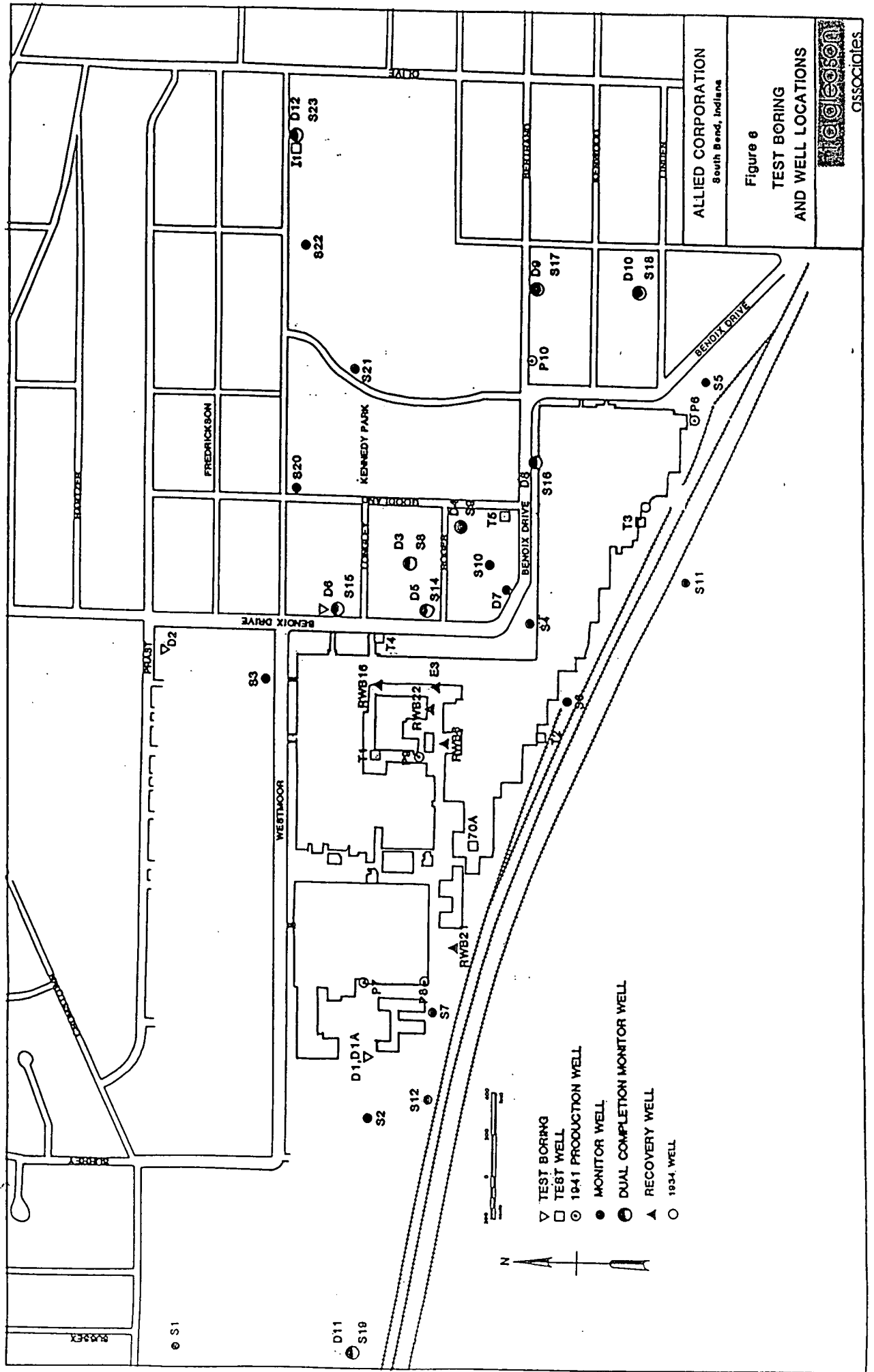
GEOLOGICAL SURVEY  
UNITED STATES DEPARTMENT OF THE INTERIOR  
in cooperation with the  
DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES

Figure 5

AREAS WHERE SHALLOW AND DEEP AQUIFERS  
ARE IN HYDRAULIC COMMUNICATION

t a gleason  
associates



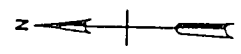


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South Bend, Indiana

Figure 6  
TEST BORING  
AND WELL LOCATIONS



- ▽ TEST BORING
- TEST WELL
- 1941 PRODUCTION WELL
- MONITOR WELL
- DUAL COMPLETION MONITOR WELL
- ▲ RECOVERY WELL
- 1934 WELL





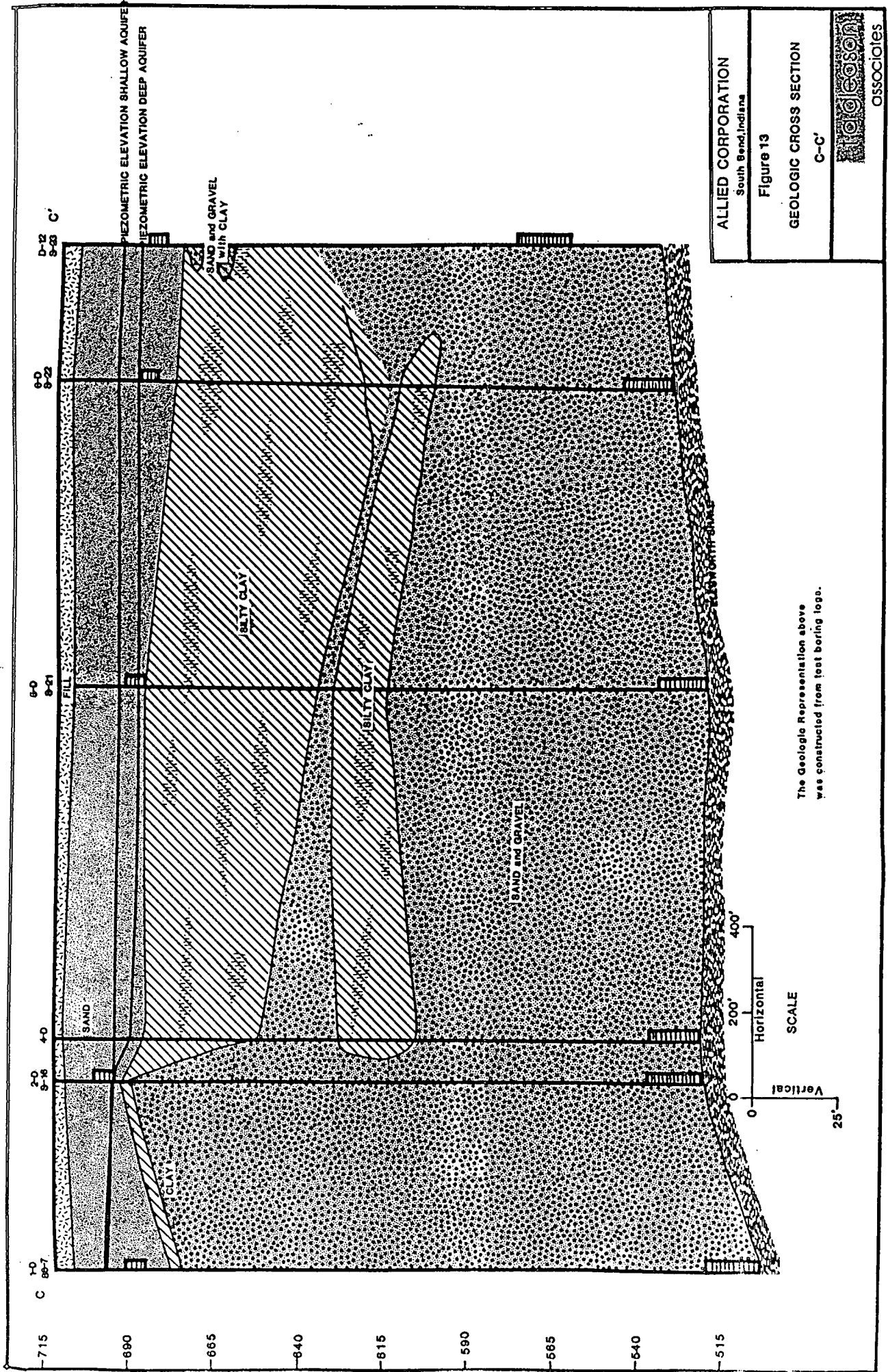








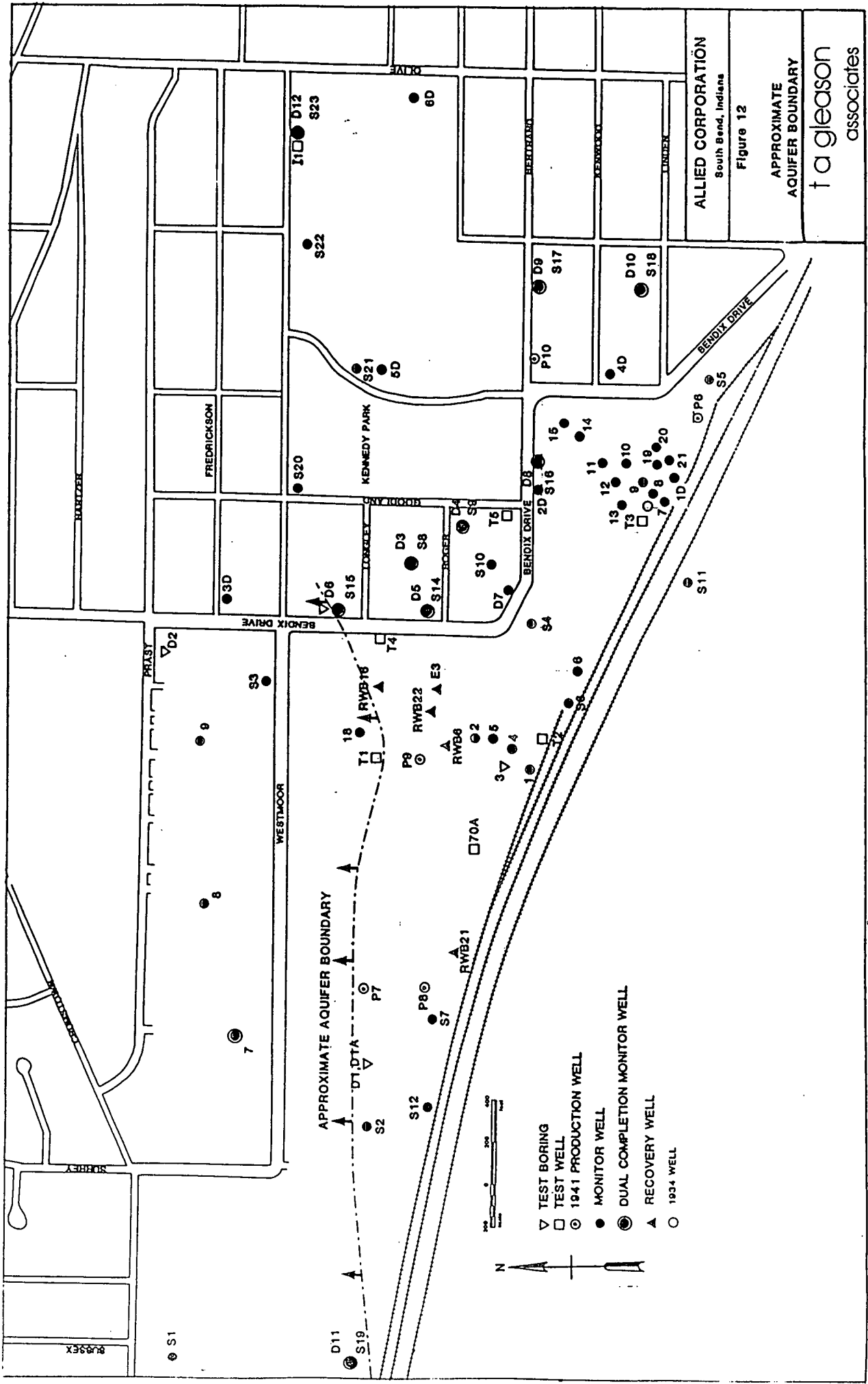




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 South Bend, Indiana  
 Figure 13  
 GEOLOGIC CROSS SECTION  
 C-C'







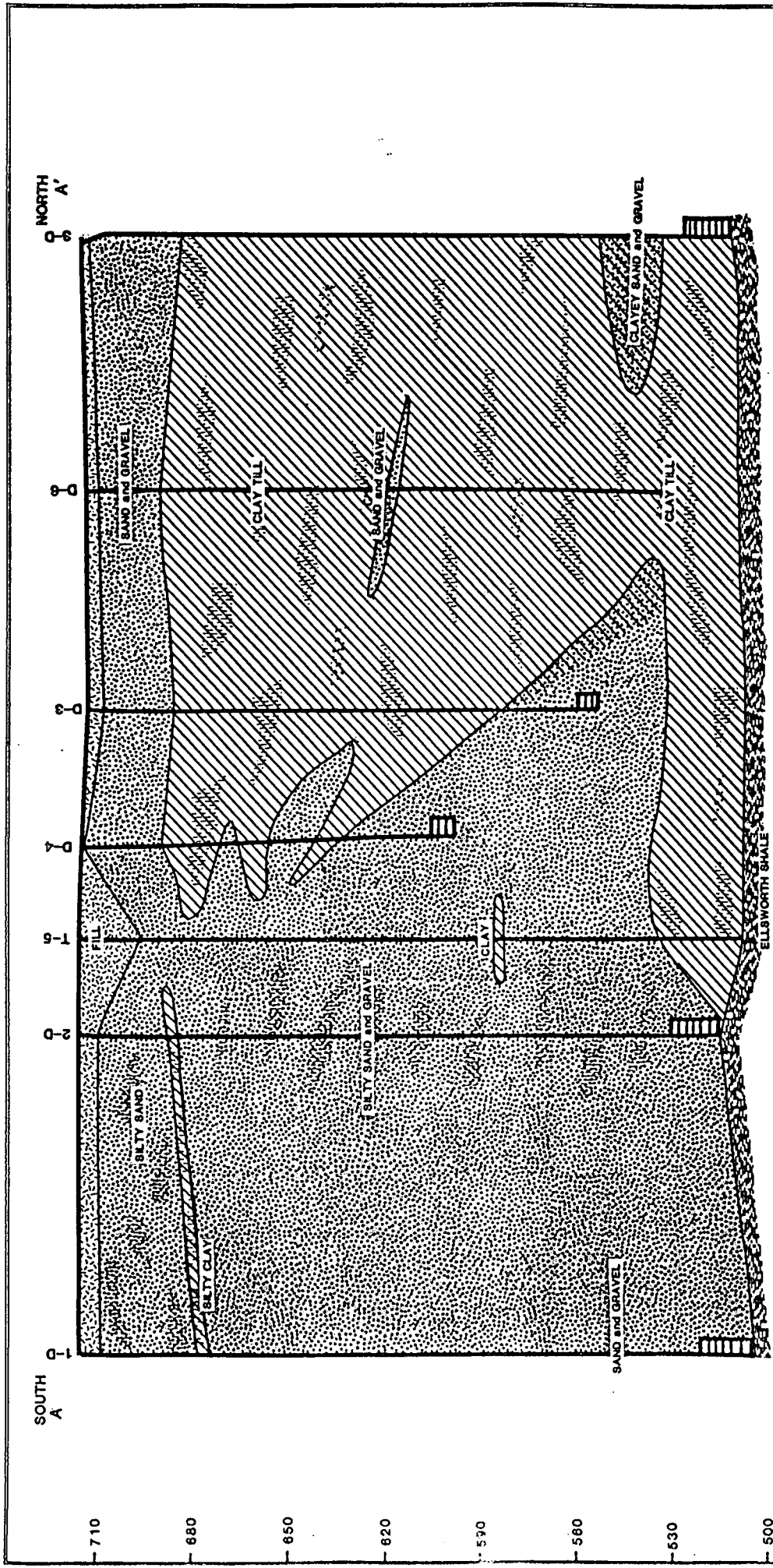
ALLIED CORPORATION  
South Bend, Indiana

Figure 12

APPROXIMATE  
AQUIFER BOUNDARY

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Figure 11  
 GEOLOGIC CROSS SECTION  
 A - A'

**Stroobson**  
 Associates

0 100' 200'  
 Horizontal

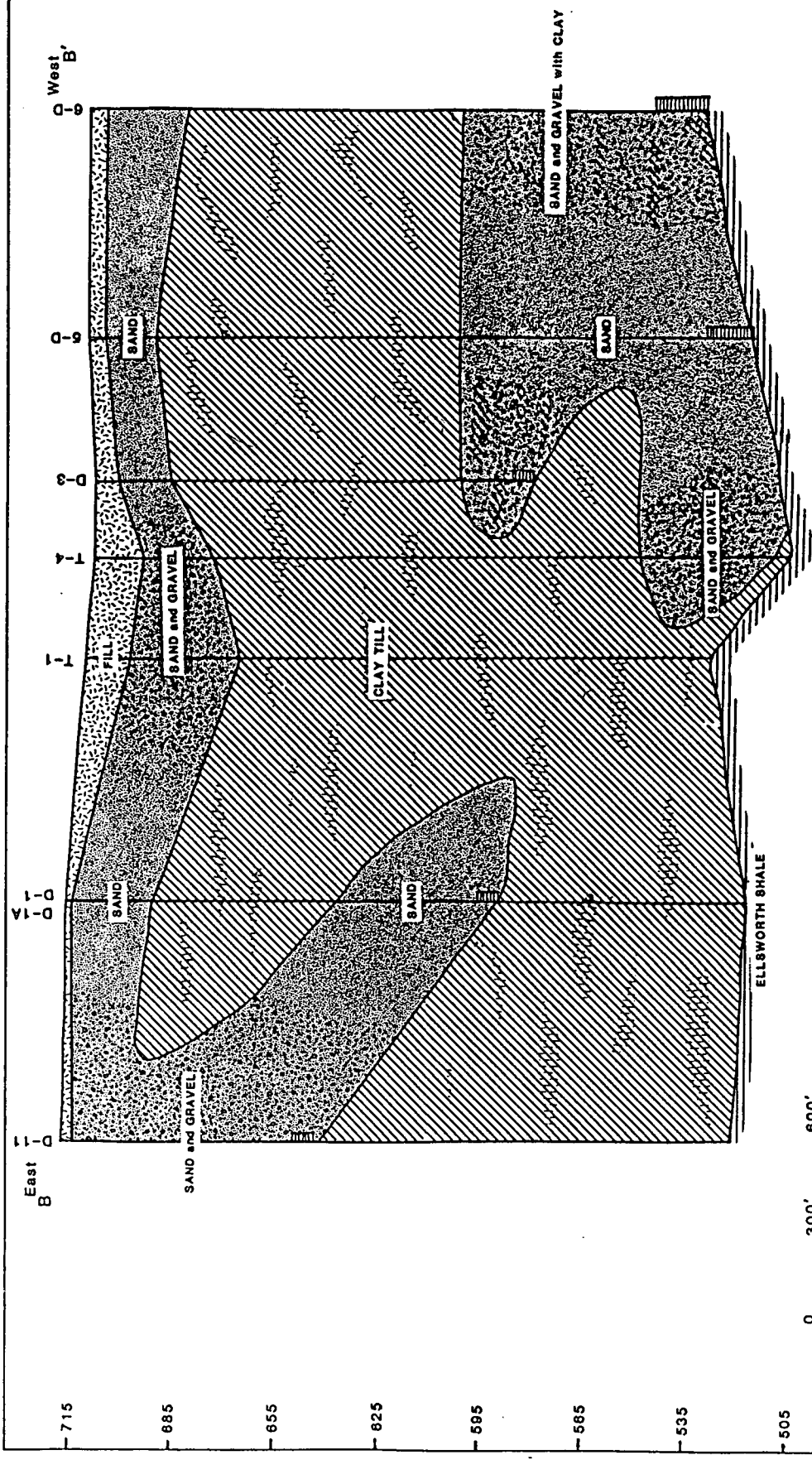
0 15' 30'  
 Vertical

SCALE

The Geologic Representation above  
 was constructed from test boring logs.





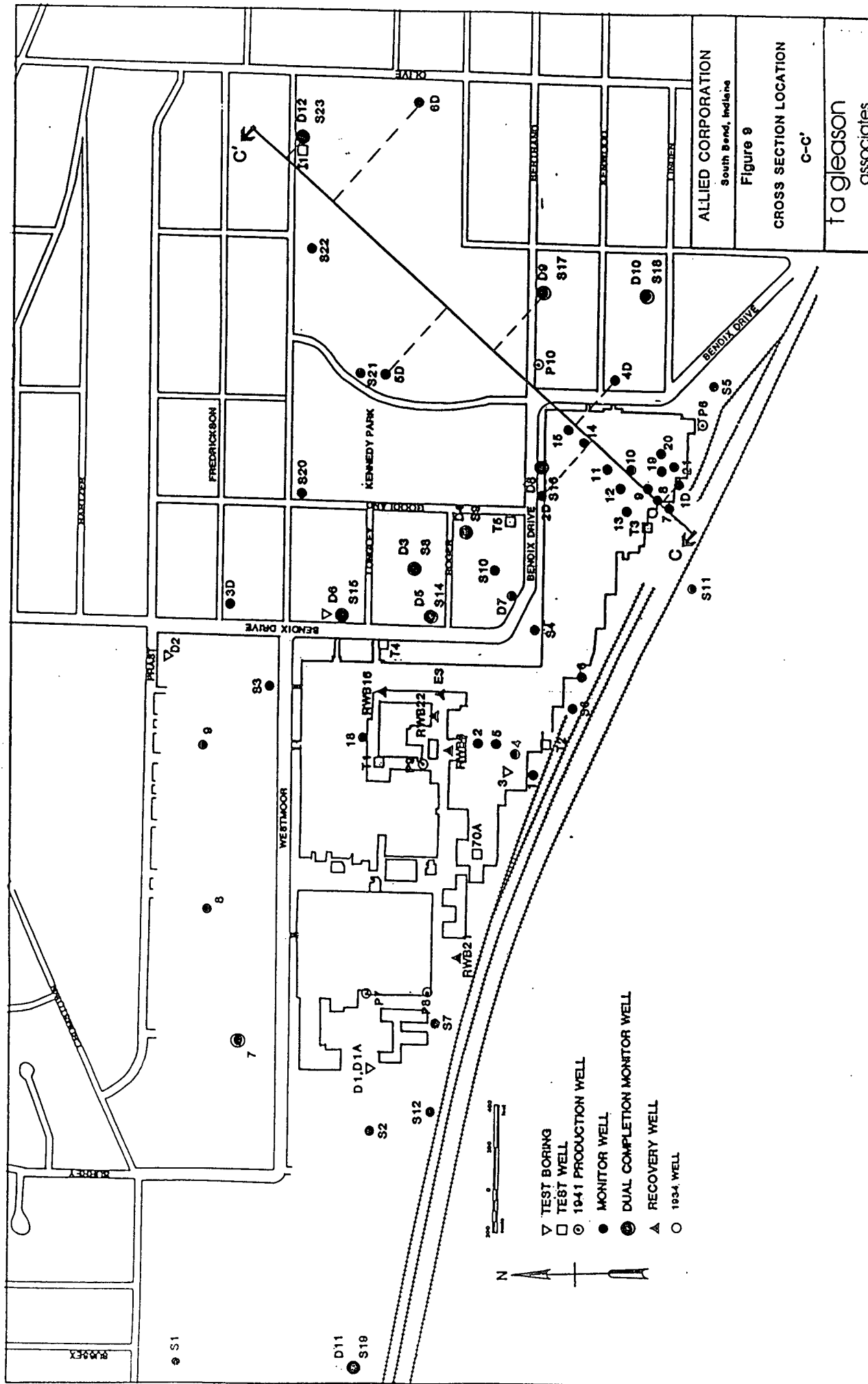


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 South Bend, Indiana

Figure 10  
 GEOLOGIC CROSS SECTION  
 B - B'

Geologic Associates





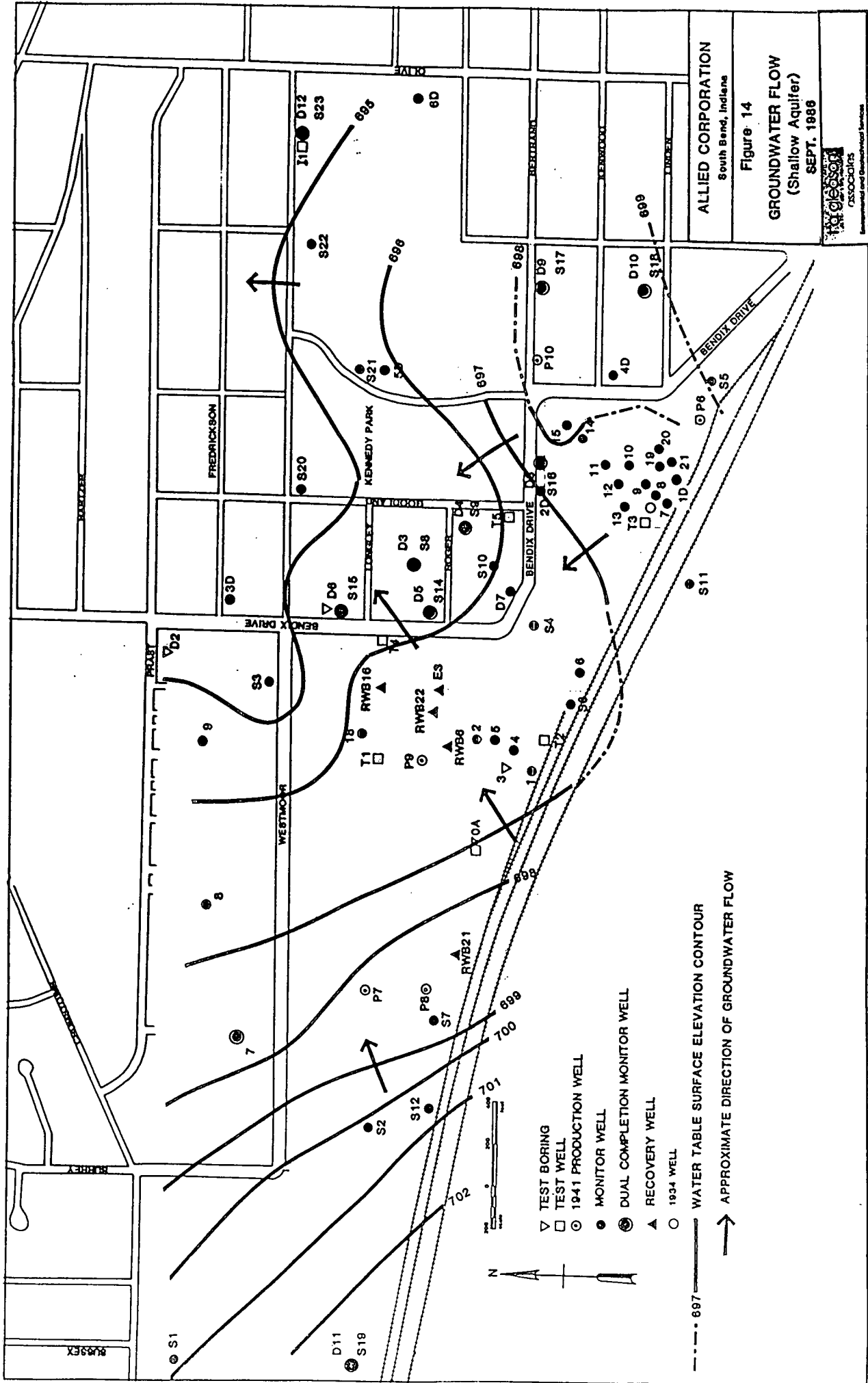
ALLIED CORPORATION  
South Bend, Indiana

Figure 9

CROSS SECTION LOCATION  
C-C'

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associates



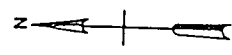


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 South Bend, Indiana  
 Figure 14  
 GROUNDWATER FLOW  
 (Shallow Aquifer)  
 SEPT. 1986

1010  
 ASSOCIATES  
 Environmental and Geotechnical Services

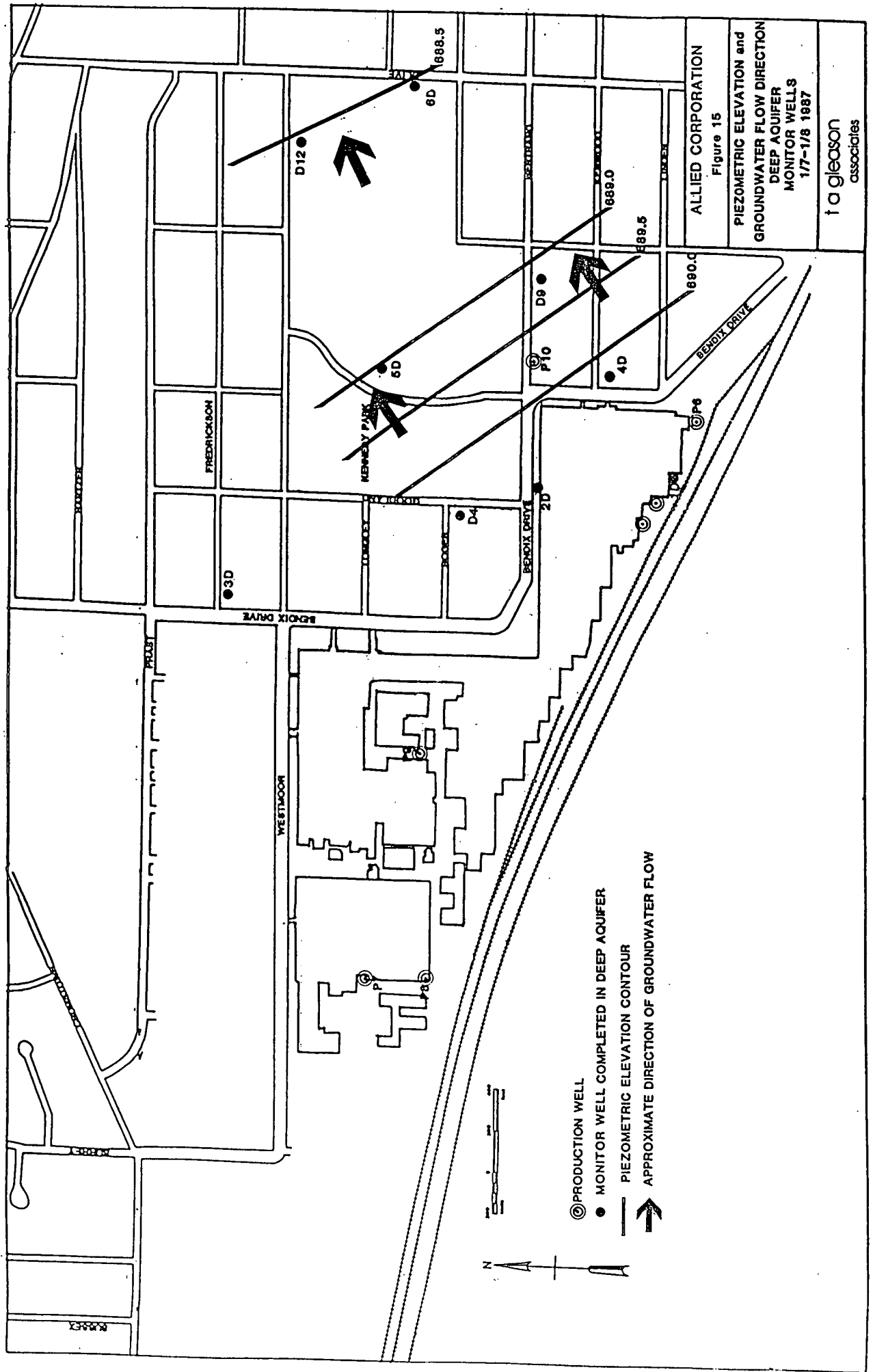
- ▽ TEST BORING
- TEST WELL
- 1941 PRODUCTION WELL
- MONITOR WELL
- ⊙ DUAL COMPLETION MONITOR WELL
- ▲ RECOVERY WELL
- 1934 WELL

--- 697 --- WATER TABLE SURFACE ELEVATION CONTOUR  
 → APPROXIMATE DIRECTION OF GROUNDWATER FLOW



RUS93EX



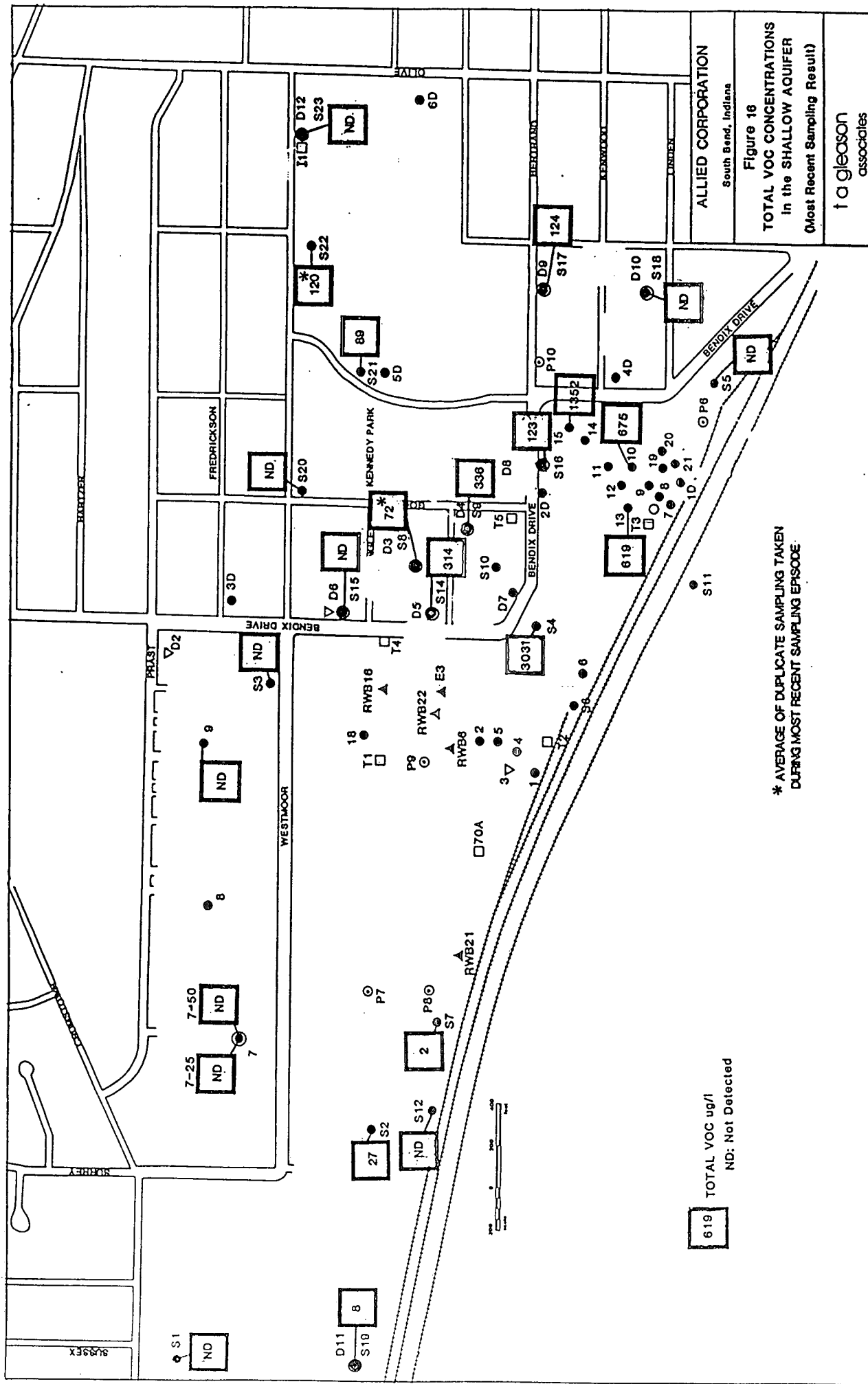


- ⊙ PRODUCTION WELL
- MONITOR WELL COMPLETED IN DEEP AQUIFER
- - - PIEZOMETRIC ELEVATION CONTOUR
- ➔ APPROXIMATE DIRECTION OF GROUNDWATER FLOW

ALLIED CORPORATION  
 Figure 15  
 PIEZOMETRIC ELEVATION and  
 GROUNDWATER FLOW DIRECTION  
 DEEP AQUIFER  
 MONITOR WELLS  
 1/7-1/8 1987  
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 associates







**Figure 16**  
**TOTAL VOC CONCENTRATIONS**  
**in the SHALLOW AQUIFER**  
**(Most Recent Sampling Result)**

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 South Bend, Indiana

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 associates

\* AVERAGE OF DUPLICATE SAMPLING TAKEN  
 DURING MOST RECENT SAMPLING EPISODE

619 TOTAL VOC ug/l  
 ND: Not Detected

9439EX



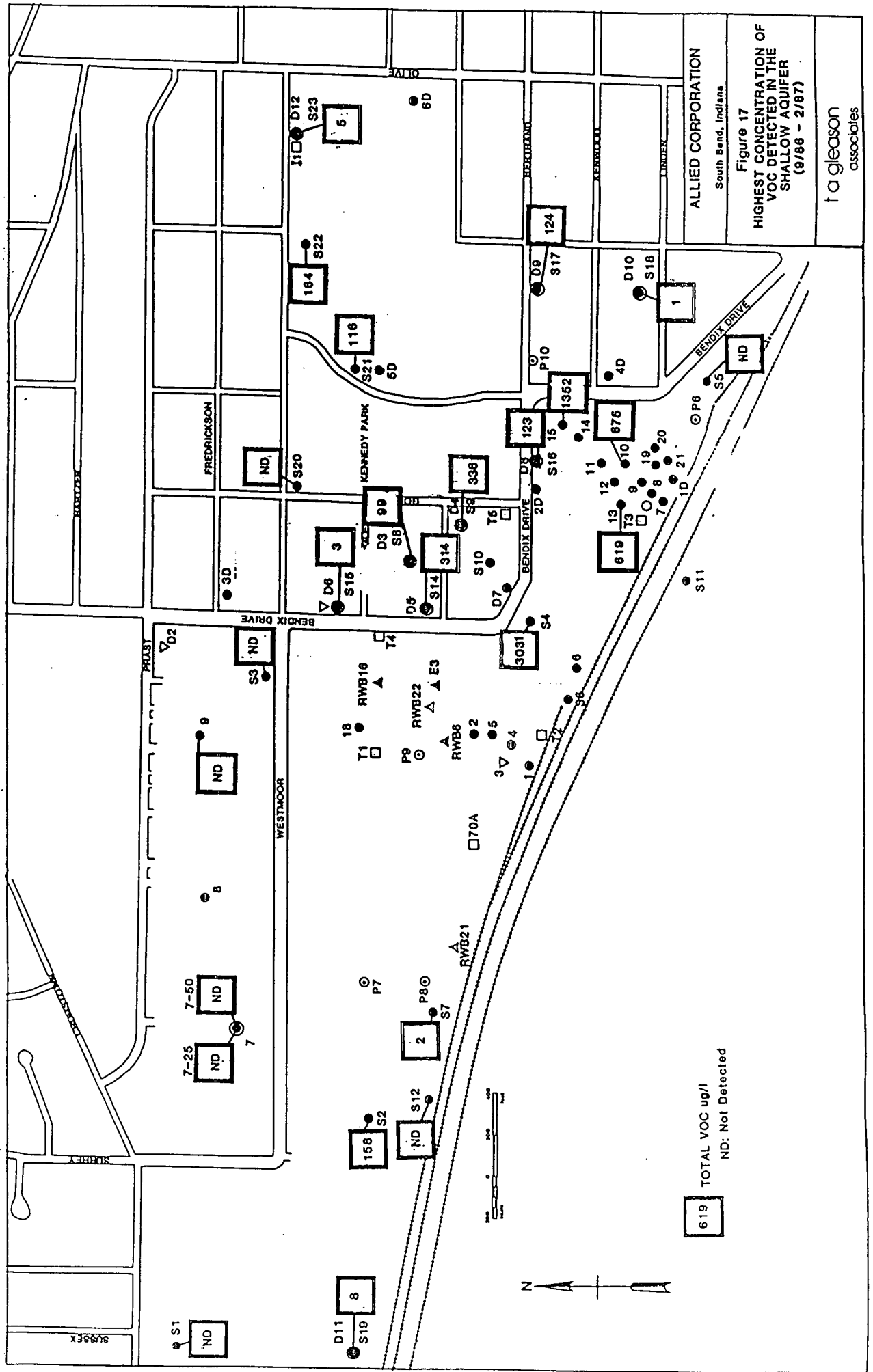


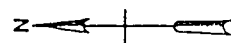
Figure 17  
 HIGHEST CONCENTRATION OF  
 VOC DETECTED IN THE  
 SHALLOW AQUIFER  
 (8/88 - 2/87)

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 South Bend, Indiana

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 associates

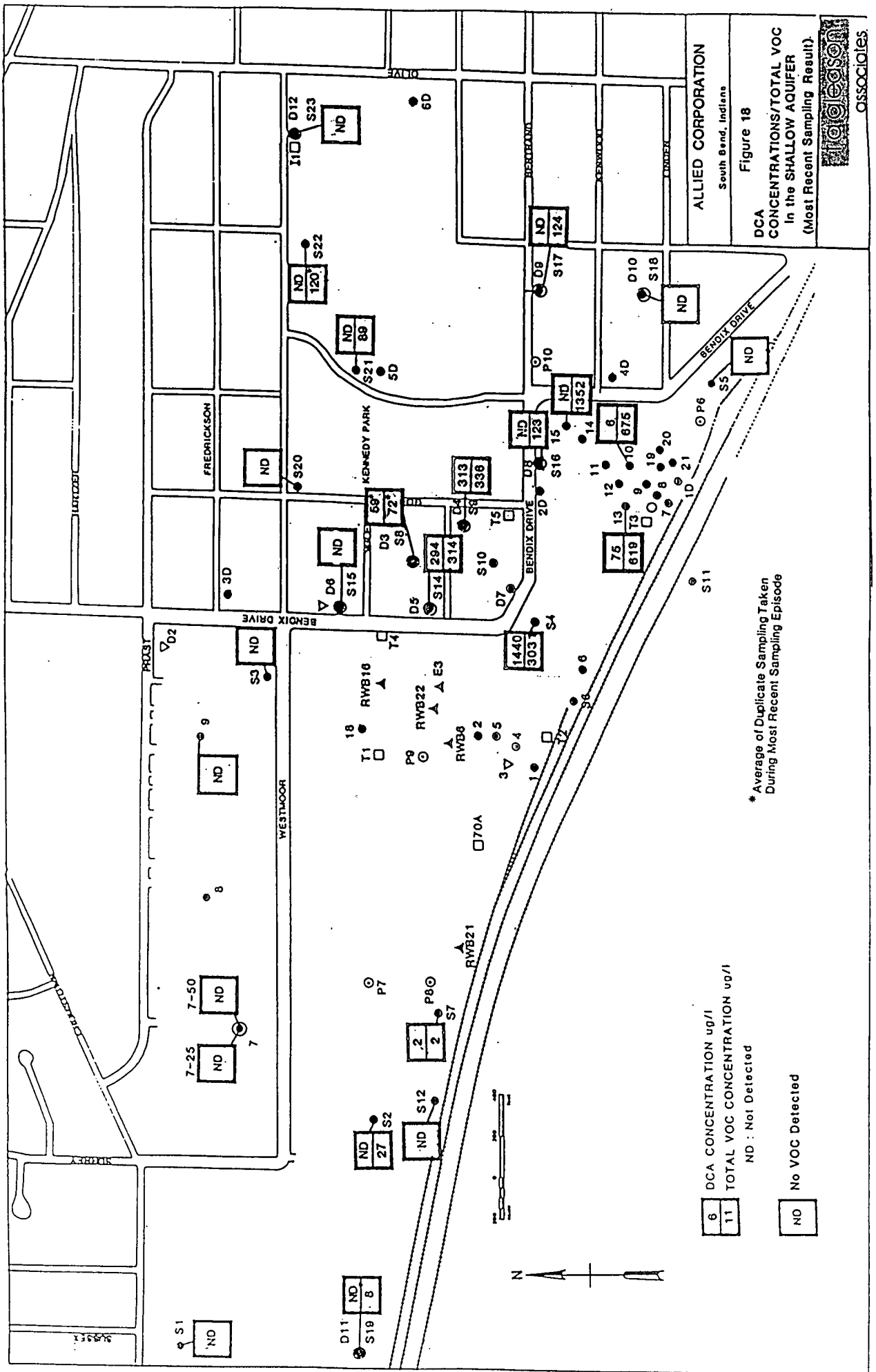
TOTAL VOC ug/l  
 ND: Not Detected

619



84936X





6 DCA CONCENTRATION ug/l  
11 TOTAL VOC CONCENTRATION ug/l  
 ND : Not Detected  
ND No VOC Detected

\* Average of Duplicate Sampling Taken During Most Recent Sampling Episode

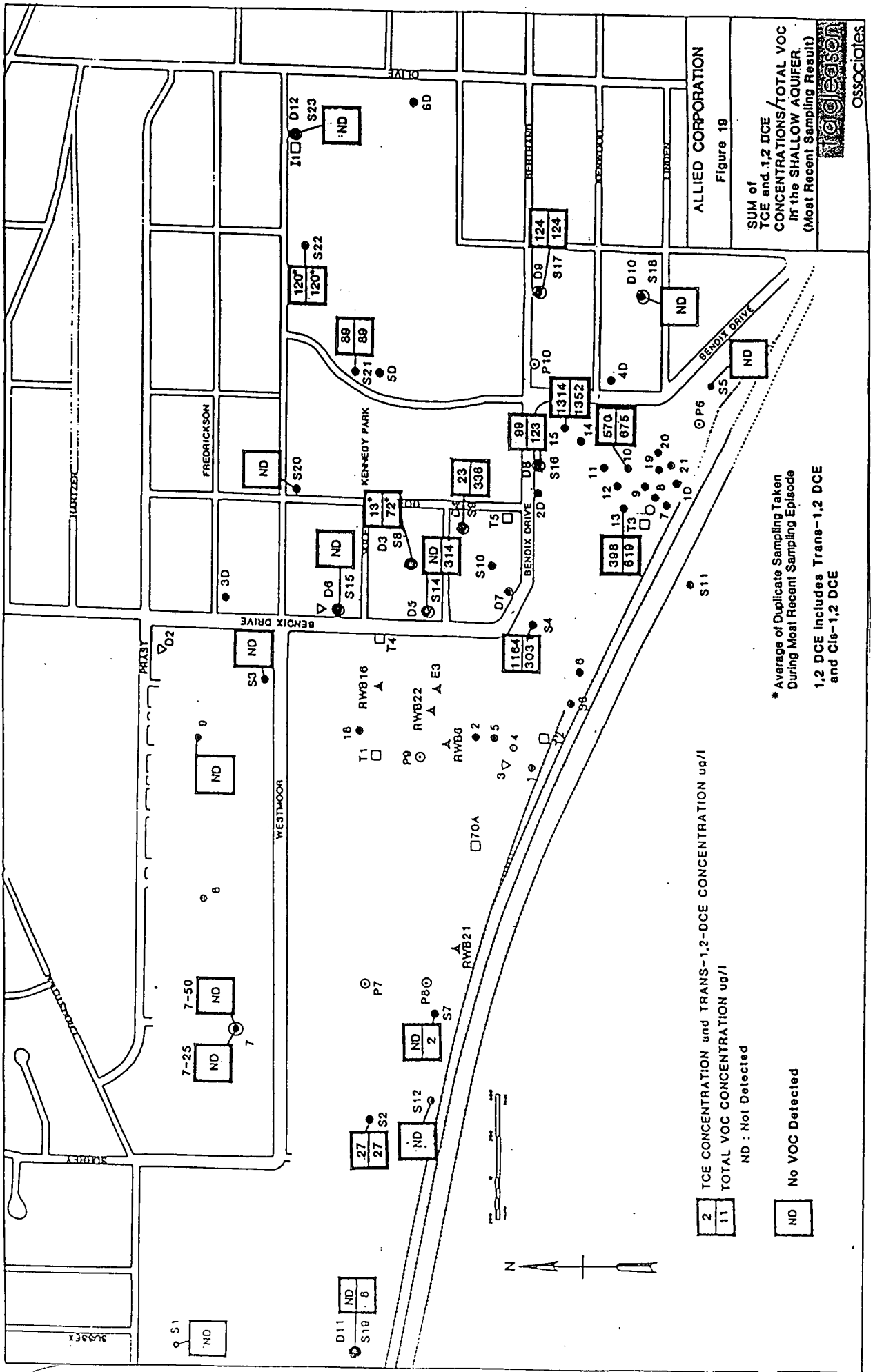
Figure 18  
 DCA CONCENTRATIONS/TOTAL VOC IN THE SHALLOW AQUIFER (Most Recent Sampling Result).

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2	TCE CONCENTRATION and TRANS-1,2-DCE CONCENTRATION ug/l
11	TOTAL VOC CONCENTRATION ug/l
ND	No VOC Detected

ND : Not Detected

\* Average of Duplicate Sampling Taken During Most Recent Sampling Episode  
 1,2 DCE Includes Trans-1,2 DCE and Cis-1,2 DCE

SUM of TCE and 1,2 DCE CONCENTRATIONS/TOTAL VOC in the SHALLOW AQUIFER (Most Recent Sampling Result)

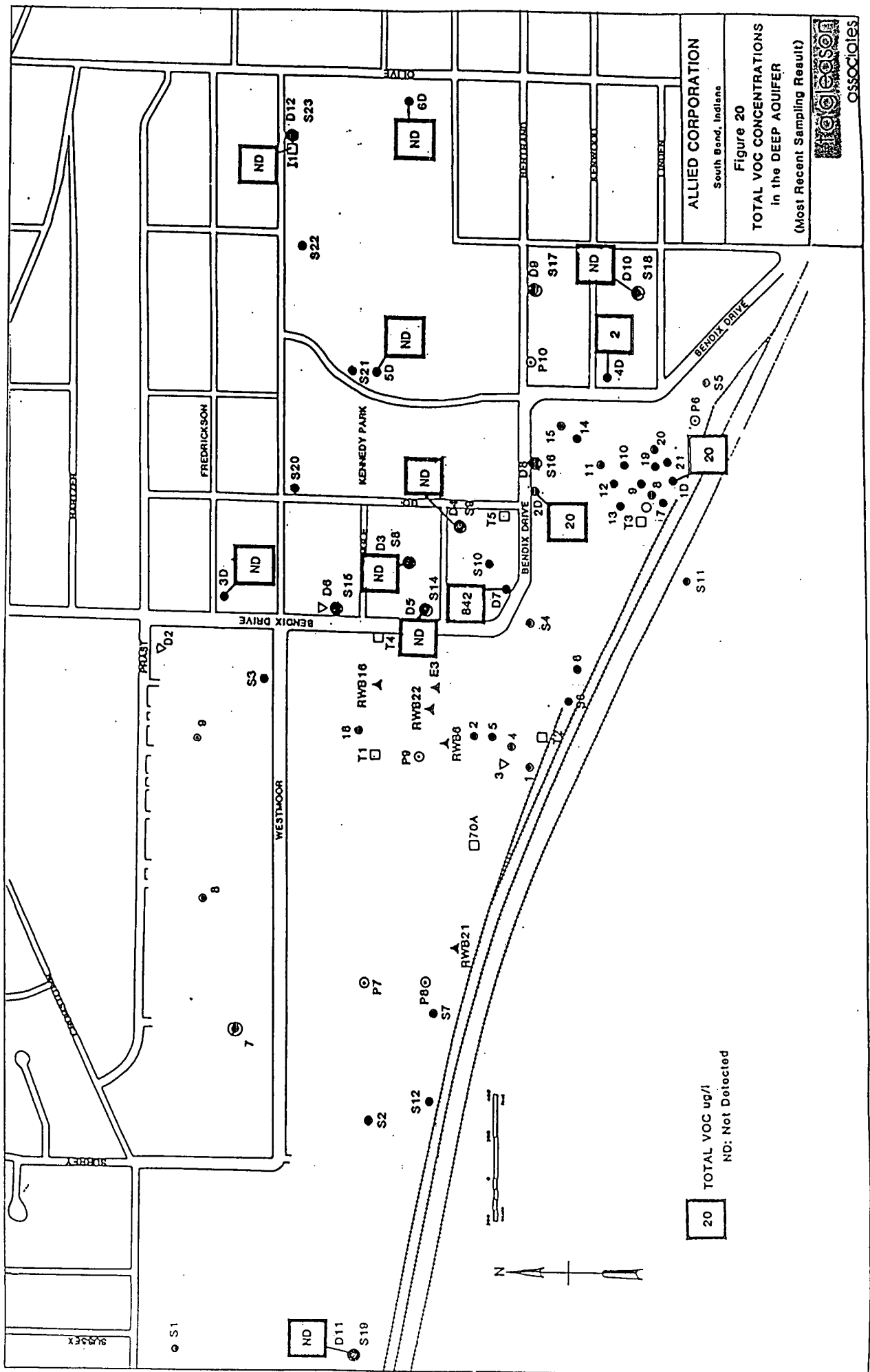
Figure 19

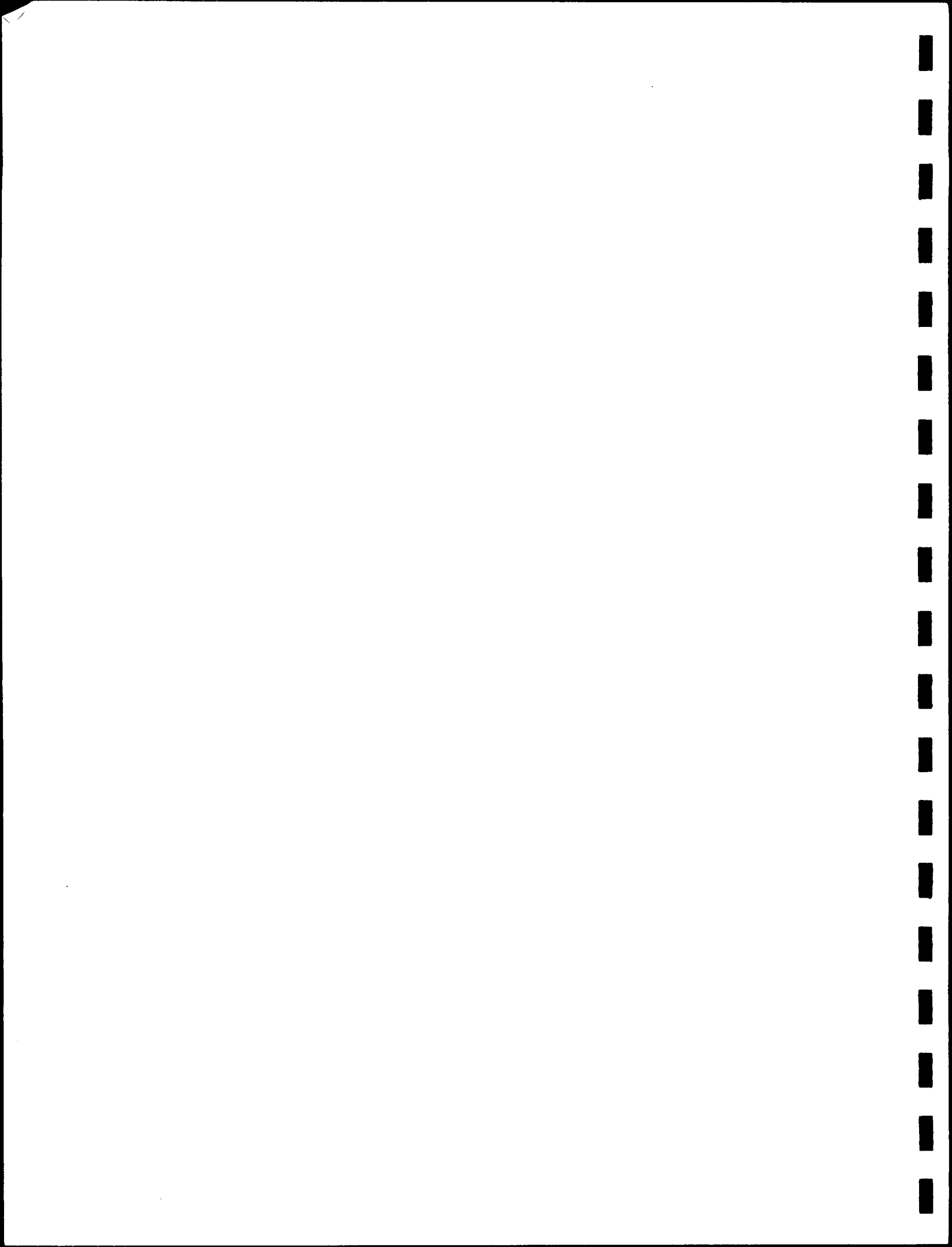


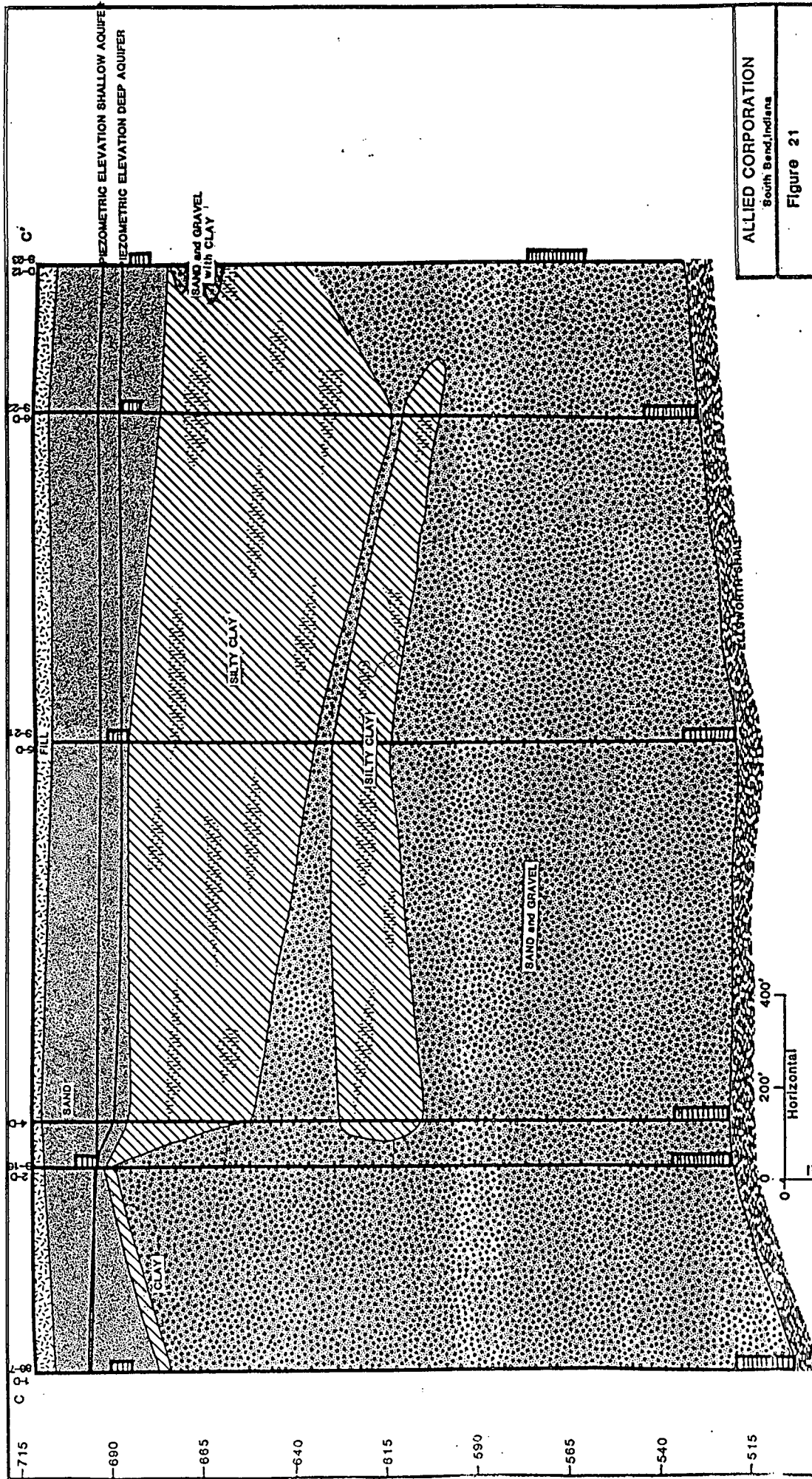
ASSOCIATES











ALLIED CORPORATION  
 South Bend, Indiana

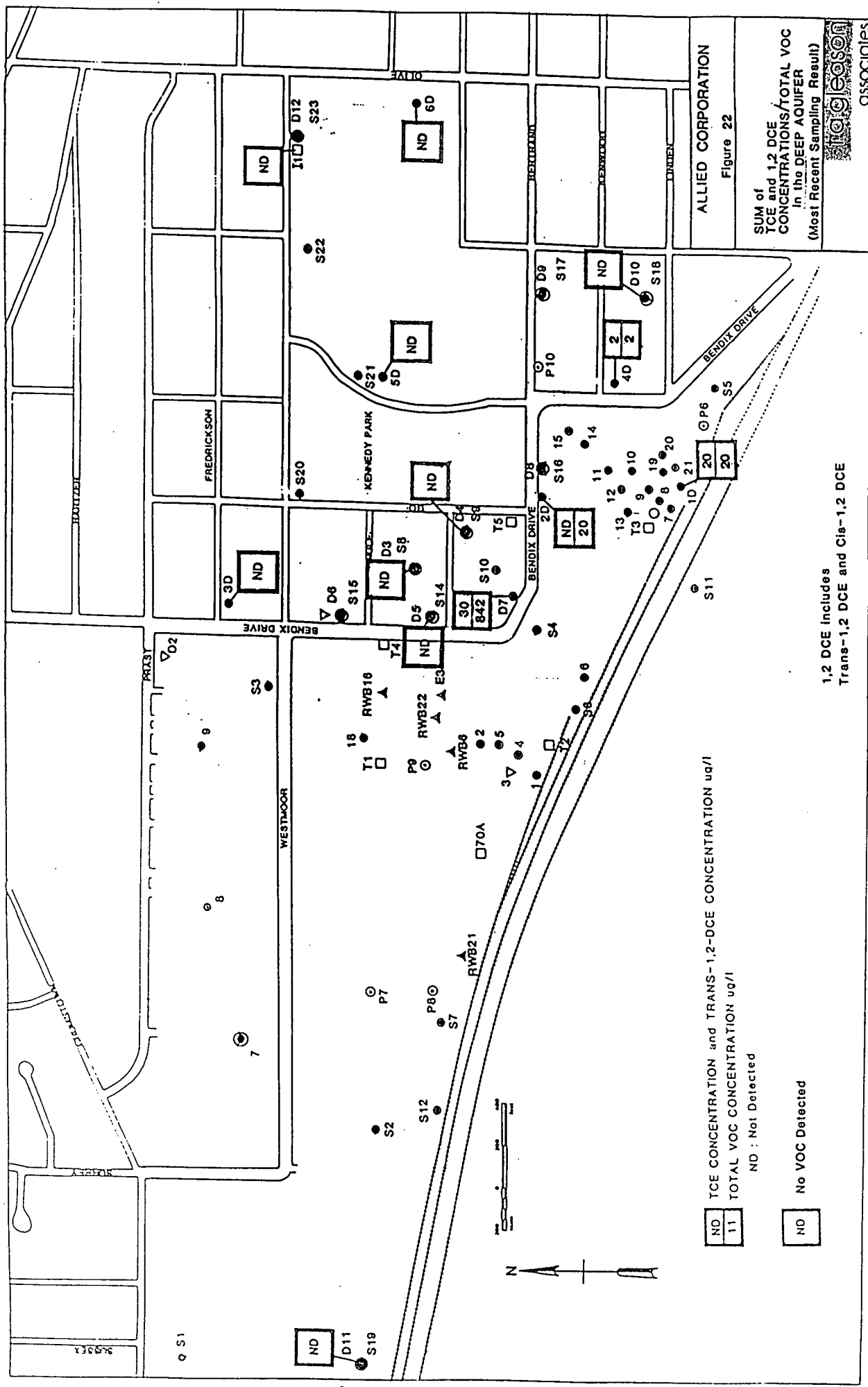
Figure 21

GEOLOGIC CROSS SECTION  
 C-C'

HOLEASON  
 ASSOCIATES

The Geologic Representation above  
 was constructed from test boring logs.





ND	TCE CONCENTRATION and TRANS-1,2-DCE CONCENTRATION ug/l
11	TOTAL VOC CONCENTRATION ug/l

ND : Not Detected

ND	No VOC Detected
----	-----------------

1,2 DCE Includes  
Trans-1,2 DCE and Cis-1,2 DCE

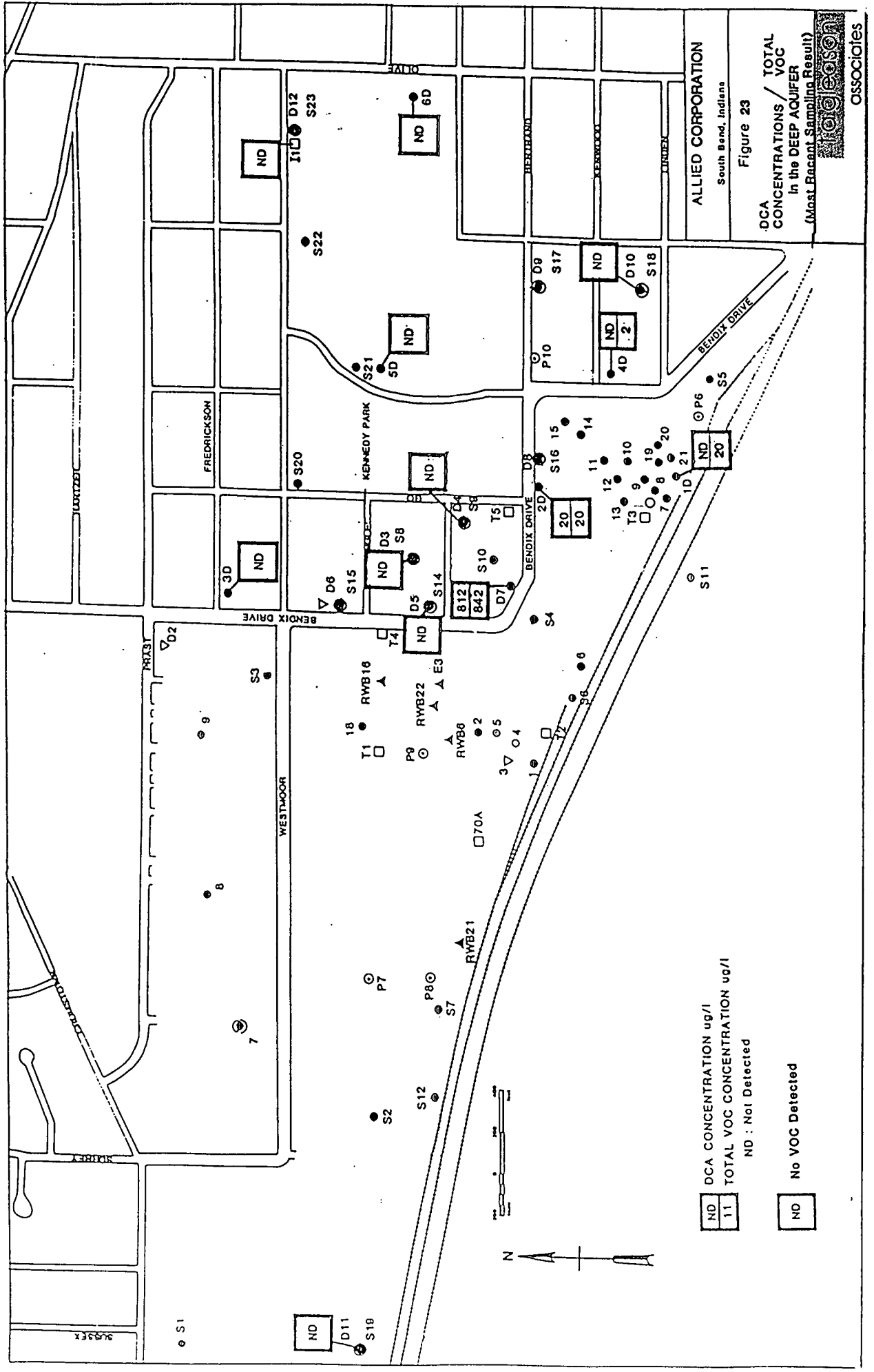
**ALLIED CORPORATION**  
 Figure 22

SUM of  
 TCE and 1,2 DCE  
 CONCENTRATIONS/TOTAL VOC  
 in the DEEP AQUIFER  
 (Most Recent Sampling Result)



ASSOCIATES





DCA CONCENTRATION ug/l  
 TOTAL VOC CONCENTRATION ug/l  
 ND : Not Detected  
 No VOC Detected

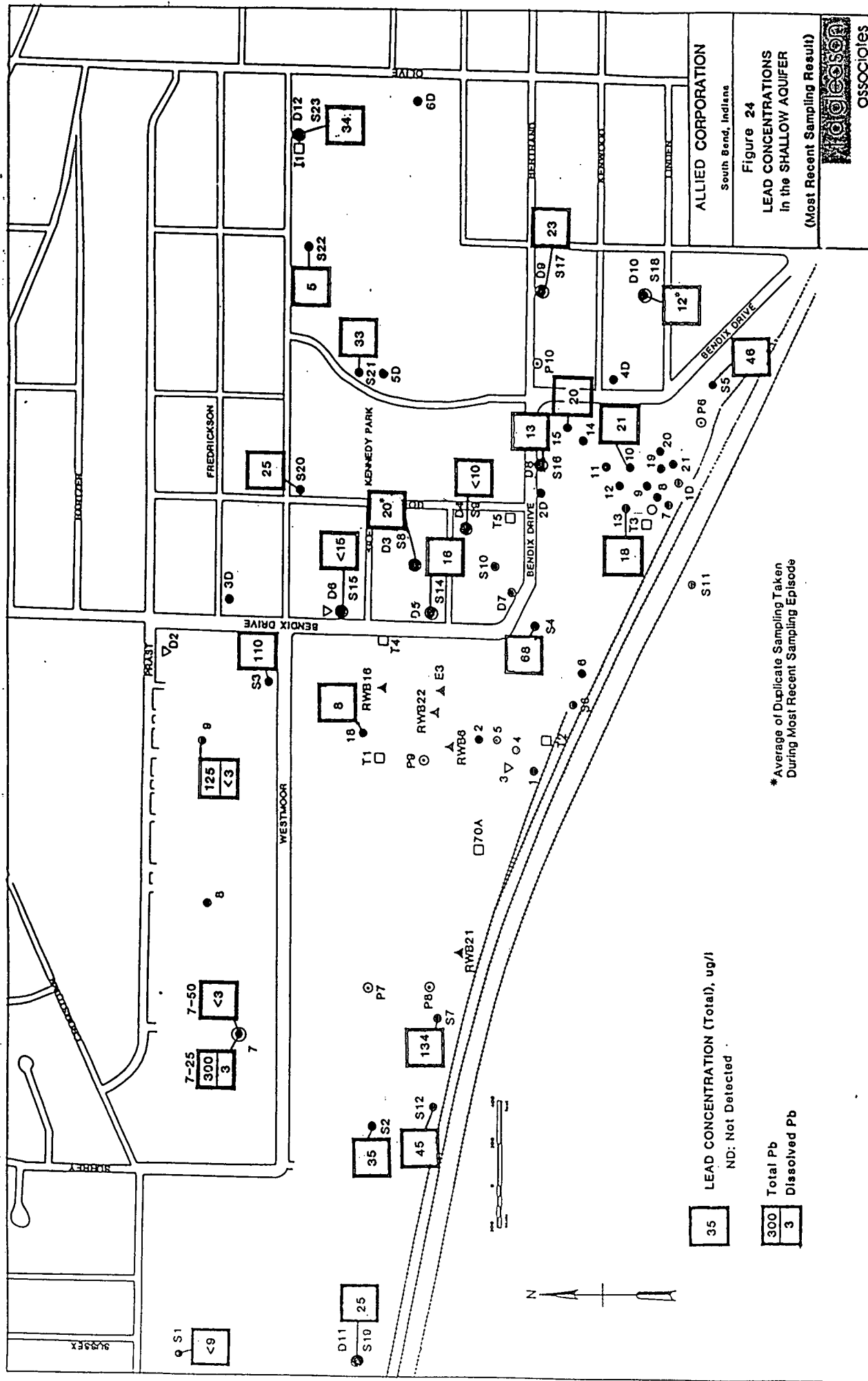
ALLIED CORPORATION  
 South Bend, Indiana  
 Figure 23  
 DCA CONCENTRATIONS / TOTAL VOC CONCENTRATIONS / VOC IN THE DEEP AQUIFER (Most Recent Sampling Result)



ASSOCIATES







35 LEAD CONCENTRATION (Total), ug/l  
 ND: Not Detected

300 Total Pb  
 3 Dissolved Pb

\* Average of Duplicate Sampling Taken  
 During Most Recent Sampling Episode

ALLIED CORPORATION  
 South Bend, Indiana  
 Figure 24  
 LEAD CONCENTRATIONS  
 In the SHALLOW AQUIFER  
 (Most Recent Sampling Result)



ASSOCIATES

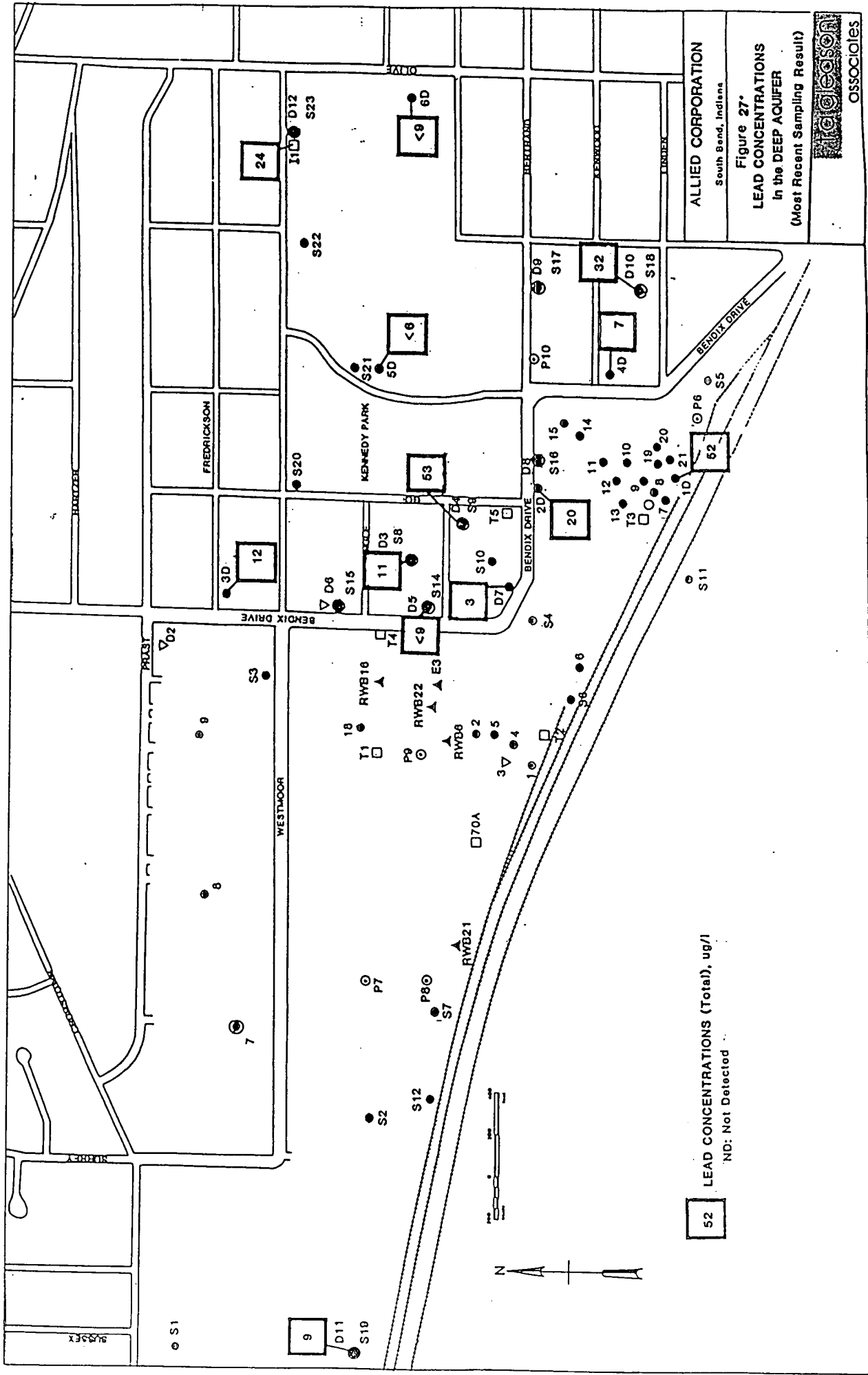












52 LEAD CONCENTRATIONS (Total), ug/l  
 ND: Not Detected

ALLIED CORPORATION  
 South Bend, Indiana

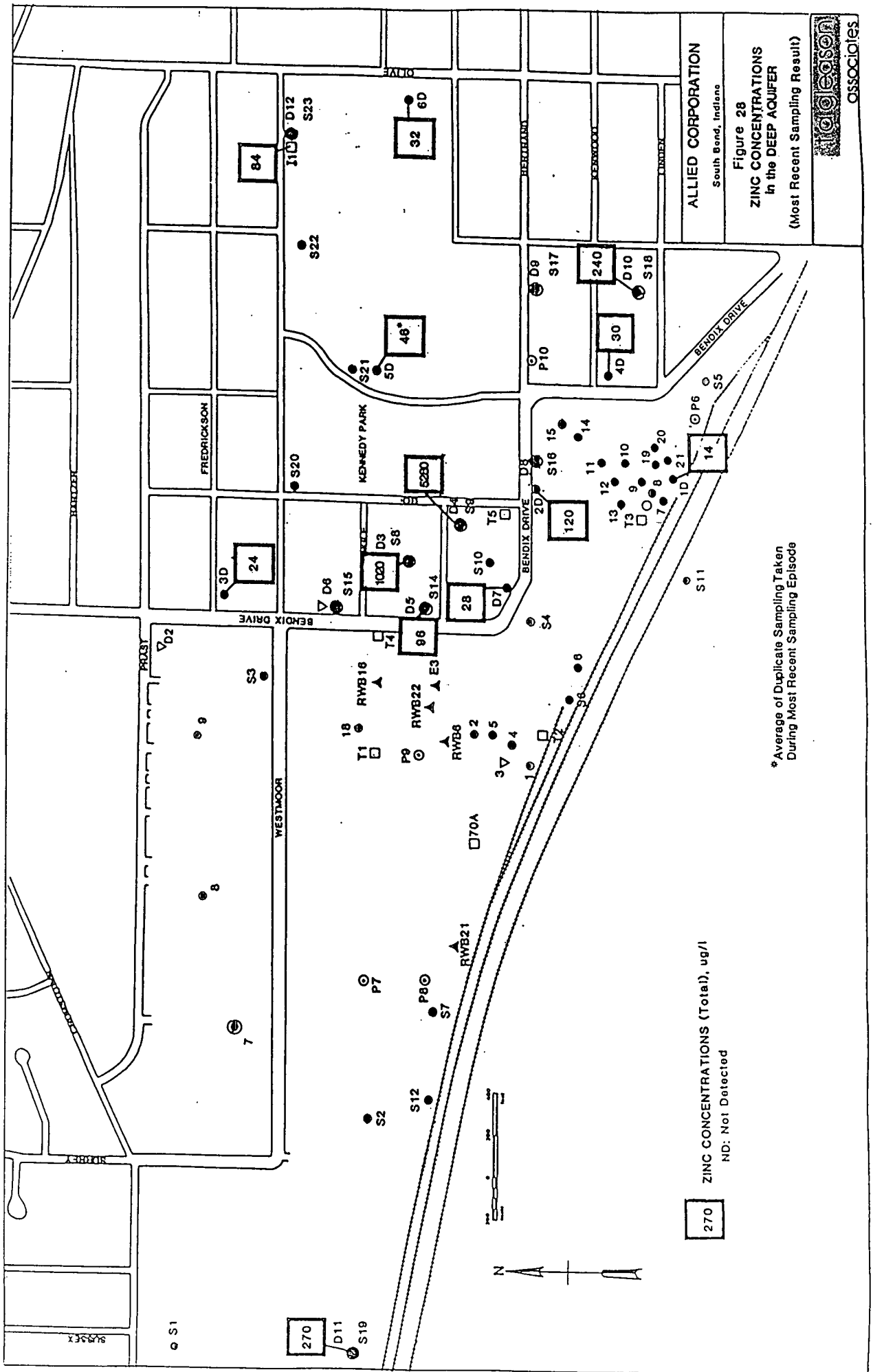
Figure 27\*  
 LEAD CONCENTRATIONS  
 in the DEEP AQUIFER  
 (Most Recent Sampling Result)



ASSOCIATES







270 ZINC CONCENTRATIONS (Total), ug/l  
 ND: Not Detected

\* Average of Duplicate Sampling Taken  
 During Most Recent Sampling Episode

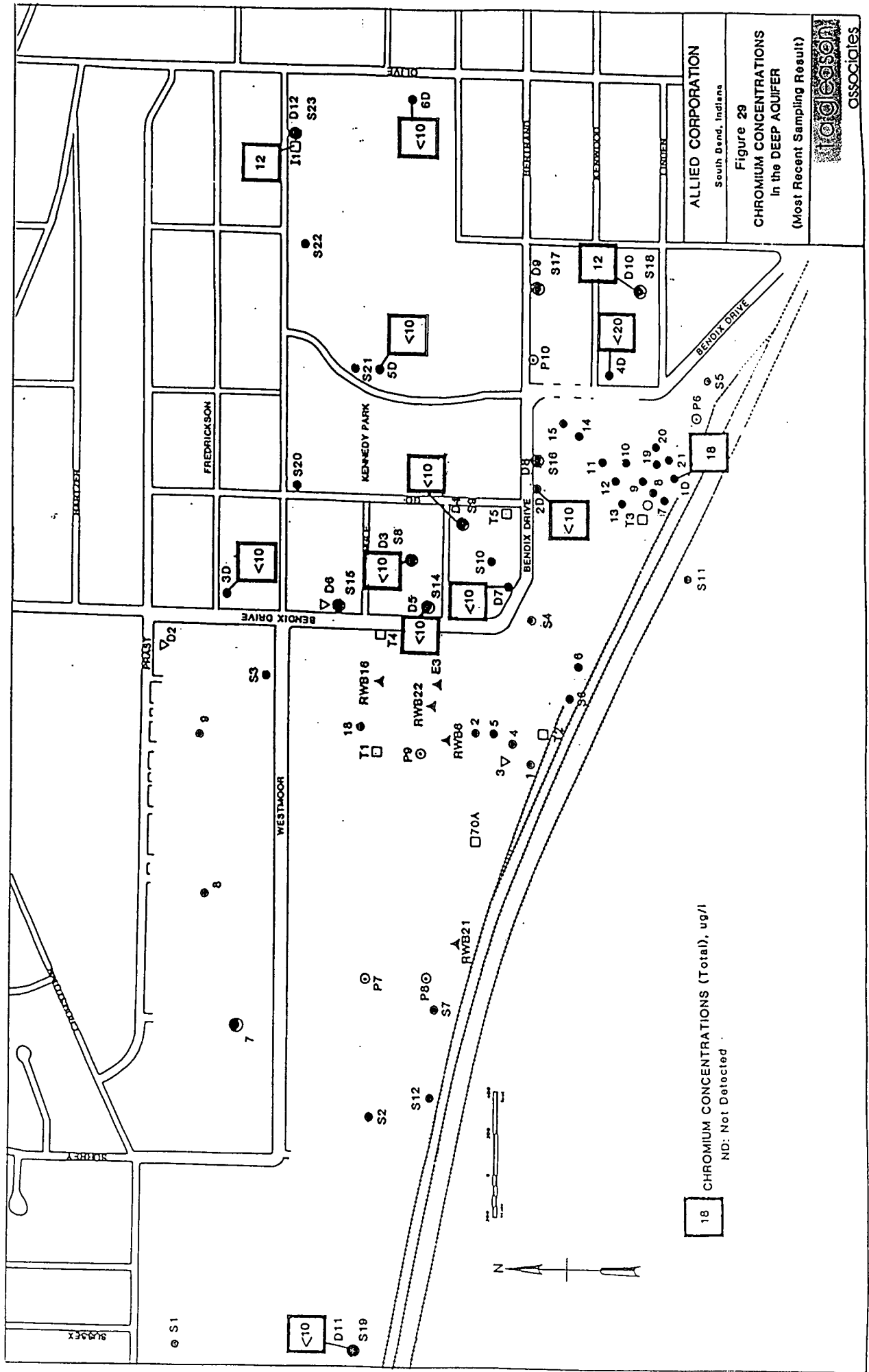
ALLIED CORPORATION  
 South Bend, Indiana

Figure 28  
 ZINC CONCENTRATIONS  
 in the DEEP AQUIFER  
 (Most Recent Sampling Result)



ASSOCIATES





18 CHROMIUM CONCENTRATIONS (Total), ug/l  
 ND: Not Detected

ALLIED CORPORATION  
 South Bend, Indiana

Figure 29  
 CHROMIUM CONCENTRATIONS  
 in the DEEP AQUIFER  
 (Most Recent Sampling Result)



















PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS (VOC)

TRANS-1,2-DI- CHLORO-ETHYLENE	1,1-DI- CHLORO-ETHYLENE	1,1-DI- CHLORO-ETHYLENE	1,1-DI- CHLORO-ETHYLENE	TRI- CHLORO-ETHYLENE	SUM	CHLORO- BENZENE	ETHYL- BENZENE	TOLUENE	NOTE A NEUTRAL COMPOUNDS	NOTE B BIS (2-ETHYLHEXYL) PHTHALATE	NOTE 8 DI-N- OCTYL PHTHALATE	NOTE C ACID FRACTION	NOTE D CIS-1,2- DICHLORO- 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

WELL NO.	DATE	SAMPLE #	LAB	TRANS-1,2-DI- CHLORO-ETHYLENE	1,1-DI- CHLORO-ETHYLENE	1,1-DI- CHLORO-ETHYLENE	1,1-DI- CHLORO-ETHYLENE	TRI- CHLORO-ETHYLENE	SUM	CHLORO- BENZENE	ETHYL- BENZENE	TOLUENE	NOTE A NEUTRAL COMPOUNDS	NOTE B BIS (2-ETHYLHEXYL) PHTHALATE	NOTE 8 DI-N- OCTYL PHTHALATE	NOTE C ACID FRACTION	NOTE D CIS-1,2- DICHLORO- ETHENE
S-16	11/06/86	11	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.1			
	12/18/86	19	AQUA	ND	ND	22.5	70.1	93					ND			ND	
	12/18/86	29	AQUA	ND	ND	21.5	63.8	85					ND			ND	
	02/12/87	11	AQUA	ND	ND	4.4	23.3	95	123								
S-17	11/06/86	16	AQUA	4.3	ND	ND	12.0	18						ND			
	01/07/87	4	AQUA	ND	ND	ND	94.8	95									
	02/12/87	3	AQUA	ND	ND	7.9	116	124									
S-18	11/06/86	12	AQUA	ND	ND	ND	1.3	1						ND			
	11/06/86	13	AQUA	ND	ND	ND	ND	ND						ND			
	11/06/86	14	HOWARD	ND	ND	ND	ND	ND					ND				
S-19	11/05/86	2	AQUA	ND	ND	8.1	ND	8						3.0			

TABLE 1

GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 5 OF 8

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT # ALCHPX SBIN 00A

T A GLEASON ASSOCIATES

ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES

NOTES:

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

ND = NOT DETECTED

SEE LAB REPORT FOR  
DETECTION LIMITS

A = RESULTS FROM ANALYSES  
FOR PRIORITY POLLUTANTS  
BASE NEUTRALS.

B = RESULTS FROM ANALYSES  
FOR PRIORITY POLLUTANTS  
PHTHALATE ESTERS.

C = RESULTS FROM ANALYSES  
FOR PRIORITY POLLUTANTS  
ACID FRACTION.

D = SAMPLED NON-PRIORITY  
POLLUTANT, CIS-1,2-DCE,  
DURING GCMS SCAN FOR  
PRIORITY POLLUTANT VOC.

SEE LAB REPORT

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

SEE LAB REPORT

























ECCINORI  
24-RAY-87

WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE		PH	TEMP	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS
				U6/L	U6/L																	
D-3	5	11/05/86	AQUA					3	4	1	1	10	8	11	0.3	10	16	4	3	1020	0.01	0.010
D-4	109	10/01/86	AQUA	870																	0.01	
	309	10/01/86	AQUA		6	4	1	1	10	4	30	0.3	10	10	4	3	280					
	13	02/12/87	AQUA	600																		
D-5	22	11/05/86	AQUA		3	7	1	1	10	24	9	0.3	10	4	3	44	0.03	0.025				
	22	12/18/86	AQUA		3	4	1	1	10	24	9	0.3	10	4	3	96	0.010	0.010				
D-7	108	10/01/86	AQUA	1110																	0.01	
	308	10/01/86	AQUA		6	4	1	1	20	10	11	0.3	20	4	10	320						
	26	11/06/86	AQUA		3	4	1	1	10	4	3	0.3	10	6	4	3	28	0.01	0.011			
D-10	15	11/06/86	AQUA		3	4	1	1	12	12	32	0.3	10	16	4	3	240	0.01	0.010			
TABLE 2																						
GROUNDWATER QUALITY ANALYSIS																						
D-11	3	11/05/86	AQUA		3	4	1	1	10	12	9	0.3	10	12	4	3	270	0.01	0.010			
METALS, CYANIDE AND PHENOLS PAGE 1 OF 5																						
GROUNDWATER INVESTIGATIONS ALLIED CORPORATION SOUTH BEND, INDIANA PROJECT ALCHPX SBTM 04																						
T A GLEASON ASSOCIATES ENVIRONMENTAL AND GEO TECHNICAL SERVICES																						

NOTES:  
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.  
< = LESS THAN





EEC1003  
24-May-87

WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC CONDUCTANCE	PH	TEMP C	ANTHRONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES:
S-9	110	10/01/86	AQUA	1775																		
	130	10/01/86	AQUA				66	4	1	20	130	33	0.3	20	4	110			930			
	4	11/01/86	AQUA				3	4	1	20	88	15	0.3	16	12	4	3	500	0.01	0.010		
	20	12/18/86	AQUA				3	4	2	10	28	10	0.3	10	8	4	24	120	0.010	0.010		
	30	12/18/86	AQUA				3	4	1	10	4	10	0.3	10	8	4	18	8	0.010	0.010		
S-12	24	11/06/86	AQUA				66	4	1	12	20	45	0.3	10	12	4	3	6320	0.01	0.024		
S-14	21	11/06/86	AQUA				3	4	1	10	40	16	0.3	16	8	4	3	370	0.01	0.010		
S-15	27	11/06/86	AQUA				66	4	1	16	48	16	0.3	16	12	4	3	120	0.01	0.010		
	23	12/18/86	AQUA				3	4	1	10	20	15	0.3	16	4	8	15	48	0.010	0.010		
S-16	11	11/06/86	AQUA				66	4	1	10	310	65	0.3	12	16	4	3	220	0.01	0.060		
	19	12/18/86	AQUA				66	4	1	10	52	10	0.3	12	8	4	9	52	0.010	0.010		
	29	12/18/86	AQUA				3	4	1	10	4	9	0.4	10	8	4	9	4	0.010	0.010		
	11	02/12/87	AQUA	1450		15				10		13										
S-17	16	11/06/86	AQUA				3	4	1	10	12	23	0.3	20	24	4	3	150	0.01	0.025		
S-18	12	11/06/86	AQUA				3	4	1	10	16	11	0.3	10	8	4	3	170	0.01	0.020		
	13	11/06/86	AQUA				3	4	1	10	24	15	0.3	10	20	4	3	270	0.01	0.012		
	14	11/06/86	HARD				25	5	10	27	32	8	0.2	8	12.5	30	25	288	0.005	0.007		

TABLE 2

GROUNDWATER QUALITY ANALYSIS:  
METALS, CYANIDE  
AND PHENOLS  
PAGE 3 OF 5

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCHPX SB IN 04

T A GLEASON ASSOCIATES  
ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES



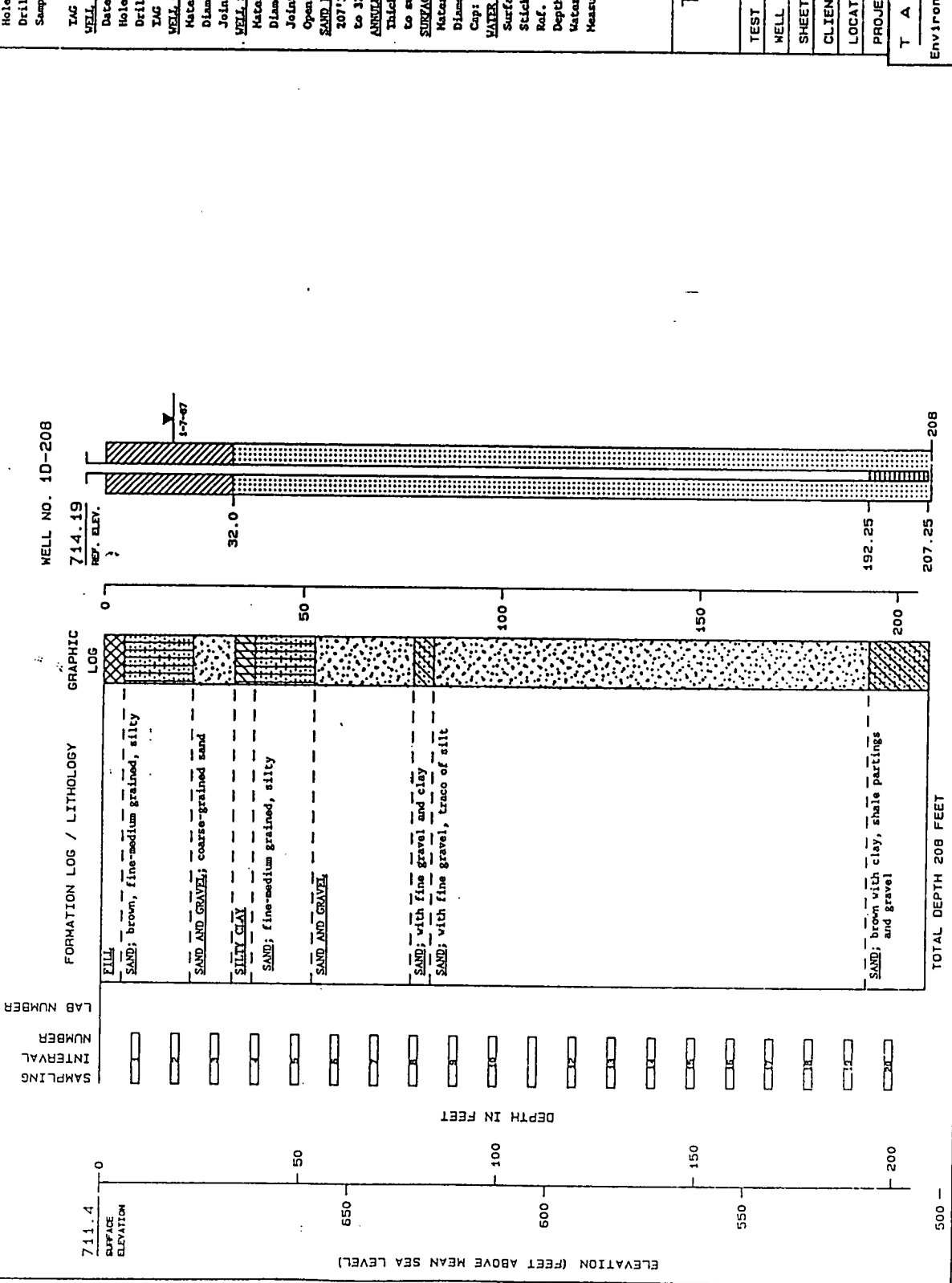




TEST BORING LOG (S)

WELL CONSTRUCTION

TEST BORING LOG



TEST BORING INSTALLATION

Date Completed: 11/12/86  
 Hole Diameter: 6.5"  
 Drilling Method: Mud Rotary  
 Sampling Method(s):  
 Drilling Cuttings  
 TAG Rep.: Scott Spesshardt  
 WELL CONSTRUCTION  
 Date Completed: 11/17/86  
 Hole Diameter: 6.5"  
 Drilling Method: Mud Rotary  
 TAG Rep.: Scott Spesshardt  
 WELL CASING  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded  
 WELL SCREEN  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded  
 Opening: 0.010 slot  
 SAND FACE: #4 gravel from 207.75'-148.9". Hole caved to 32 ft.  
 ANNULUS SEAL:  
 Thick bentonite slurry to surface.  
 SURFACE CASING  
 Material: Steel  
 Diameter: 4"  
 Cap: Locking  
 WATER LEVEL MEASUREMENTS  
 Surface Elevation: 711.44  
 Stick-up: 21"  
 Ref. Elevation: 714.19  
 Depth: 16.72  
 Water Level: 697.47  
 Measured On: 01/07/87

TEST BORING LOG  
 WELL DIAGRAM

TEST BORING NO. (S): 1D  
 WELL NO. (S): 1D-208  
 SHEET: 1 OF 1 DRAWING: 1-14-87  
 CLIENT : Allied Corporation  
 LOCATION: South Bend Indiana  
 PROJECT NO.: ALAEC SBIN 004  
 T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services

TOTAL DEPTH 208 FEET

ELEVATION (FEET ABOVE MEAN SEA LEVEL)



EECIN084  
24-May-87

WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC:													NOTES:				
				CONDUC-	TANCE	PH	TEMP	ANTHONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL		SELENIUM	SILVER	THALLIUM	ZINC
				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
S-19	2	11/05/86	AQUA		(3)	(4)	(1)	(1)	(1)	12	16	25	(0.3)	(10)	(8)	(4)	(3)	620	(0.01)	(0.010)	
S-20	30	11/07/86	AQUA		(3)	(4)	(1)	(1)	16	16	25	(0.3)	(10)	(8)	(4)	64	0.02	(0.010)			
S-21	17	11/06/86	AQUA		(6)	(4)	(1)	(1)	20	20	33	(0.3)	(10)	(100)	(4)	(3)	160	(0.01)	(0.010)		
S-22	18	11/06/86	AQUA		(3)	(4)	(1)	(1)	12	(4)	5	(0.3)	(10)	(40)	4	(3)	28	(0.01)	(0.010)		
S-23	19	11/06/86	AQUA		(3)	(4)	(1)	1	12	8	34	(0.3)	(10)	(16)	4	(3)	120	(0.01)	(0.010)		
7-25	31	11/07/86	AQUA		(6)	5	(1)	2	12	40	66	(0.3)	24	(12)	(4)	6	120	0.01	(0.010)		
20A	02/12/87	AQUA	700					16			300						170				
20B	02/12/87	AQUA						(108)			3*						12*				
7-50	32	11/07/86	AQUA		(6)	(4)	(1)	(1)	10	16	4	(0.3)	(10)	(4)	(4)	6	32	0.01	(0.010)		
21	02/12/87	AQUA						12			(3)						12				
9-33	11	01/08/87	AQUA		(50)	11	6	2	170	160	69	0.6	220	(80)	(4)	(1)	840				
19A	02/12/87	AQUA						844			125						210				
19B	02/12/87	AQUA						(108)			(38)						12*				
1-0	13	01/09/87	AQUA		(1)	(8)	(0.4)	3	40	(4)	240	(0.3)	12	(4)	(4)	(1)	44				
1	02/12/87	AQUA	1300					18			52						14				
2-0	2	12/18/86	AQUA		(6)	7	(1)	(1)	10	16	20	(0.3)	16	(8)	(4)	(9)	120				

TABLE 2

GROUNDWATER QUALITY ANALYSIS  
METALS, CYANIDE  
AND PHENOLS  
PAGE 4 OF 5  
GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA  
PROJECT ALCHPX 881N 04  
T A GLEASON ASSOCIATES  
ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES

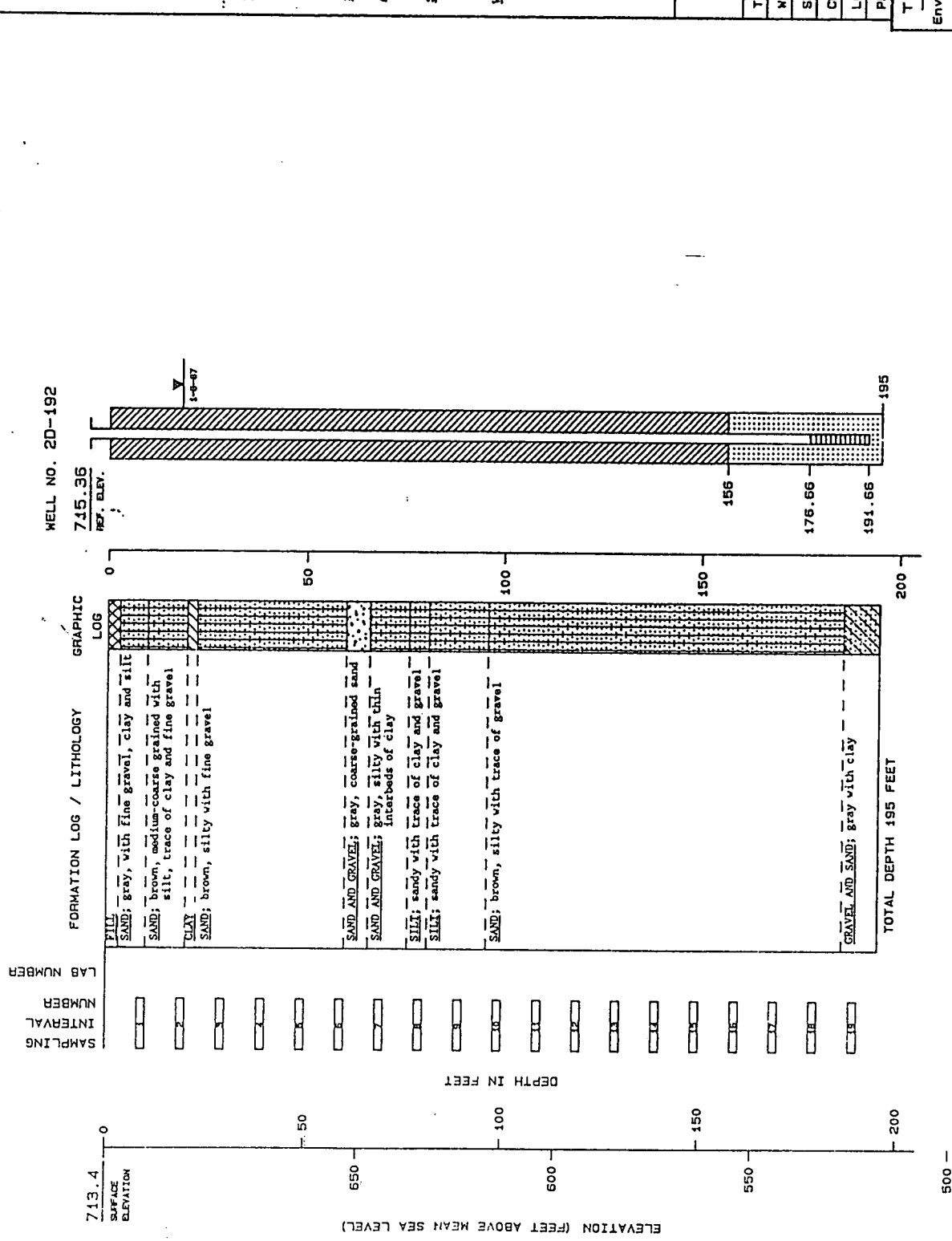




TEST BORING LOG (S)

WELL CONSTRUCTION

TEST BORING LOG



TEST BORING INSTALLATION

Date Completed: 11/18/86  
 Hole Diameter: 6.25"  
 Drilling Method: Mud Rotary  
 Sampling Method(s):  
 Drilling Cuttings  
 TAG Rep.: Scott Spesshardt  
 WELL CONSTRUCTION  
 Date Completed: 11/19/86  
 Hole Diameter: 6.25"  
 Drilling Method: Mud Rotary  
 TAG Rep.: Scott Spesshardt  
 WELL CASING  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded  
 WELL SCREEN  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded  
 Opening: 0.010 slot (5 Ft.)  
 SAND PACK: 1/4 gravel from 191'-8"-156'  
 ANKLETS SEALS  
 Thick bentonite slurry to surface.  
 SURFACE CASING  
 Material: Steel  
 Diameter: 4"  
 Cap: Locking  
 WATER LEVEL MEASUREMENTS  
 Surface Elevation: 713.44  
 Stick-up: 23"  
 Ref. Elevation: 715.36  
 Depth: 18.19  
 Water Level: 697.17  
 Measured On: 01/08/87

TEST BORING LOG  
 WELL DIAGRAM

TEST BORING NO. (S): 2D  
 WELL NO. (S): 2D-192  
 SHEET: 1 OF 1 DRAWING: 1-14-87  
 CLIENT: Allied Corporation  
 LOCATION: South Bend Indiana  
 PROJECT NO.: ALAEEC SBIN 004  
 T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services



TEST BORING LOG (S)

WELL CONSTRUCTION

**TEST BORING INSTALLATION**  
 Date Completed: 10/07/86  
 Hole Diameter: 8.75"  
 Drilling Method: Mud Rotary  
 Sampling Method(s):  
 Drill Cuttings  
 TAG Rep.: Scott Spesshardt

**WELL CONSTRUCTION**  
 Date Completed: 10/09/86  
 Hole Diameter: 8.75"  
 Drilling Method: Mud Rotary  
 TAG Rep.: Scott Spesshardt

**WELL CASING**  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joint: Threaded

**WELL SCREEN**  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded  
 Opening: 0.010 slot

**SAND PACK**  
 Natural pack to 92.12'  
**ANNULUS SEAL:**  
 Thick bentonite slurry  
 to surface

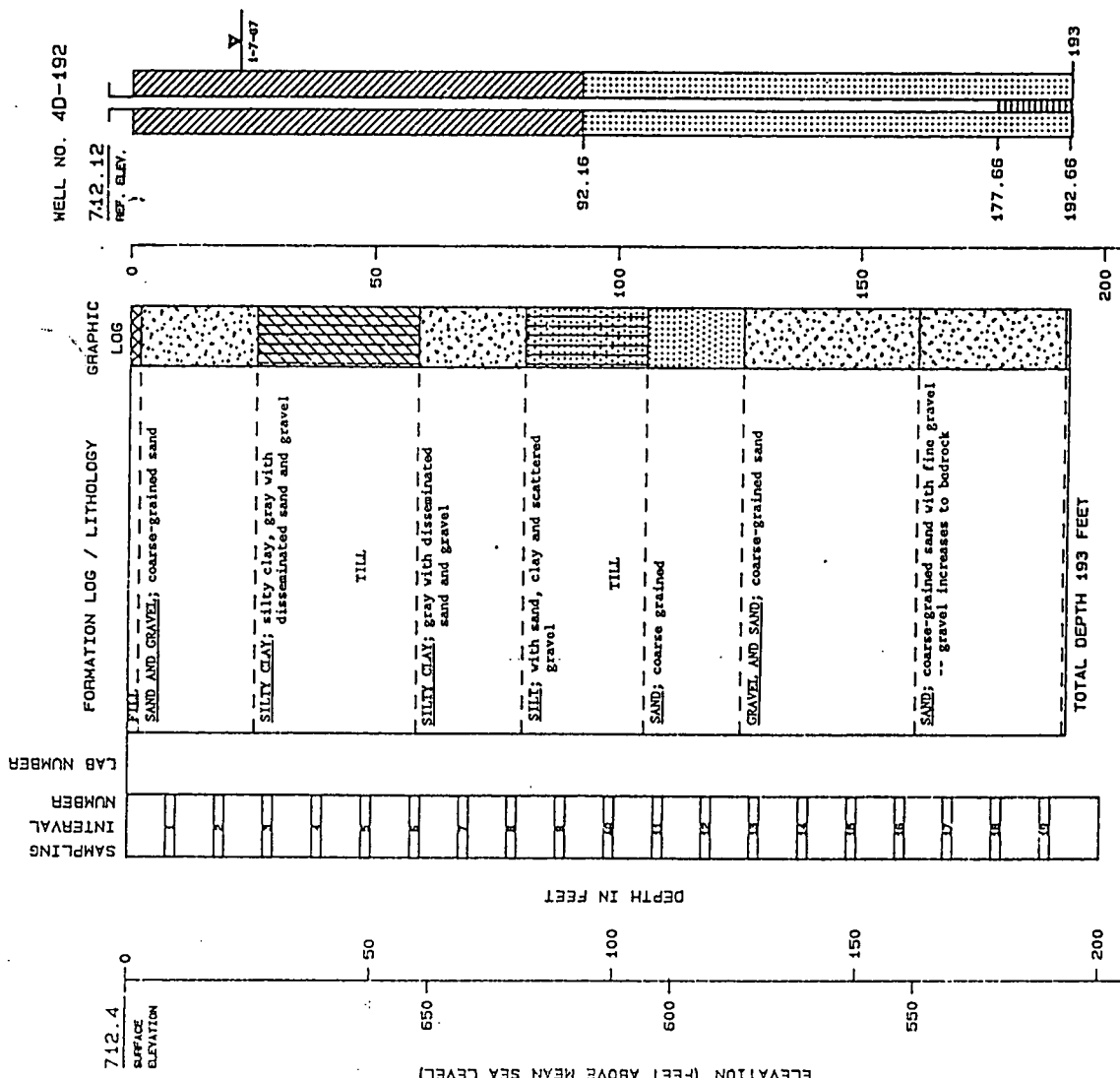
**SURFACE CASING**  
 Material: Steel  
 Diameter: 4"

**WATER LEVEL MEASUREMENTS**  
 Cap: Locking  
 Surface Elevation: 712.12  
 Stick-up: -3"  
 Reference Elevation: 712.12  
 Depth: 21.95  
 Water Level: 690.17  
 Measured on: 01/07/87

TEST BORING LOG  
 WELL DIAGRAM

TEST BORING NO. (S): 4D  
 WELL NO. (S): 4D-192  
 SHEET: 1 OF 1 DRAWING: 1-14-87  
 CLIENT: Allied Corporation  
 LOCATION: South Bend Indiana  
 PROJECT NO.: ALAEEC SBIN 004

T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services





PRIORITY POLLUTANTS

WELL NO.	DATE	SAMPLE #	LAB	VOLATILE ORGANIC COMPOUNDS (VOC)										BASE NEUTRAL COMPOUNDS				NOTE D CIS-1,2-DICHLOROETHENE	
				1,1-DI-CHLOROETHANE	1,1,2-DI-CHLOROETHANE	1,1-DI-CHLOROETHYLENE	TRANS-1,2-DI-CHLOROETHYLENE	1,1,1-TRI-CHLOROETHANE	TRI-CHLOROETHYLENE	SUM	BENZENE	CHLORO-BENZENE	ETHYL BENZENE	TOLUENE	NOTE A BASE NEUTRAL COMPOUNDS	NOTE B BIS (2-ETHYLHEXYL) PHTHALATE	NOTE 8 DI-N-OCYL PHTHALATE		NOTE C ACID FRACTION
2-D	12/18/86	2	AQUA	ND	20.4	ND	ND	ND	ND	ND	20	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
	06/05/87	11	AQUA	ND	25	ND	ND	ND	ND	ND	25								
3-D	12/18/86	3	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	8.9							ND
	02/12/87	10	AQUA	ND	ND	ND	ND	ND	ND	ND	ND								
4-D	10/14/86	31	AQUA	ND	ND	11.4	ND	ND	ND	ND	11								
	01/07/87	5	AQUA	ND	ND	ND	ND	ND	ND	ND	ND								
	02/11/87	2	AQUA	ND	ND	1.6	ND	ND	ND	ND	2								
	06/05/87	14	AQUA	ND	ND	ND	ND	ND	ND	ND	ND								8.8
5-D	12/18/86	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND								10
	12/18/86	5	AQUA	ND	ND	ND	ND	ND	ND	ND	ND								10
	02/11/87	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND								
	06/05/87	19	AQUA	ND	ND	ND	ND	ND	ND	ND	ND								ND
6-D	12/18/86	6	AQUA	ND	ND	ND	ND	ND	ND	ND	ND								
7-25	11/07/86	31	AQUA	ND	ND	ND	ND	ND	ND	ND	ND								
	06/05/87	2	AQUA	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

A = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS BASE NEUTRALS.

B = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS

C = RESULTS FROM ANALYSES FOR PRIORITY POLLUTANTS ACID FRACTION.

D = SAMPLED NON-PRIORITY POLLUTANT, CIS-1,2-DCE, DURING GCMS SCAN FOR PRIORITY POLLUTANT VOC.

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

POLLUTANT VOLATILE ORGANIC  
SEE LAB REPORT

TABLE 2

GROUNDWATER QUALITY ANALYSIS  
ORGANIC COMPOUNDS  
PAGE 7 OF 8

GROUNDWATER INVESTIGATIONS  
ALLIED CORPORATION  
SOUTH BEND, INDIANA

PROJECT # ALCHPX S81N 004  
T A GLEASON ASSOCIATES

ENVIRONMENTAL AND  
GEOTECHNICAL SERVICES



### TEST BORING LOG (S)

### WELL CONSTRUCTION

### TEST BORING LOG

### WELL DIAGRAM

#### TEST BORING INSTALLATION

Date Completed: 11/25/86  
 Hole Diameter: 6.25"  
 Drilling Method: Mud Rotary  
 Sampling Method(s):  
 Drill Cuttings

#### TAG Rep.: Scott Spesshardt

#### WELL CONSTRUCTION

Date Completed: 11/25/86  
 Hole Diameter: 6.25"  
 Drilling Method: Mud Rotary  
 TAG Rep.: Scott Spesshardt

#### WELL CASING

Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joint: Threaded

#### WELL SCREEN

Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded  
 Opening: 0.020 slot (10');  
 0.010 slot (5')

#### SAND PACK

4 gravel from 191.1'-171'

#### ANNULAR SEAL

Thick bentonite slurry to surface

#### SURFACE CASING

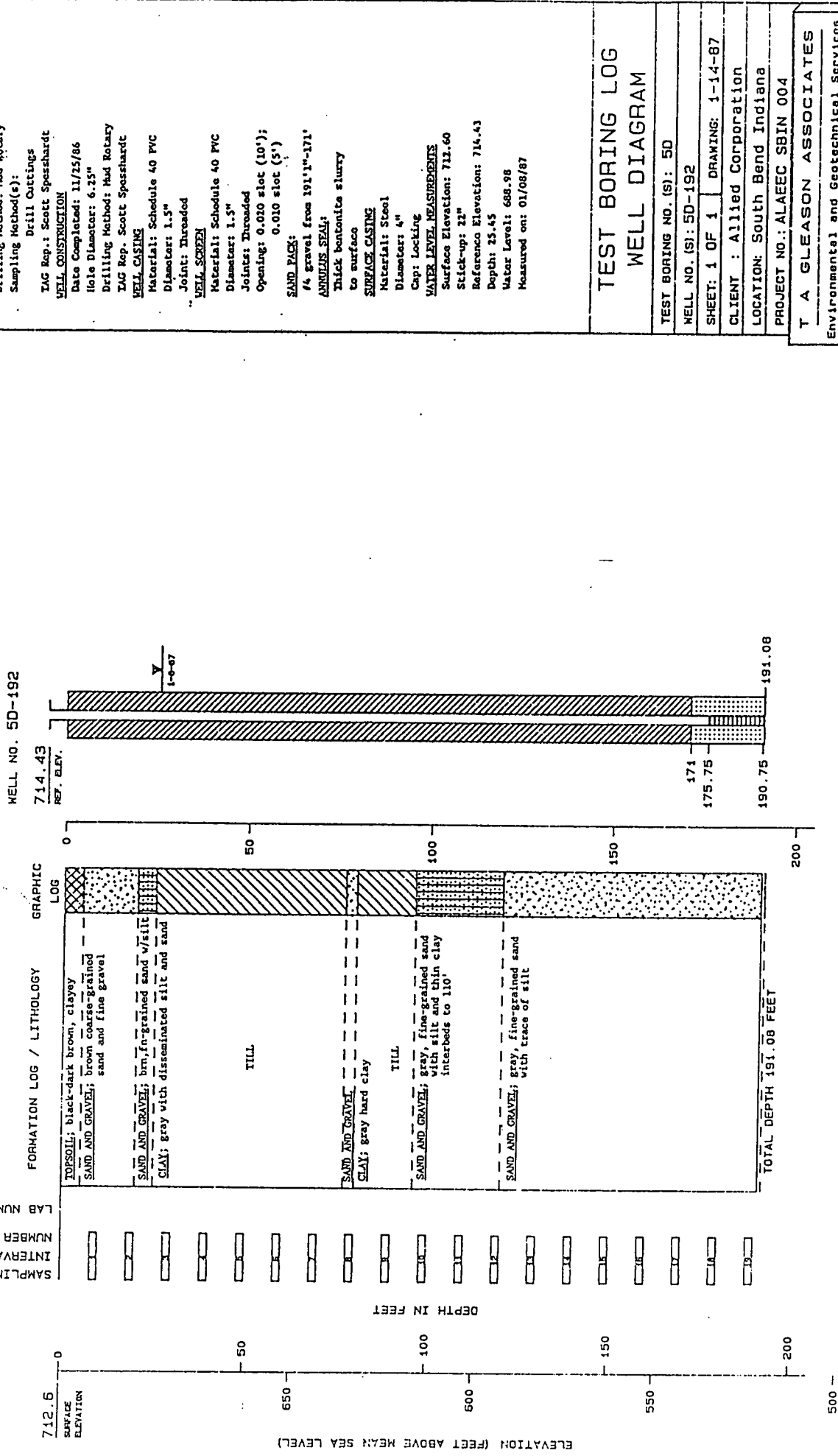
Material: Steel  
 Diameter: 4"  
 Cap: Locking

#### WATER LEVEL MEASUREMENTS

Surface Elevation: 712.60  
 Stick-up: 22"  
 Reference Elevation: 714.43  
 Depth: 35.45  
 Water Level: 688.98  
 Measured on: 01/08/87

TEST BORING NO. (S): 50  
 WELL NO. (S): 5D-192  
 SHEET: 1 OF 1 DRAWING: 1-14-87  
 CLIENT: Allied Corporation  
 LOCATION: South Bend Indiana  
 PROJECT NO.: ALAECC SBIN 004

T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services

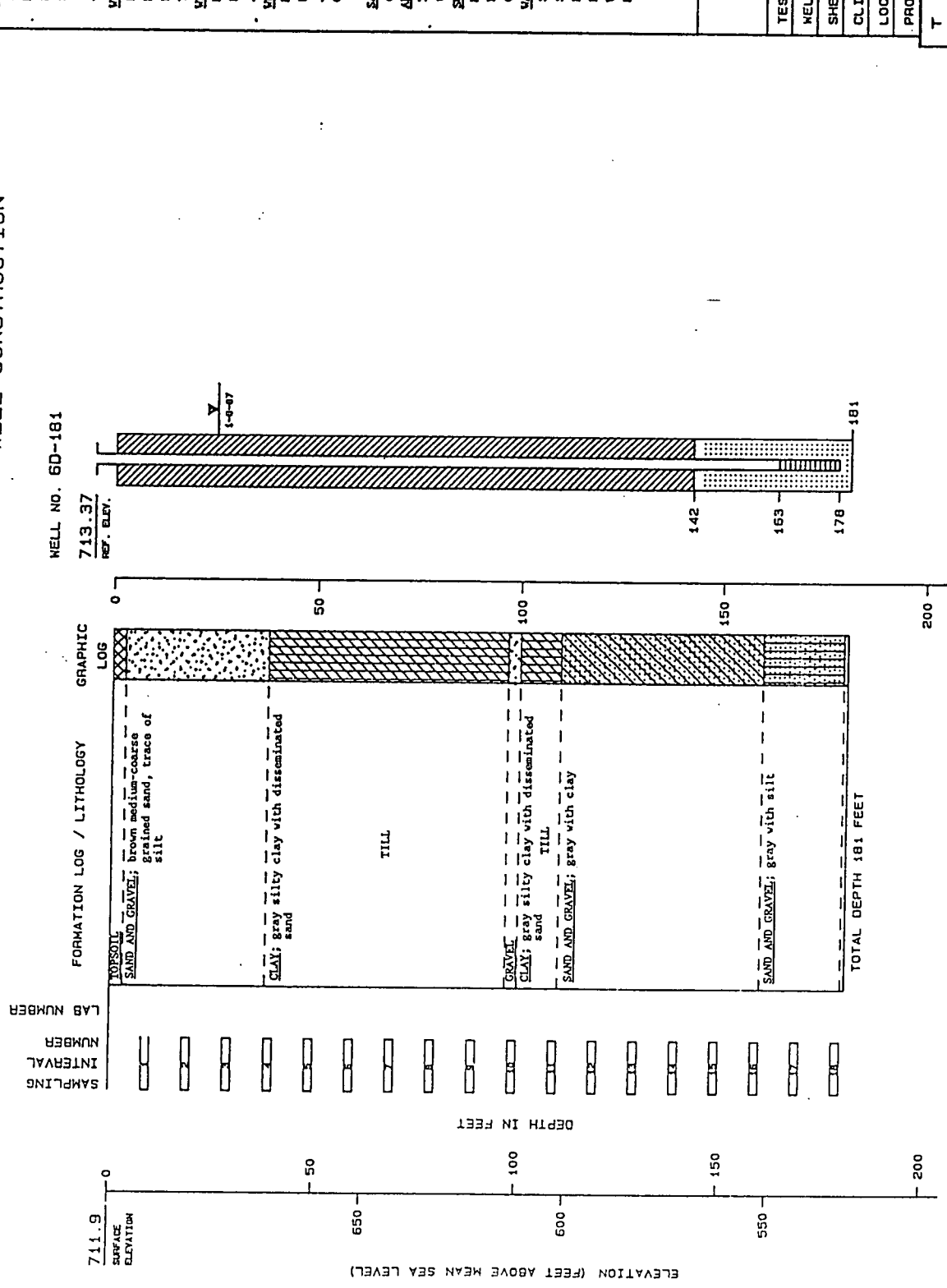






TEST BORING LOG (S)

WELL CONSTRUCTION



**TEST BORING INSTALLATION**  
 Date Completed: 11/21/86  
 Hole Diameter: 6.25"  
 Drilling Method: Mud Rotary  
 Sampling Method(s):  
 Drill Cuttings  
 TAG Rep.: Scott Spesshardt

**WELL CONSTRUCTION**  
 Date Completed: 11/21/86  
 Hole Diameter: 6.25"  
 Drilling Method: Mud Rotary  
 TAG Rep.: Scott Spesshardt

**WELL CASING**  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded

**WELL SCREEN**  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded  
 Opening: 0.020 slot (10');  
 0.010 slot (5')

**SAND PACK:**  
 7/4 gravel from 178'-4"-142'

**ANNULUS SEAL:**  
 Thick bentonite slurry  
 to surface

**SURFACE CASING**  
 Material: Steel  
 Diameter: 4"  
 Caps: Locking

**WATER LEVEL MEASUREMENTS**  
 Surface Elevation: 711.87  
 Stick-up: 18"  
 Reference Elevation: 713.37  
 Depth: 24.75  
 Water Level: 688.62  
 Measured on: 01/08/87

TEST BORING LOG  
WELL DIAGRAM

TEST BORING NO. (S): 6D  
 WELL NO. (S): 6D-181  
 SHEET: 1 OF 1 DRAWING: 1-14-87  
 CLIENT: Allied Corporation  
 LOCATION: South Bend Indiana  
 PROJECT NO.: ALAEEC SBIN 004  
**T A GLEASON ASSOCIATES**  
 Environmental and Geotechnical Services



TEST BORING LOG (S)

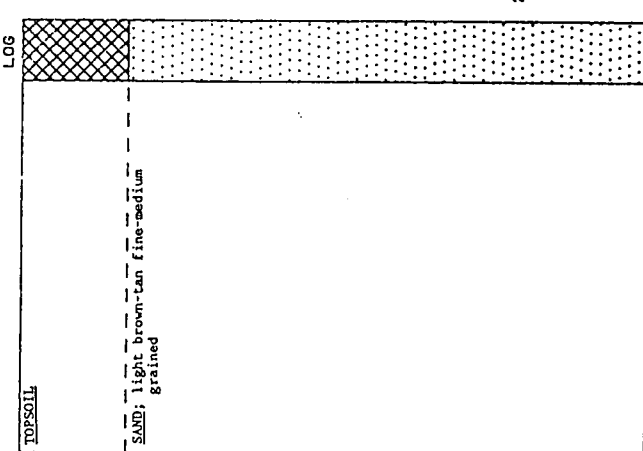
WELL CONSTRUCTION

WELL NO. 7-24

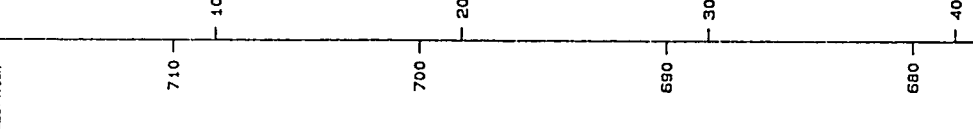
720.38  
REF. ELEV.

LOG

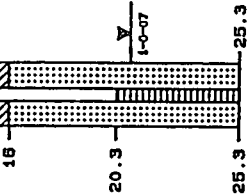
FORMATION LOG / LITHOLOGY



718.3  
SURFACE  
ELEVATION



ELEVATION (FEET ABOVE MEAN SEA LEVEL)



TEST BORING INSTALLATION

Date Completed: 09/24/86  
Hole Diameter: 6.25"  
Drilling Method: Hollow Stem Augers  
Sampling Method(s):  
2" Split spoons

TAG Rep.: Scott Spasshardt

WELL CONSTRUCTION

Date Completed: 09/24/86  
Hole Diameter: 6.25"  
Drilling Method:  
Hollow Stem Augers

TAG Rep.: Scott Spasshardt

WELL CASING

Material: Schedule 40 PVC  
Diameter: 1.5"  
Joint: Threaded

WELL SCREEN

Material: Schedule 40 PVC  
Diameter: 1.5"  
Joints: Threaded  
Opening: 0.010 slot

SAND PACK: Natural pack to 16 ft.

ANNULUS SEAL:

Thick bentonite slurry  
to surface.

SURFACE CASING

Material: Steel  
Diameter: 4"  
Cap: Locking

WATER LEVEL MEASUREMENTS

Surface Elevation: 718.26  
Stick-up: 25.5"  
Ref. Elevation: 720.38  
Depth: 20.86  
Water Level: 699.52  
Measured On: 01/08/87

TEST BORING LOG  
WELL DIAGRAM

TEST BORING NO. (S): 7

WELL NO. (S): 7-24

SHEET: 1 of 1 DRAWING: 1-16-87

CLIENT: Allied Corporation

LOCATION: South Bend Indiana

PROJECT NO.: ALAEEC SBIN 004

T A GLEASON ASSOCIATES  
Environmental and Geotechnical Services



TEST BORING LOG (S)

WELL CONSTRUCTION

TEST BORING INSTALLATION

Date Completed: 09/23/86  
 Hole Diameter: 6.25"  
 Drilling Method:  
 Hollow Stem Augers  
 Sampling Method(s):  
 3" Diameter Split Spoon  
 TAG Rep.: Scott Spesshardt

WELL CONSTRUCTION

Date Completed: 09/23/86  
 Hole Diameter: 6.25"  
 Drilling Method:  
 Hollow Stem Augers  
 TAG Rep.: Scott Spesshardt

WELL CASTING

Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joint: Threaded

WELL SCREEN

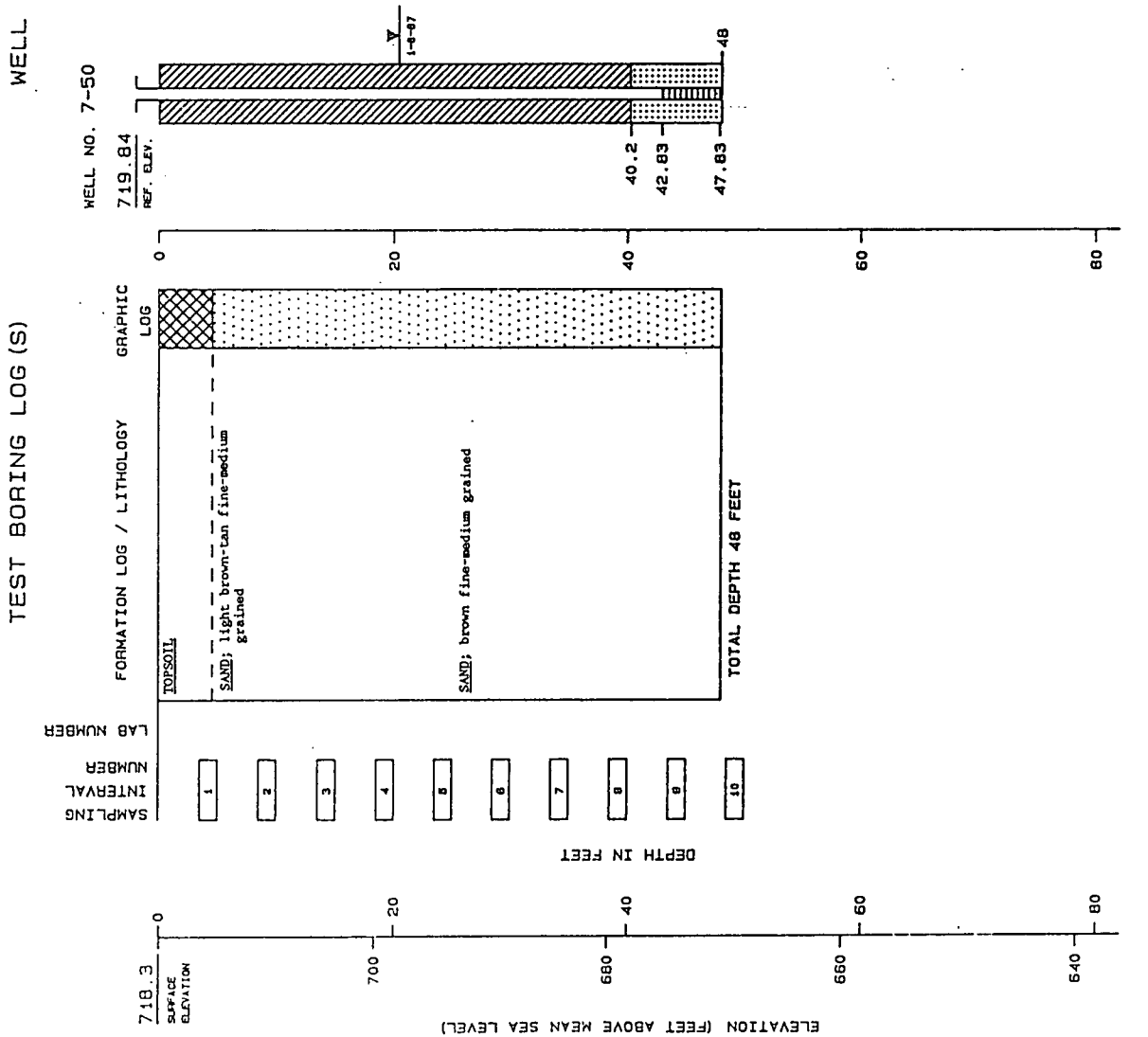
Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded  
 Opening: 0.010 slot  
 SAND PACK: 40-2 feet  
 ANNULUS SEAL:  
 Thick bentonite slurry  
 to surface.

SURFACE CASTING

Material: Steel  
 Diameter: 4"  
 Cap: Locking

WATER LEVEL MEASUREMENTS

Surface Elevation: 718.34  
 Stick-up: 18"  
 Ref. Elevation: 719.84  
 Depth: 20.35  
 Water Level: 699.49  
 Measured On: 01/08/87



TEST BORING LOG  
 WELL DIAGRAM

TEST BORING NO. (S): 7  
 WELL NO. (S): 7-50  
 SHEET: 2 of 2 DRAWING: 1-16-87  
 CLIENT : Allied Corporation  
 LOCATION: South Bend Indiana  
 PROJECT NO.: ALAEEC SBIN 004

T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services



TEST BORING LOG (S)

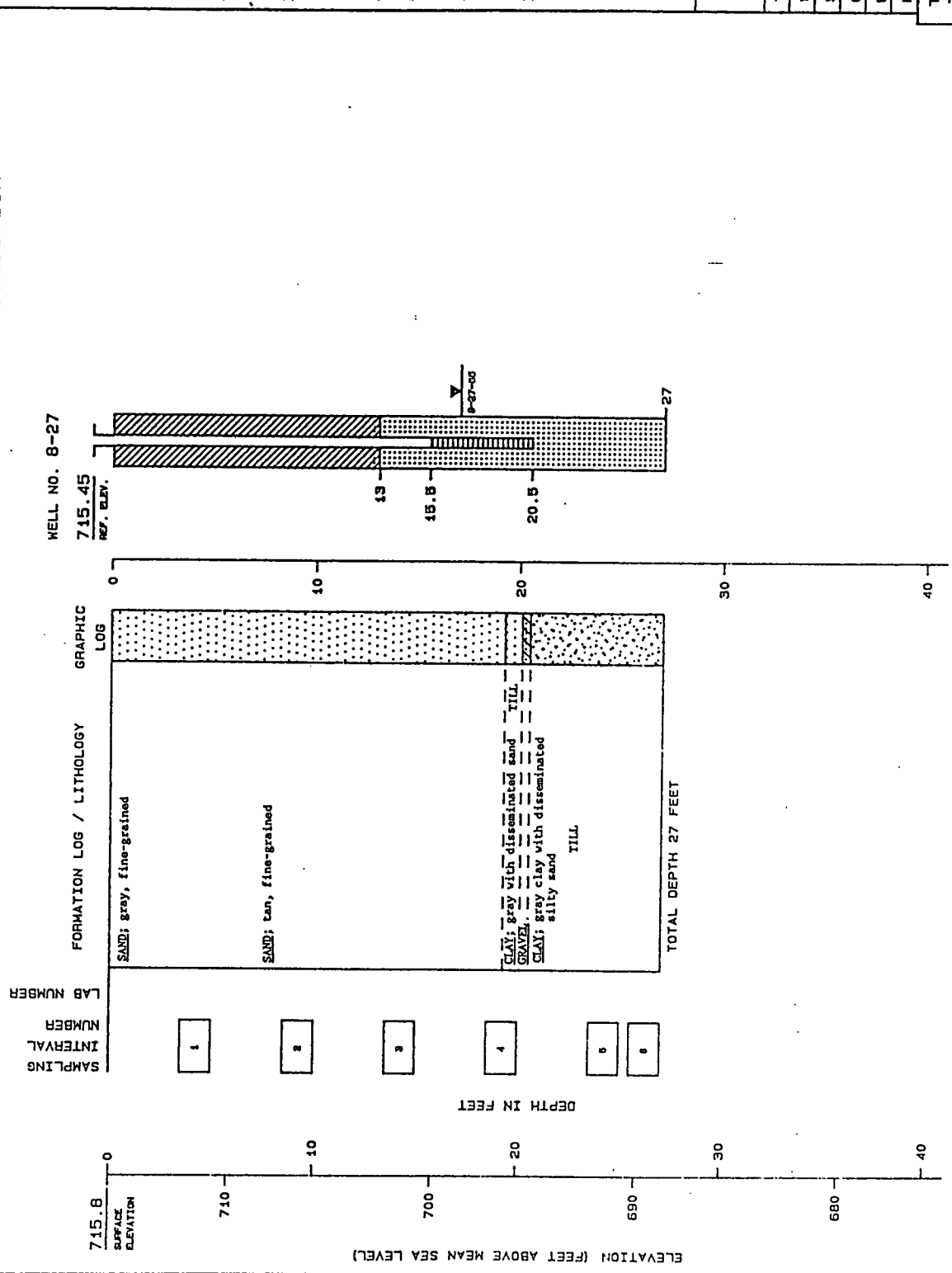
WELL CONSTRUCTION

**TEST BORING INSTALLATION**  
 Date Completed: 09/24/86  
 Hole Diameter: 6.25"  
 Drilling Method: Hollow Stem Augers  
 Sampling Method(s): 2" Diameter Split Spoons  
 TAG Rep.: Scott Spesshardt  
**WELL CONSTRUCTION**  
 Date Completed: 09/24/86  
 Hole Diameter: 6.25"  
 Drilling Method: Hollow Stem Augers  
 TAG Rep.: Scott Spesshardt  
**WELL CASING**  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joint: Threaded  
**WELL SCREEN**  
 Material: Schedule 40 PVC  
 Diameter: 1.5"  
 Joints: Threaded  
 Opening: 0.010 slot  
**SAND PACK:** Sand packed to 13.0 ft  
**ANNULUS SEAL:** Thick bentonite slurry to surface.  
**SURFACE CASING**  
 Material: Steel  
 Diameter: 4"  
 Cap: Locking  
**WATER LEVEL MEASUREMENT**  
 Surface Elevation: 715.78  
 Stick-up: 18"  
 Ref. Elevation: 715.45  
 Depth: 16.97  
 Water Level: 698.48  
 Measured On: 09/27/86

TEST BORING LOG  
 WELL DIAGRAM

TEST BORING NO. (S): 8  
 WELL NO. (S): 8-27  
 SHEET: 1 of 1 DRAWING: 1-16-87  
 CLIENT: Allied Corporation  
 LOCATION: South Bend Indiana  
 PROJECT NO.: ALAEEC SBIN 004

T A GLEASON ASSOCIATES  
 Environmental and Geotechnical Services







Bendix



Bendix  
Aerospace

Bendix Energy Controls Division  
717 North Bendix Drive  
South Bend, IN 46620

IND005461165

May 11, 1987

Mr. Glenn Pratt  
Office of Environmental Response  
Indiana Department of Environmental  
Management  
105 South Meridian Street  
P. O. Box 6015  
Indianapolis, Indiana 46206-6015

Subject: Hydro-Geological Monitoring Applicable to the South Bend,  
Indiana Divisions of the Allied Corporation

Dear Mr. Pratt:

Please find enclosed a copy of the Groundwater Monitoring Quarterly Report for March 1987, submitted by T. A. Gleason Associates. Allied has also submitted copies of the report to the City of South Bend, the United States Environmental Protection Agency and the St. Joseph County Health Department.

If we can be of assistance with respect to the report, please advise the undersigned.

Sincerely,

Allied Corporation  
Bendix Energy Controls Division

A handwritten signature in cursive script, appearing to read 'T. L. Moore'.

T. L. Moore  
Vice President & General Manager

TLM/ed

Enclosure

OFFICE OF SOLID  
AND HAZARDOUS  
WASTE MGMT  
DEM

MAY 19 1 44 PM '87

MAY 18 10 16 AM '87  
DEPARTMENT  
OF  
ENVIRONMENTAL  
MANAGEMENT

GROUNDWATER MONITORING REPORT  
1ST QUARTER 1987  
ALLIED CORPORATION  
BENDIX DIVISION  
SOUTH BEND, INDIANA

APRIL 23, 1987

ALCMPX SBIN 004



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Figure 1	Site Location
Figure 2	Monitor Well Locations





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Table 1	Groundwater Measurements
Table 2	Groundwater Quality Analysis Inorganic Compounds Monitor Wells
Table 3	Groundwater Quality Analysis Inorganic Compounds Recovery Wells
Table 4	Groundwater Quality Analysis Volatile Organic Compounds Monitor Wells
Table 5	Groundwater Quality Analysis Volatile Organic Compounds Recovery Wells



## 1.0 INTRODUCTION AND BACKGROUND

Presented herein are the results of the most recent groundwater sampling and groundwater elevation measurements performed at the Allied Corporation, Bendix Complex, South Bend, Indiana (Figure 1). These results are a continuation of the groundwater monitoring program initiated by Allied in 1981. The previous reports for the 3rd Quarter and 4th Quarter 1986 monitoring periods were prepared by T A Gleason Associates. Prior to that the groundwater monitoring program was conducted by Clyde E. Williams & Associates.

## 2.0 WATER LEVEL MEASUREMENTS

Water elevations were measured on fifty groundwater wells in and around the Bendix Complex on March 26, 1987. The measurements were made with an electronic water level indicator manufactured by Solinst Inc., Ontario Canada. All measurements were taken to the nearest .01 foot to a point on the well casings which have been surveyed to obtain a reference elevation.

Water level measurements and the calculated water elevations are presented in Table 1.

## 3.0 WELL SAMPLING

Monitor wells S1, S9, S15, S16, D5 and Recovery Wells E-3, RWB6, RWB16, RWB21, and RWB22 were all sampled on March 25, 1987. All wells were sampled for the following parameters:

- o Volatile organic compounds (Method 624)
- o Metals (zinc, lead, and chrome)
- o Cyanide
- o Phenols



### 3.1 PURGING

Prior to sampling, the water level and total well depth were measured and the well volume was calculated. Three to five well volumes were then removed from each monitor well using a centrifugal pump connected to a section of dedicated polyethylene purging tube.

The drawdown/recovery wells were constantly pumping, therefore did not require additional purging, however the tap was allowed to run for approximately 5 minutes prior to sample collection.

### 3.2 SAMPLING

Monitor well samples were obtained from each well using a dedicated PVC bailer. The bailer was carefully lowered into and withdrawn from the well to avoid agitation of the samples. Recovery well samples were collected directly from a tap on the outlet pipe from the well. The flow rate at the tap was reduced to a minimum to avoid agitation of the samples.

In addition, as part of our Quality Assurance Procedures, duplicate samples were taken at monitor well D5 and recovery well RWB6 and a field blank was prepared and submitted for analysis with the samples collected. All samples were measured in the field for pH, Specific Conductivity and Temperature.

### 3.3 SAMPLE HANDLING

Appropriate EPA-approved containers for the above mentioned parameters were obtained from Aqua Tech Environmental Consultants, Inc., Melmore, Ohio. In addition, the containers for metals, cyanide and phenols contained the required



preservatives. Samples for metals analysis taken from wells S1, S9, S15, S16, D5, and the field blank were prefiltered through a .45 micron cellulose filter prior to being placed in the sample containers. All samples were placed in insulated coolers with ice packs immediately after collection and shipped directly to Aqua Tech with the completed chain of custody forms.

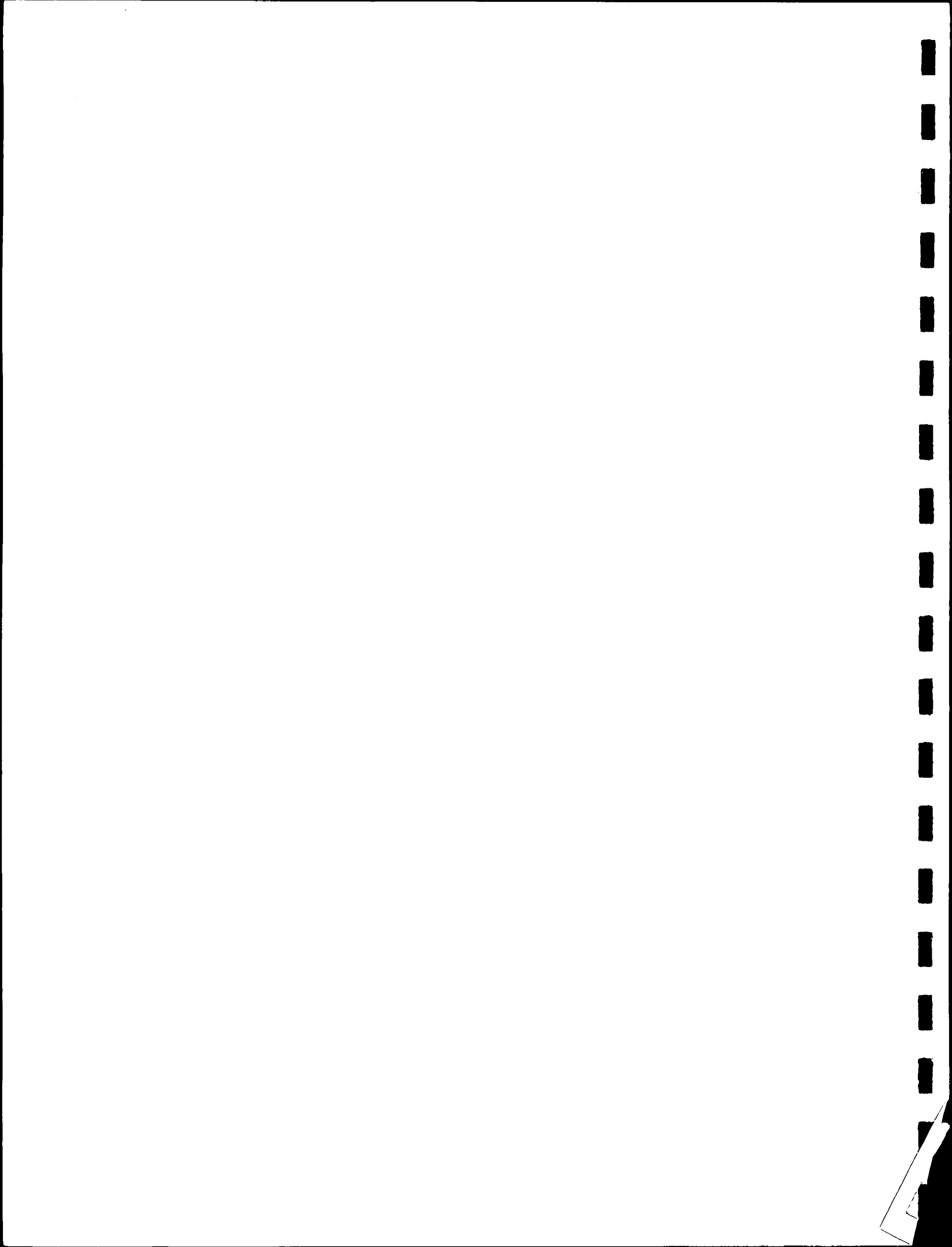
#### 4.0 ANALYTICAL PROCEDURES AND RESULTS

Aqua Tech Laboratories performed analysis on all samples in accordance with USEPA analytical protocols.

The results of the analyses for inorganic compounds are presented in tables 2 and 3. The results of the analyses for volatile organic compounds are summarized in tables 4 and 5.

The laboratory results are maintained in our files and are available upon request.





**Bendix**

Bendix Energy Controls Division  
717 North Bendix Drive  
South Bend, IN 46620

Bendix  
IND 0054601165

Bendix  
Allied

ST Allied  
Signal

Joseph  
3B

SEP 3 9 52 AM '87

DEPARTMENT  
OF  
ENVIRONMENTAL  
MANAGEMENT

August 26, 1987

Mr. Glenn Pratt  
Office of Environmental  
Management  
105 South Meridian Street  
P. O. Box 6015  
Indianapolis, Indiana 46206-6015

Subject: Hydro-Geological Monitoring Applicable to the South Bend, Indiana  
Divisions of the Allied Corporation

Dear Mr. Pratt:

Please find enclosed a copy of the Groundwater Monitoring Quarterly Report  
for June 1987, submitted by T. A. Gleason Associates. Allied has also  
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If we can be of assistance with respect to the report, please advise the  
undersigned.

Sincerely,

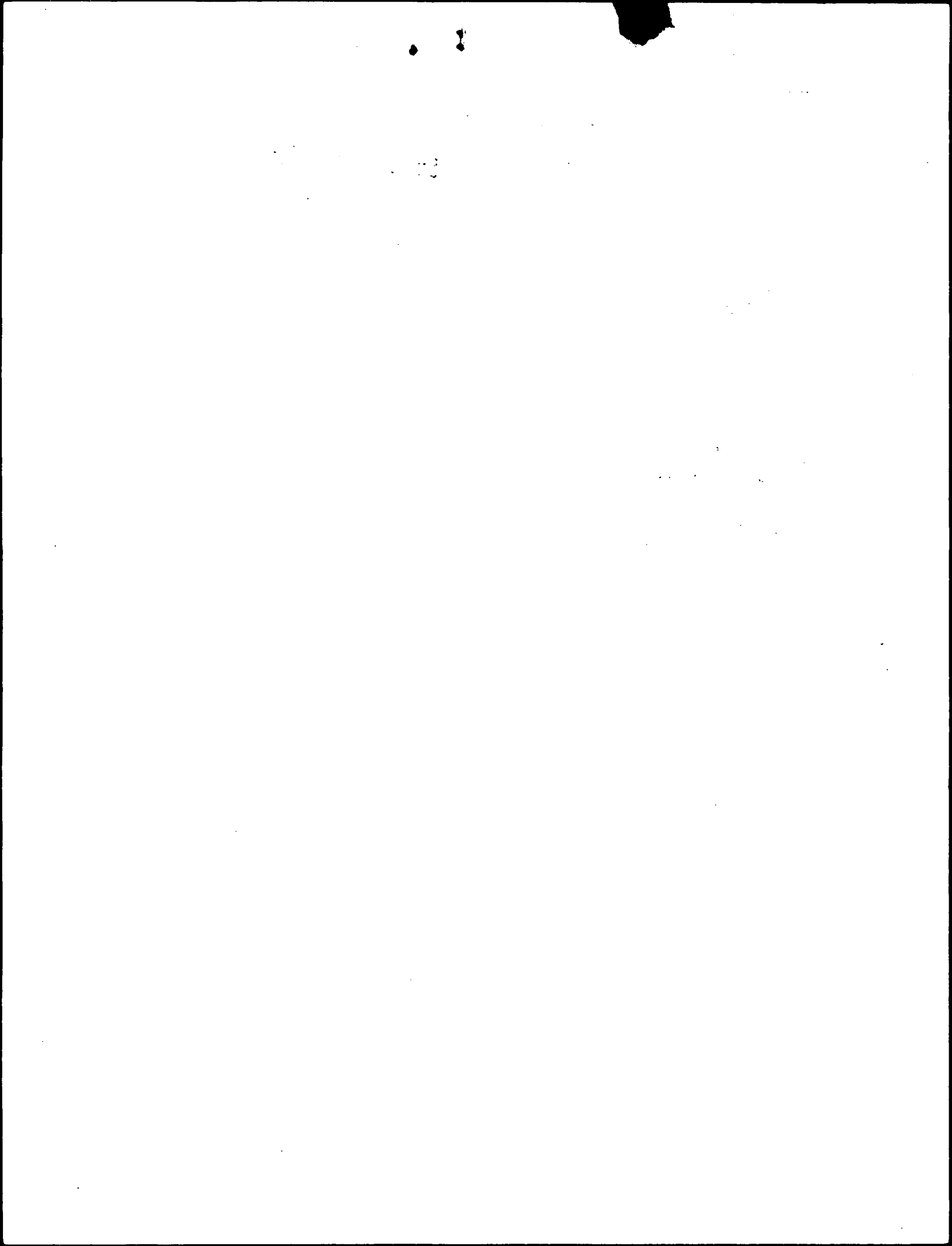
ALLIED CORPORATION  
Bendix Energy Controls Division



T. L. Moore  
Vice President & General Manager

TLM/ed

Enclosure



GROUNDWATER MONITORING REPORT  
2ND QUARTER 1987  
ALLIED CORPORATION  
BENDIX DIVISION  
SOUTH BEND, INDIANA

AUGUST 16, 1987

COPY # 15

ALCMPX SBIN 005



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LIST OF FIGURES

<u>NUMBER</u>	<u>TITLE</u>
Figure 1	Site Location
Figure 2	Monitor Well Locations





LIST OF TABLES

<u>NUMBER</u>	<u>TITLE</u>
Table 1	Groundwater Measurements
Table 2	Groundwater Quality Analysis Metals, Cyanide and Phenols
Table 3	Groundwater Quality Analysis Organic Compounds
Table 4	Bladder Pump Installation Summary



## 1.0 INTRODUCTION AND BACKGROUND

Presented herein are the results of the most recent groundwater sampling and groundwater elevation measurements performed at the Allied Corporation, Bendix Complex, South Bend, Indiana (Figure 1). These results are a continuation of the groundwater monitoring program initiated by Allied in 1981. The previous reports for the 3rd Quarter and 4th Quarter 1986 monitoring periods, and the 1st Quarter of 1987 were prepared by T A Gleason Associates. Prior to that the groundwater monitoring program was conducted by Clyde E. Williams & Associates.

## 2.0 WATER LEVEL MEASUREMENTS

Water elevations were measured from 37 groundwater wells in and around the Bendix Complex on June 4 and June 6, 1987. The measurements were made with an electronic water level indicator manufactured by Solinst Inc., Ontario Canada. All measurements were taken to the nearest .01 foot to a point on the well casings which have been surveyed to obtain a reference elevation.

Water level measurements and the calculated water elevations are presented in Table 1.

## 3.0 WELL SAMPLING

Twenty monitor wells (S1, S3, S9, S14, S15, S16, S17, S20, S21, S22, S23, D4, D7, 1-D, 2-D, 4-D, 5-D, 7-25, 9-33 and S-4A) were all sampled on June 5, 1987. All wells were sampled for the following parameters:

- o Volatile organic compounds
- o Metals (zinc, lead, and chromium)
- o Cyanide
- o Phenols



### 3.1 PURGING

Prior to sampling, the water level and total well depth were measured and the well volume was calculated. Three to five well volumes were then removed from each monitor well using a centrifugal pump connected to a section of dedicated polyethylene purging tube, or to the water outlet side of the dedicated bladder pumps. The bladder pump was used to purge the low yielding wells.

### 3.2 SAMPLING

Monitor well samples were obtained from each well using either a dedicated bladder pump or PVC bailer. The bailer was carefully lowered into and withdrawn from the well to avoid agitation of the samples. Well samples were collected directly from a tap on the outlet pipe from the wells in which a bladder pump had been installed.

In addition, as part of our Quality Assurance Procedures, duplicate samples were taken at monitor wells D7 and S21 and a field blank was prepared and submitted for analysis with the samples collected. All samples were measured in the field for pH, Specific Conductivity and Temperature.

### 3.3 SAMPLE HANDLING

Appropriate EPA-approved containers for the above mentioned parameters were obtained from Aqua Tech Environmental Consultants, Inc., Melmore, Ohio. In addition, the containers for metals, cyanide and phenols contained the required preservatives. All samples for metals analysis including the field blank were filtered through a .45 micron cellulose filter prior to being placed in the sample containers. All



samples were placed in insulated coolers with ice packs immediately after collection and shipped directly to Aqua Tech with the completed chain of custody forms.

#### 4.0 ANALYTICAL PROCEDURES AND RESULTS

Aqua Tech Laboratories performed analysis on all samples in accordance with USEPA analytical protocols.

The results of the analyses for metals (chromium, lead and zinc), cyanide and phenols are presented in Table 2. The results of the analyses for volatile organic compounds are summarized in Tables 3.

The laboratory results are maintained in our files and are available upon request.

#### 5.0 BLADDER PUMP INSTALLATION SUMMARY

A total of nineteen dedicated bladder pumps were installed at the Bendix complex in all of the wells which are part of the quarterly monitoring plan except S4A. Eleven pumps were installed prior to sampling and an additional eight pumps were installed after the 2nd quarter sampling had been completed.

The bladder pumps are operated by the use of compressed air which inflates the bladder and forces the water out thru the discharge side of the pump. If water level and well yield permit, a section line may be attached to the discharge side of the pump and a centrifugal pump used to purge the well. All wells will be sampled utilizing the bladder pumps in future sampling episodes. This eliminates the need for dedicated bailers and reduces the chance for outside contamination during sampling. Table 4 presents a summary of bladder pump installation data.



