PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

1992 ANNUAL RCRA
GROUNDWATER MONITORING REPORT
EPA I.D. NY002246015

Prepared by:

CHESTER ENVIRONMENTAL
3000 TECH CENTER DRIVE
MONROEVILLE, PENNSYLVANIA 15146

PROJECT NO. 288788

FEBRUARY 1993

CHESTER
ENVIRONMENTAL

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SENECA FALLS, NEW YORK

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PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

1992 ANNUAL REPORT

A. ANNUAL REPORT REQUIREMENT

The New York State regulation 6NYCRR 373-3.6(e)(2)(ii) requires that Philips Display Components Company (Philips) prepare an annual report on the groundwater monitoring program at its Seneca Falls facility. This report has been prepared in fulfillment of the requirement for 1992. The annual report must contain the following items:

1. All analytical data for the year
2. Statistical evaluations
3. Identification of upgradient differences
4. Evaluation of groundwater surface elevations

Philips has submitted to the New York Department of Environmental Conservation (NYSDEC), groundwater monitoring reports for all four quarters of 1992 which present and discuss the items listed above. The 1992 quarterly monitoring reports are presented as Appendices I through IV.

B. PROGRAM STATUS AS OF DECEMBER 31, 1992

Sixteen monitoring wells were installed around the former hazardous waste impoundments. Table 1 presents a summary of the monitoring well construction information. Nine wells, MW-1 through MW-4 and MW-12 through MW-16, monitor the uppermost aquifer in the glacial till. Five wells, MW-7 through MW-11, monitor the deeper bedrock aquifer.

Monitoring wells MW-5 and MW-6 were abandoned in 1989 during clean closure of the hazardous waste impoundments. These wells were not part of the approved alternate monitoring system and did not yield enough groundwater for sampling. The two wells were situated between the filter cake pit and the settling impoundment and would have

interfered with final grading of the site. Philips requested, and was granted permission by NYSDEC to abandon these two wells. The two wells were filled with neat cement grout, the protective steel casings were removed and the cement-filled well casings were cut off at the appropriate level for final grading.

In 1985 Philips determined that the upper till aquifer was the unit requiring RCRA groundwater monitoring. With the Philips decision to proceed with closure of the hazardous waste impoundments, Philips and NYSDEC/EPA reached an agreement for the implementation of an alternate groundwater monitoring program as provided for by Section 373-3.6(a)(4) of the regulations. The requirements for monitoring the till aquifer with the alternate program are documented in the August 11, 1986 (revised May 11, 1987) report.

The 1987 second quarter monitoring report was submitted to the NYSDEC as the Initial Determination of Findings for the first year assessment period. The third and fourth quarters of 1987, and the data collected during 1988, 1989, 1990, 1991 and 1992 represent a continuation of the assessment program.

Closure activities for the regulated impoundments were completed in 1989. Closure of the impoundments was certified on October 4, 1989. Philips has completed three years of post-closure monitoring as required by the NYSDEC and is preparing a closure report that will present recommendations for future monitoring at the Seneca Falls facility.

C. GROUNDWATER FLOW DIRECTION AND VELOCITY

The 1992 quarterly groundwater elevations continue to indicate that groundwater in the till aquifer flows at or near the till/bedrock interface in a south to southeasterly direction. The figures identified as Figure 1 in Appendices I through IV show the groundwater flow direction and the static water levels for each of the 1992 quarterly sampling rounds. Groundwater elevations from each of the 1992 quarterly sampling rounds are presented in Table 2.

Groundwater flow velocity through the aquifer was calculated using the formula:

$$v = Ki/n$$

where:

v = average linear groundwater flow velocity
K = hydraulic conductivity,
i = hydraulic gradient, and
n = effective porosity of the unit

The hydraulic conductivity of the till aquifer ranges from 0.0283 ft/day to 0.283 ft/day based on the results of previously conducted slug tests. The inferred, average horizontal hydraulic gradient across the site is estimated at 0.103 ft/ft for the year. Monitoring well MW-1 and MW-12 were used to calculate the horizontal hydraulic gradient, for the 1992 Annual Report. The estimated effective porosity of the aquifer is 0.2.

These values yield an average horizontal groundwater flow ranging from approximately 5.3 ft/year to 53 ft/year. The actual velocity and pattern of transport of dissolved constituents are affected by adsorption, dispersion and biochemical degradation processes, which are not accounted for in the discussion above.

D. GROUNDWATER QUALITY

The groundwater samples were analyzed for the four RCRA indicator parameters (pH, Specific Conductance, TOC, TOX), common groundwater ions and heavy metals. The analytical results are presented in Table 3 and in the attached sampling round summary sheets in Appendices A through D.

The 1992 analytical results indicate that groundwater quality parameters have remained within historical limits and show no evidence that the former hazardous waste impoundments have impacted groundwater.

Volatile organic compounds detected in upgradient monitoring well MW-1 during 1992 were 1,1-dichloroethane, ranging in concentration between the limit of detection, which is <0.050 .005 mg/L to 0.0120 mg/L, 1,1-dichloroethane ene, ranging in concentration between the

both in 5/92

limit of detection, which is <0.050 mg/L to 0.0143 mg/L, and 1,1,1-trichloroethane, ranging in concentration between 0.0502 mg/L and 0.0827 mg/L. 1,1,1-trichloroethane was detected in monitoring well MW-8 during the fourth quarter 1992 at a concentration of 0.0254 mg/L. The volatile organic compounds detected in 1992 during quarterly sampling are not related to the hazardous waste impoundments.

E. STATISTICAL EVALUATIONS

Statistical evaluations are not required as part of the assessment phase of the monitoring program.

F. SUMMARY

The alternate monitoring system continues to show no evidence that the hazardous waste impoundments have impacted groundwater.

The volatile organic compounds detected in 1992 are not related to the hazardous waste impoundments. A post closure groundwater monitoring report is being prepared and will be submitted to the NYSDEC in March of 1993. The post closure report will provide recommendations for future groundwater monitoring.

TABLE 1

MONITORING WELL CONSTRUCTION SUMMARY

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL NO.	DATE INSTALLED	TOP OF CASING (MSL)	GROUNDWATER ELEVATION (MSL)	BEDROCK ELEVATION (MSL)	SCREEN TOP ELEVATION (MSL)	SCREEN BOTTOM ELEVATION (MSL)	BORE LOG WELL DEPTH (MSL)	WELL CASE/ ANNULUS I.D. (inches)
PHASE I								
MW-1	3/12/83	462.13	459.33	<429	439.39	429.39	30.0	4/9
MW-2	3/10/83	449.19	445.95	425	434.75	424.75	22.0	4/9
MW-3	3/10/83	446.00	443.20	419	430.03	420.03	24.5	4/9
MW-4	3/9/83	444.56	441.96	417	428.80	418.80	26.0	4/9
MW-5*	3/8/83	457.47	454.36	<424	434.90	424.90	30.0	1.7/6
MW-6*	3/12/83	457.22	454.39	422	431.65	421.65	32.5	1.7/6
PHASE II								
MW-7	9/29/83	443.12	440.52	417	382.00	362.62	80.0	4/6
PHASE III								
MW-8	2/29/84	461.81	459.67	425	open borehole		150.0	0.6
MW-9	3/1/84	443.86	441.89	415	380.00	360.89	85.0	4/6
MW-10	3/3/84	448.81	446.31	417	383.00	363.31	84.0	4/6
PHASE IV								
MW-11	7/12/84	455.94	453.42	413	373.00	354.92	98.0	4/6
MW-12	7/10/84	456.27	453.60	420	421.00	411.60	42.0	4/8.75
PHASE V								
MW-13	10/30/85	459.56	456.39	421.39	431.59	421.79	47.0	1.7/8
MW-14	11/4/85	446.44	443.11	417.78	427.53	417.69	35.3	1.7/8
MW-15	11/7/85	445.32	442.84	419.34	427.84	417.84	33.5	1.7/8
MW-16	11/8/85	448.90	444.93	423.43	432.08	422.95	32.0	1.7/8

NOTES;

1) Bottom of filter cake pit = 445.69.
2) Bottom of settling lagoon = 437.69.

* Well MW-5 and MW-6 were abandoned in 1989 during closure of the regulated units.
MSL - Mean Sea Level.

TABLE 2

QUARTERLY GROUNDWATER ELEVATIONS 1991

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL NO.	FIRST QUARTER Feb. 4, 1992	SECOND QUARTER May 11, 1992	THIRD QUARTER August 5, 1992	FOURTH QUARTER Nov. 5, 1992
M2-1*	455.23	454.91	455.64	455.58
MW-2	Dry	Dry	Dry	Dry
MW-3	Dry	Dry	Dry	Dry
MW-4*	Dry	Dry	Dry	Dry
MW-7**	382.37	385.44	386.14	384.70
MW-8**	375.67	341.76	404.54	415.95
MW-9**	382.20	385.45	386.40	384.63
MW-10**	383.19	366.05	386.86	365.39
MW-11**	377.53	378.58	379.23	379.94
MW-12*	416.30	417.12	417.13	417.47
MW-13*	422.19	422.28	422.33	422.44
MW-14*	Dry	Dry	Dry	Dry
MW-15*	Dry	Dry	Dry	Dry
MW-16*	423.82	417.14	423.96	423.96

NOTES:

Groundwater elevations are in feet MSL.

* RCRA monitoring wells.

** Deep wells.

TABLE 3

SUMMARY OF RCRA INDICATOR PARAMETERS

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

DATE	WELL	SPECIFIC CONDUCTANCE umhos/cm)	pH (standard units)	TOTAL ORGANIC CARBON (mg/L)	TOTAL ORGANIC HALOGENS (mg/L)
FIRST QUARTER 1992					
2/4/92	MW-1	820	6.86	82.5	0.068
2/4/92	MW-8 (1)	3100	7.17	1.55	<0.050
2/4/92	MW-12	NA	NA	73.7	NA
2/4/92	MW-13	1800	7.21	36.8	<0.050
SECOND QUARTER 1992					
5/11/92	MW-1	800	7.17	5.42	0.102
5/11/92	MW-8 (1)	2900	7.37	<1.00	<0.050
5/11/92	MW-12	4300	7.31	2.16	0.050
5/11/92	MW-13	1750	7.32	3.82	<0.050
THIRD QUARTER 1992					
8/5/92	MW-1	950	7.04	13.70	<0.050
8/5/92	MW-8 (1)	3200	7.42	2.00	0.122
8/5/92	MW-12	4800	7.73	3.79	0.060
8/5/92	MW-13	2100	7.79	2.86	0.050
FOURTH QUARTER 1992					
11/5/92	MW-1	850	6.97	14.9	0.060
11/5/92	MW-8 (1)	3300	7.23	1.60	0.296
11/5/92	MW-12	4600	7.31	2.95	0.093
11/5/92	MW-13	1750	7.62	7.68	<0.050

NOTES:

NA - Not analyzed.
(1) Deep well.

APPENDIX A

FIRST QUARTER 1992 GROUNDWATER REPORT

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

FIRST QUARTER 1992
GROUNDWATER MONITORING REPORT

Prepared by:

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
3000 TECH CENTER DRIVE
MONROEVILLE, PENNSYLVANIA 15146

PROJECT NO. 288788

APRIL 1992

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

FIRST QUARTER 1992
GROUNDWATER MONITORING REPORT

I. INTRODUCTION

The groundwater sampling for the First Quarter 1992 RCRA Post Closure Groundwater Monitoring Program at the Philips Display Components, Seneca Falls facility was conducted on February 4 and 5, 1992, by personnel of the Keystone Field Services Group. Groundwater samples were returned to Keystone's Monroeville, PA laboratory for analysis. The results of the First Quarter sampling are discussed below.

II. GROUNDWATER FLOW PATTERNS

The depth to water and calculated groundwater elevations for the First Quarter of 1992 are shown in Table 1. Figure 1 shows the inferred direction of groundwater generated from the monitoring wells screened in the glacial till unit. Figure 1 indicates that the horizontal component of groundwater flow is generally to the east-southeast; which is consistent with previous site data.

III. SAMPLE COLLECTION

Samples were obtained from five wells (MW-8, which is screened in bedrock, and MW-1, MW-12, MW-13 and MW-16, which are screened in the till unit). Three RCRA monitoring wells (MW-4, MW-14, and MW-15) were dry. Additionally, monitoring wells MW-1, MW-8, MW-12, MW-13 and MW-16 were sampled for volatile organic compounds (Method 8240). Monitoring well MW-12 and MW-16 had insufficient sample volume for analyses of total organic halogen and metals. A trip blank was prepared for QA/QC purposes. Samples were analyzed in accordance with the protocols for the Seneca Falls facility.

IV. ANALYTICAL RESULTS

The groundwater samples were analyzed for the four RCRA indicator parameters (pH, Specific Conductance, TOC, TOX), common groundwater ions and heavy metals. The analytical results are presented in the attached sampling round summary sheets (Attachment A).

Metal concentrations were consistent with historical data. Lead was observed in the groundwater samples from monitoring wells MW-1, MW-8 and MW-13 at concentrations of 0.0066 mg/L, 0.0051 mg/L and 0.0055 mg/L, respectively. Chromium and zinc were not observed in the groundwater samples from monitoring wells MW-1, MW-8 and MW-13 above the detection limits of 0.02 mg/L and 0.01 mg/L, respectively.

Volatile organic compounds were detected in groundwater samples collected from monitoring well MW-1. The compounds and the concentrations were: 1,1-dichloroethene (0.006 mg/L), 1,1-dichloroethane (0.0083 mg/L), and 1,1,1-trichloroethane (0.0806 mg/L).

Methyl chloride was detected in the trip blank at a concentration of 0.006 mg/L. Methylene chloride was not detected in the groundwater samples and is believed to be a laboratory contaminant.

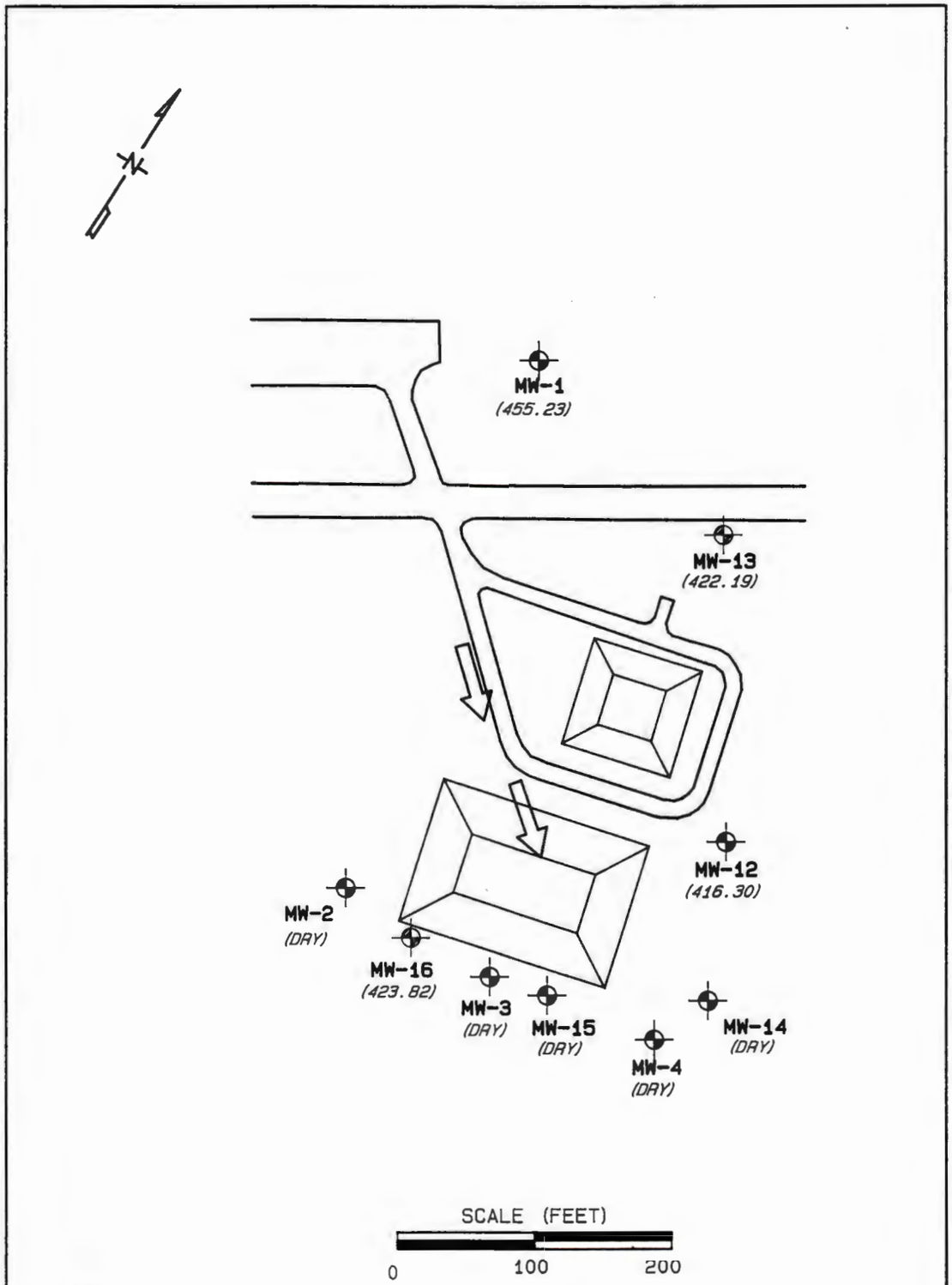
The groundwater quality for the First Quarter sampling in 1992 is consistent with historical data and does not indicate that the closed RCRA impoundments have impacted groundwater.

V. STATISTICAL EVALUATIONS

Post closure monitoring is being performed under the groundwater quality assessment program and therefore, statistical evaluations are not required. A summary of the RCRA indicator parameter values obtained during the First Quarter is presented in Table 2.

VI. SAMPLING SCHEDULE

Unless otherwise advised by the New York State DEC, groundwater monitoring will continue for the Second Quarter of 1992 in the same manner as in the past.



KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

FIGURE 1

TILL AQUIFER MONITORING SYSTEM
GROUNDWATER ELEVATIONS 02/04/92
PHILIPS DCC
SENECA FALLS, NEW YORK

C69134

TABLE 1

SUMMARY OF GROUNDWATER ELEVATIONS
FIRST QUARTER 1992
PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL	BOTTOM OF SCREEN ELEVATION (1) (ft)	TOP OF RISER ELEVATION (1) (ft)	DEPTH TO WATER (ft)	GROUNDWATER ELEVATION (1) (ft)
MW-1 (2)	420.39	462.13	6.90	455.23
MW-2 (2)	424.75	449.19	DRY	—
MW-3	420.03	446.00	DRY	—
MW-4 (2)	—	443.12	DRY	—
MW-7 (3)	—	443.12	60.75	382.37
MW-8 (3)	—	461.91	86.24	375.67
MW-9 (3)	—	443.86	61.66	382.20
MW-10 (3)	—	448.81	65.62	383.19
MW-11 (3)	—	455.94	78.41	377.53
MW-12 (2)	411.60	456.27	39.97	416.30
MW-13 (2)	421.79	459.56	37.37	422.19
MW-14 (2)	417.69	446.44	DRY	—
MW-15 (2)	417.84	445.32	DRY	—
MW-16 (2)	422.95	448.90	25.08	423.82

NOTES:

The measurements were taken on
(1) Elevations are in feet above mean sea level.
(2) RCRA monitoring wells.
(3) Deep wells.

TABLE 2

SUMMARY OF RCRA INDICATOR PARAMETERS
FIRST QUARTER 1992
PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL	SPECIFIC CONDUCTANCE (umhos/cm)	pH (standard units)	TOTAL ORGANIC CARBON (mg/L)	TOTAL ORGANIC HALOGENS (mg/L)
MW-1	820	6.86	82.5	0.068
MW-8 (1)	3100	7.17	1.55	<0.050
MW-12	NA	NA	73.7	NA
MW-13	1800	7.21	36.8	<0.050

NOTES:

NA - Not analyzed.
The in-situ measurements were taken on
(1) Deep well.

ATTACHMENT A

SAMPLING ROUND SUMMARIES

S A M P L I N G R O U N D S U M M A R Y (SRS) 04/29/92

RESULTS BY FACILITY, SITE AND SAMPLING POINT.
FOR YEAR 92 ROUND NO. 01 PURPOSE: ASSESSMENT

CLIENT : Philips DCC FACILITY : SENECA FALLS
SITE : HAZARDOUS WASTE MANAGEMENT LOCATION : SENECA FALLS, N.Y.
POINTS : < ALL >

		<----------S A M P L I N G P O I N T---------->				
		MW-1	MW-8	MW-12	MW-13	MW-16
		UPGRADIENT	DOWNGRADIENT	DOWNGRADIENT	DOWNGRADIENT	DOWNGRADIENT
		WELL	BEDROCK	BEDRK/TILL	TILL	TILL
		02/05/92	02/05/92	02/05/92	02/05/92	02/05/92
PARAMETER	UNIT	M920246003	M920246004	M920246005	M920246006	M920246007
CADMIUM	MG/L	<0.005	<0.005	N/A	<0.005	N/A
CHROMIUM	MG/L	<0.01	<0.01	N/A	<0.01	N/A
FLUORIDE	MG/L	0.216	1.08	N/A	0.720	N/A
LEAD	MG/L	0.0066	0.0051	N/A	0.0055	N/A
CHLORIDE	MG/L	15.4	632	N/A	22.2	N/A
MANGANESE	MG/L	0.0185	0.252	N/A	0.22	N/A
SODIUM	MG/L	25.1	329.	N/A	42.3	N/A
SULFATE	MG/L	179	2010	N/A	1600	N/A
TOTAL ORGANIC CARBON	MG/L	82.5	1.55	73.7	36.8	48.7
TOTAL ORGANIC HALOGEN	MG/L	0.0680	<0.0500	N/A	<0.0500	N/A
FIELD PH	SU	6.86	7.17	N/A	7.21	N/A
FIELD SPECIFIC CONDUCTANCE	UMHOS/CM	820	3100	N/A	1800	N/A
TEMPERATURE	C	10.0	9.00	N/A	9.00	N/A
BENZENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
BROMOFORM	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
CARBON TETRACHLORIDE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
CHLOROBENZENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
CHLORODIBROMOMETHANE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
CHLOROETHANE	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
CHLOROFORM	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
DICHLOROBROMOMETHANE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-DICHLOROETHANE	MG/L	0.0083	<0.005	<0.005	<0.005	<0.005
1,2-DICHLOROETHANE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-DICHLOROETHENE	MG/L	0.006	<0.005	<0.005	<0.005	<0.005
1,2-DICHLOROPROPANE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
CIS-1,3-DICHLOROPROPENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
TRANS-1,3-DICHLOROPROPENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
ETHYLBENZENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
METHYL BROMIDE	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
METHYL CHLORIDE	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
METHYLENE CHLORIDE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-TETRACHLOROETHANE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
TETRACHLOROETHYLENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
TOLUENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
TRANS-1,2,-DICHLOROETHENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-TRICHLOROETHANE	MG/L	0.0806	<0.005	<0.005	<0.005	<0.005
1,1,2-TRICHLOROETHANE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
TRICHLOROETHYLENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
VINYL CHLORIDE	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
CALCIUM	MG/L	143.	467.	N/A	607.	N/A
CIS 1,2-DICHLOROETHENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
MAGNESIUM	MG/L	74.7	103.	N/A	91.5	N/A
NICKEL	MG/L	<0.04	<0.04	N/A	<0.04	N/A

S A M P L I N G R O U N D S U M M A R Y (SRS) 04/29/92

RESULTS BY FACILITY, SITE AND SAMPLING POINT.
FOR YEAR 92 ROUND NO. 01 PURPOSE: ASSESSMENT

CLIENT : Philips DCC FACILITY : SENECA FALLS
SITE : HAZARDOUS WASTE MANAGEMENT LOCATION : SENECA FALLS, N.Y.
POINTS : < ALL >

PARAMETER	UNIT	MW-1 UPGRADIENT WELL 02/05/92 M920246003	MW-8 DOWNGRADIENT BEDROCK 02/05/92 M920246004	MW-12 DOWNGRADIENT BEDRK/TILL 02/05/92 M920246005	MW-13 DOWNGRADIENT TILL 02/05/92 M920246006	MW-16 DOWNGRADIENT TILL 02/05/92 M920246007
STYRENE	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
XYLENES	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005
ZINC	MG/L	<0.02	<0.02	N/A	<0.02	N/A

S A M P L I N G R O U N D S U M M A R Y (SRS) 04/29/92

RESULTS BY FACILITY, SITE AND SAMPLING POINT.
FOR YEAR 92 ROUND NO. 01 PURPOSE: ASSESSMENT

CLIENT : Philips DCC FACILITY : SENECA FALLS
SITE : HAZARDOUS WASTE MANAGEMENT LOCATION : SENECA FALLS, N.Y.
POINTS : < ALL >

		<----------S A M P L I N G P O I N T---------->
		TRIP BLANK
		GRAB
		02/05/92
PARAMETER	UNIT	M920246008
CADMIUM	MG/L	<0.005
CHROMIUM	MG/L	<0.01
FLUORIDE	MG/L	<0.100
LEAD	MG/L	0.0046
CHLORIDE	MG/L	<1.00
MANGANESE	MG/L	<0.015
SODIUM	MG/L	<5.
SULFATE	MG/L	<1.00
TOTAL ORGANIC CARBON	MG/L	<1.00
TOTAL ORGANIC HALOGEN	MG/L	<0.0500
FIELD PH	SU	7.40
FIELD SPECIFIC CONDUCTANCE	UMHOS/CM	<1.00
TEMPERATURE	C	N/A
BENZENE	MG/L	<0.005
BROMOFORM	MG/L	<0.005
CARBON TETRACHLORIDE	MG/L	<0.005
CHLOROBENZENE	MG/L	<0.005
CHLORODIBROMOMETHANE	MG/L	<0.005
CHLOROETHANE	MG/L	<0.01
CHLOROFORM	MG/L	<0.005
DICHLOROBROMOMETHANE	MG/L	<0.005
1,1-DICHLOROETHANE	MG/L	<0.005
1,2-DICHLOROETHANE	MG/L	<0.005
1,1-DICHLOROETHENE	MG/L	<0.005
1,2-DICHLOROPROPANE	MG/L	<0.005
CIS-1,3-DICHLOROPROPENE	MG/L	<0.005
TRANS-1,3-DICHLOROPROPENE	MG/L	<0.005
ETHYLBENZENE	MG/L	<0.005
METHYL BROMIDE	MG/L	<0.01
METHYL CHLORIDE	MG/L	<0.01
METHYLENE CHLORIDE	MG/L	0.005
1,1,2,2-TETRACHLOROETHANE	MG/L	<0.005
TETRACHLOROETHYLENE	MG/L	<0.005
TOLUENE	MG/L	<0.005
TRANS-1,2,-DICHLOROETHENE	MG/L	<0.005
1,1,1-TRICHLOROETHANE	MG/L	<0.005
1,1,2-TRICHLOROETHANE	MG/L	<0.005
TRICHLOROETHYLENE	MG/L	<0.005
VINYL CHLORIDE	MG/L	<0.01
CALCIUM	MG/L	<5.
CIS 1,2-DICHLOROETHENE	MG/L	<0.005
MAGNESIUM	MG/L	<5.
NICKEL	MG/L	<0.04

S A M P L I N G R O U N D S U M M A R Y (SRS) 04/29/92

RESULTS BY FACILITY, SITE AND SAMPLING POINT.
FOR YEAR 92 ROUND NO. 01 PURPOSE: ASSESSMENT

CLIENT : Philips DCC FACILITY : SENECA FALLS
SITE : HAZARDOUS WASTE MANAGEMENT LOCATION : SENECA FALLS, N.Y.
POINTS : < ALL >

		TRIP BLANK
		GRAB
		02/05/92
PARAMETER	UNIT	M920246008
STYRENE	MG/L	<0.005
XYLENES	MG/L	<0.005
ZINC	MG/L	<0.02

APPENDIX B

SECOND QUARTER 1992 GROUNDWATER REPORT

CHESTER
ENVIRONMENTAL

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

SECOND QUARTER 1992
GROUNDWATER MONITORING REPORT

Prepared by:

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
3000 TECH CENTER DRIVE
MONROEVILLE, PENNSYLVANIA 15146

PROJECT NO. 288788-20

SEPTEMBER 1992

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

SECOND QUARTER 1992
GROUNDWATER MONITORING REPORT

I. INTRODUCTION

The groundwater sampling for the Second Quarter 1992 RCRA Post Closure Groundwater Monitoring Program at the Philips Display Components, Seneca Falls facility was conducted on May 11 and 12, 1992, by personnel of the Keystone Field Services Group. Groundwater samples were returned to Keystone's Monroeville, PA laboratory for analysis. The results of the Second Quarter sampling are discussed below.

II. GROUNDWATER FLOW PATTERNS

The depth to water and calculated groundwater elevations for the Second Quarter of 1992 are shown in Table 1. Figure 1 shows the inferred direction of groundwater generated from the monitoring wells screened in the glacial till unit. Figure 1 indicates that the horizontal component of groundwater flow is generally to the east-southeast; which is consistent with previous site data.

III. SAMPLE COLLECTION

Samples were obtained from four wells (MW-8, which is screened in bedrock, and MW-1, MW-12, and MW-13 which are screened in the till unit). Four RCRA monitoring wells (MW-4, MW-14, MW-15 and MW-16) were dry. Additionally, monitoring wells MW-1, MW-8, MW-12 and MW-13 were sampled for volatile organic compounds (Method 8240). A trip blank (TB) was prepared for QA/QC purposes. Samples were analyzed in accordance with the protocols for the Seneca Falls facility.

IV. ANALYTICAL RESULTS

The groundwater samples were analyzed for the four RCRA indicator parameters (pH, Specific Conductance, TOC, TOX), common groundwater ions and heavy metals. The analytical results are presented in Table 2 and in the attached sampling round summary sheet (Attachment A).

Metal concentrations were consistent with historical data. Lead was observed in the groundwater samples from monitoring wells MW-1 and MW-13 at concentrations of 0.0034 mg/L and 0.0093 mg/L, respectively. Zinc was observed in the groundwater samples from monitoring wells MW-12 and MW-13 at concentrations of 0.0382 mg/L and 0.026 mg/L, respectively. Chromium was not detected in the groundwater samples from monitoring wells MW-1, MW-8 and MW-13.

Volatile organic compounds were detected in groundwater samples collected from monitoring well MW-1. The compounds and the concentrations were: 1,1-dichloroethene (0.0143 mg/L), 1,1-dichloroethane (0.012 mg/L), and 1,1,1-trichloroethane (0.0827 mg/L).

Volatile organic analysis is not a requirement under the current RCRA groundwater monitoring program. The analysis has been requested by the NYSDEC on a quarterly basis and the analytical results are presented as a convenience.

The groundwater quality for the Second Quarter sampling in 1992 is consistent with historical data and does not indicate that the closed RCRA impoundments have impacted groundwater.

V. STATISTICAL EVALUATIONS

Post closure monitoring is being performed under the groundwater quality assessment program and therefore, statistical evaluations are not required. A summary of the RCRA indicator parameter values obtained during the Second Quarter is presented in Table 2.

VI. SAMPLING SCHEDULE

Unless otherwise advised by the New York State DEC, groundwater monitoring will continue for the Second Quarter of 1992 in the same manner as in the past.

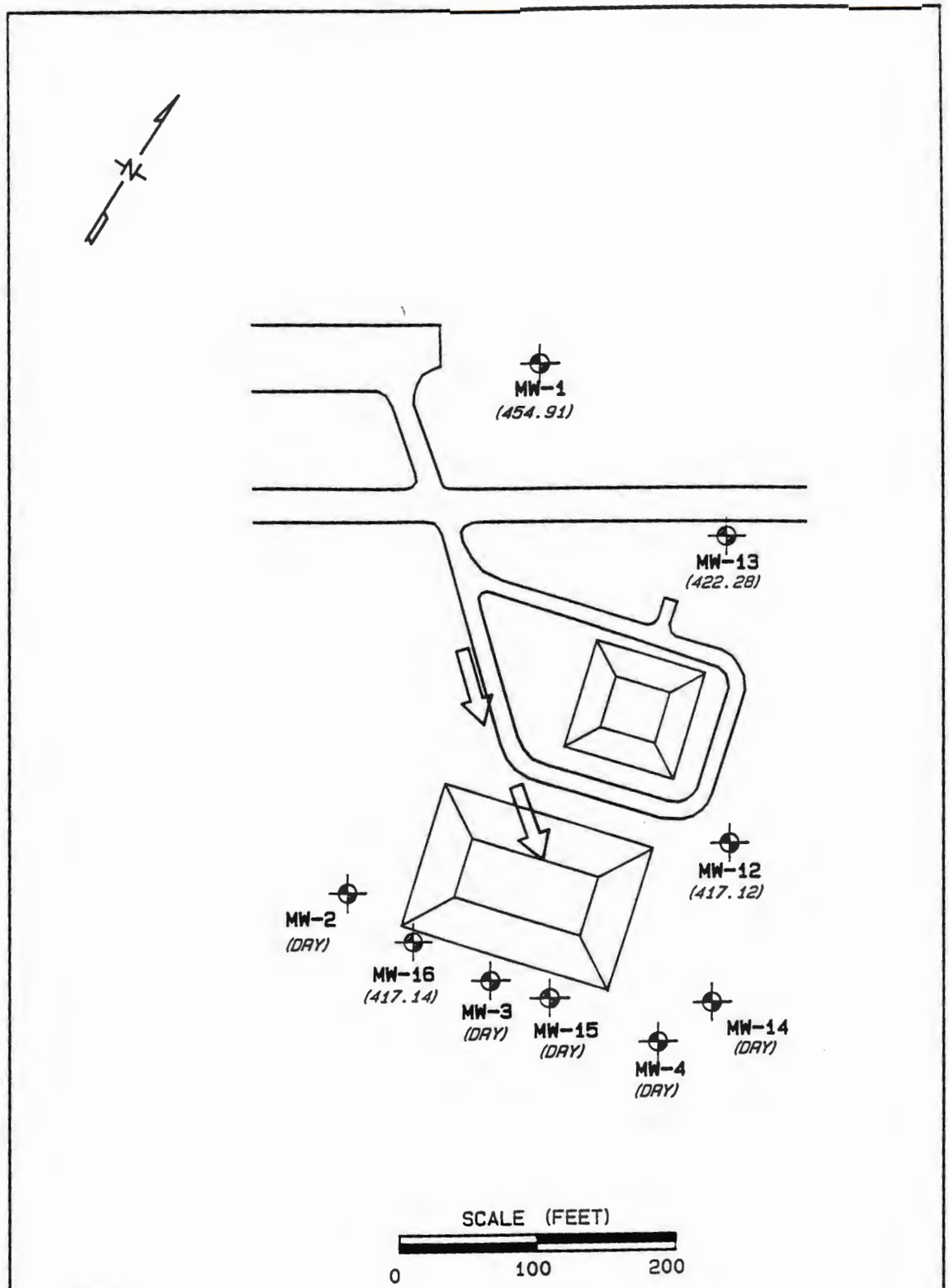


FIGURE 1

TILL AQUIFER MONITORING SYSTEM
GROUNDWATER ELEVATIONS 05/11/92
PHILIPS DCC
SENECA FALLS, NEW YORK

C69134

TABLE 1

SUMMARY OF GROUNDWATER ELEVATIONS
FIRST QUARTER 1992
PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL	BOTTOM OF SCREEN ELEVATION (1) (ft)	TOP OF RISER ELEVATION (1) (ft)	DEPTH TO WATER (ft)	GROUNDWATER ELEVATION (1) (ft)
MW-1 (2)	420.39	462.13	7.22	454.91
MW-2 (2)	424.75	449.19	DRY	—
MW-3	420.03	446.00	DRY	—
MW-4 (2)	—	443.12	DRY	—
MW-7 (3)	—	443.12	57.68	385.44
MW-8 (3)	—	461.91	70.15	341.76
MW-9 (3)	—	443.86	58.41	385.45
MW-10 (3)	—	448.81	82.76	366.05
MW-11 (3)	—	455.94	77.36	378.58
MW-12 (2)	411.60	456.27	39.15	417.12
MW-13 (2)	421.79	459.56	37.28	422.28
MW-14 (2)	417.69	446.44	DRY	—
MW-15 (2)	417.84	445.32	DRY	—
MW-16 (2)	422.95	448.90	31.76	417.14

NOTES:

The measurements were taken on
(1) Elevations are in feet above mean sea level.
(2) RCRA monitoring wells.
(3) Deep wells.

288788-20 T1MRW673.WK1 8/92

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

TABLE 2

SUMMARY OF RCRA INDICATOR PARAMETERS
SECOND QUARTER 1992
PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL	SPECIFIC CONDUCTANCE (umhos/cm)	pH (standard units)	TOTAL ORGANIC CARBON (mg/L)	TOTAL ORGANIC HALOGENS (mg/L)
MW-1	800	7.17	5.42	0.102
MW-8 (1)	2900	7.37	<1.00	<0.050
MW-12	4300	7.31	2.16	0.050
MW-13	1750	7.32	3.82	<0.050

NOTES:

NA - Not analyzed.
The in-situ measurements were taken on 5/11/92 and 5/12/92.
(1) Deep well.

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

ATTACHMENT A

SAMPLING ROUND SUMMARY

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

SAMPLING ROUND SUMMARY (SRS)
RESULTS BY FACILITY, SITE AND SAMPLING POINT

CLIENT: Philips DCC
SITE: HAZARDOUS WASTE MANAGEMENT
POINTS: ALL

FACILITY: SENECA FALLS
LOCATION: SENECA FALLS, N.Y.

LOCATION		WELL MW-1	WELL MW-8	WELL MW-12	WELL MW-13	TRIP BLANK
DATE COLLECTED		12-MAY-1992	12-MAY-1992	12-MAY-1992	12-MAY-1992	12-MAY-1992
WORK ORDER		M92-05-104-003	M92-05-104-004	M92-05-104-005	M92-05-104-006	M92-05-104-007
PARAMETER	UNITS					
Chloromethane	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Bromomethane	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Vinyl Chloride	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroethane	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Methylene Chloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Acetone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Disulfide	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	mg/L	0.0143	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	mg/L	0.012	<0.005	<0.005	<0.005	<0.005
trans-1,2-Dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
2-Butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,1-Trichloroethane	mg/L	0.0827	<0.005	<0.005	<0.005	<0.005
Carbon Tetrachloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Acetate	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Bromodichloromethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloropropane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
trans-1,3-Dichloropropene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Dibromochloromethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Benzene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,3-Dichloropropene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Bromoform	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
2-Hexanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
4-Methyl-2-pentanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Chlorobenzene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Ethyl Benzene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Styrene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Xylenes	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Calcium	mg/L	136	535	1120	604	NA
Cadmium	mg/L	<0.005	<0.005	<0.025	<0.005	NA
Chloride	mg/L	16.4	333	324	40.6	NA
Chromium	mg/L	<0.01	<0.01	<0.05	<0.01	NA
Fluoride	mg/L	0.263	1.18	0.594	0.816	NA
Magnesium	mg/L	69.4	118	209	99.2	NA
Manganese	mg/L	0.0183	0.11	2.82	0.239	NA
Sodium	mg/L	22.5	260	740	38.3	NA
Nickel	mg/L	<0.04	<0.04	<0.2	<0.04	NA
Lead	mg/L	0.0034	<0.003	0.0093	<0.003	NA
Sulfate	mg/L	950	730	740	870	NA
Total Organic Carbon	mg/L	5.42	<1.00	2.16	3.82	NA
Total Organic Halogens	mg/L	0.102	<0.05	0.05	<0.05	NA
Zinc	mg/L	<0.02	<0.02	0.0382	0.026	NA
Field Specific Conductivity	umhos/cm	800	2900	4800	1750	NA
Field pH	Units	7.17	7.36	7.31	7.32	NA

APPENDIX C

THIRD QUARTER 1992 GROUNDWATER REPORT

CHESTER
ENVIRONMENTAL

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

THIRD QUARTER 1992
GROUNDWATER MONITORING REPORT

Prepared by:

CHESTER ENVIRONMENTAL
3000 TECH CENTER DRIVE
MONROEVILLE, PENNSYLVANIA 15146

PROJECT NO. 288788-20

FEBRUARY 1993

CHESTER
ENVIRONMENTAL

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

THIRD QUARTER 1992
GROUNDWATER MONITORING REPORT

I. INTRODUCTION

The groundwater sampling for the Third Quarter 1992 RCRA Post Closure Groundwater Monitoring Program at the Philips Display Components, Seneca Falls facility was conducted on August 5 and 6, 1992, by personnel of the Keystone Field Services Group. Groundwater samples were returned to Keystone's Monroeville, PA laboratory for analysis. The results of the Third Quarter sampling are discussed below.

II. GROUNDWATER FLOW PATTERNS

The depth to water and calculated groundwater elevations for the Third Quarter of 1992 are shown in Table 1. Figure 1 shows the inferred direction of groundwater generated from the monitoring wells screened in the glacial till unit. Figure 1 indicates that the horizontal component of groundwater flow is generally to the east-southeast; which is consistent with previous site data.

III. SAMPLE COLLECTION

Samples were obtained from four wells (MW-8, which is screened in bedrock, and MW-1, MW-12, and MW-13 which are screened in the till unit). Four RCRA monitoring wells (MW-4, MW-14, MW-15 and MW-16) were dry. Additionally, monitoring wells MW-1, MW-8, MW-12 and MW-13 were sampled for volatile organic compounds (Method 8240). A trip blank (TB) was prepared for QA/QC purposes. Samples were analyzed in accordance with the protocols for the Seneca Falls facility.

IV. ANALYTICAL RESULTS

The groundwater samples were analyzed for the four RCRA indicator parameters (pH, Specific Conductance, TOC, TOX), common groundwater ions and heavy metals. The analytical results are presented in Table 2 and in the attached sampling round summary sheet (Attachment A).

Metal concentrations were consistent with historical data. Lead was observed in the groundwater samples from monitoring wells MW-1, MW-8, MW-12 and MW-13 at concentrations of 0.0049 mg/L, 0.0046 mg/L, 0.0383 mg/L and 0.0062 mg/L, respectively. Zinc was observed in the groundwater sample from monitoring well MW-13 at a concentration of 0.257 mg/L. Chromium was not detected in the groundwater samples from monitoring wells MW-1, MW-8, MW-12, and MW-13.

One volatile organic compound was detected in the groundwater sample collected from monitoring well MW-1. The compound and the concentration was 1,1,1-trichloroethane (0.0502 mg/L).

Volatile organic analysis is not a requirement under the current RCRA groundwater monitoring program. The analysis has been requested by the NYSDEC on a quarterly basis and the analytical results are presented as a convenience.

The groundwater quality for the Third Quarter sampling in 1992 is consistent with historical data and does not indicate that the closed RCRA impoundments have impacted groundwater.

V. STATISTICAL EVALUATIONS

Post closure monitoring is being performed under the groundwater quality assessment program and therefore, statistical evaluations are not required. A summary of the RCRA indicator parameter values obtained during the Third Quarter is presented in Table 2.

VI. SAMPLING SCHEDULE

Unless otherwise advised by the New York State DEC, groundwater monitoring will continue for the Fourth Quarter of 1992 in the same manner as in the past.

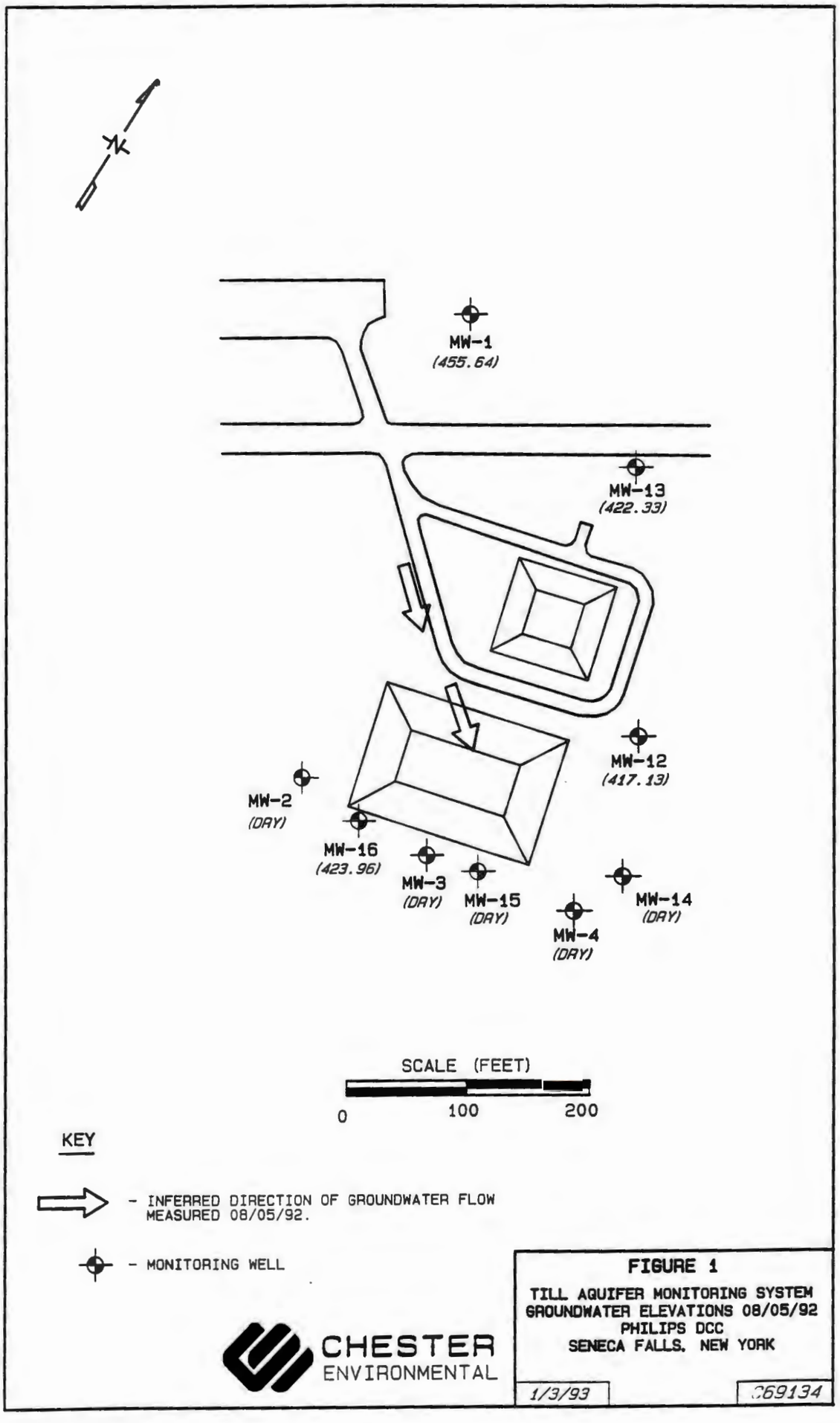

MW-1
(455.64)
MW-13
(422.33)
MW-12
(417.13)
MW-2
(DRY)
MW-16
(423.96)
MW-3
(DRY)
MW-15
(DRY)
MW-14
(DRY)
MW-4
(DRY)
SCALE (FEET)
0
100
200
KEY
- INFERRED DIRECTION OF GROUNDWATER FLOW MEASURED 08/05/92.
- MONITORING WELL
CHESTER ENVIRONMENTAL
FIGURE 1
TILL AQUIFER MONITORING SYSTEM
GROUNDWATER ELEVATIONS 08/05/92
PHILIPS DCC
SENECA FALLS, NEW YORK
1/3/93
069134

TABLE 2

SUMMARY OF RCRA INDICATOR PARAMETERS
THIRD QUARTER 1992
PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL	SPECIFIC CONDUCTANCE (umhos/cm)	pH (standard units)	TOTAL ORGANIC CARBON (mg/L)	TOTAL ORGANIC HALOGENS (mg/L)
MW-1	950	7.04	13.70	<0.050
MW-8 (1)	3200	7.42	2.00	0.122
MW-12	4800	7.73	3.79	0.060
MW-13	2100	7.79	2.86	0.050

NOTES:

The in-situ measurements were taken on 8/6/92.
(1) Deep well.

TABLE 1

SUMMARY OF GROUNDWATER ELEVATIONS
THIRD QUARTER 1992
PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL	BOTTOM OF SCREEN ELEVATION (1) (ft)	TOP OF RISER ELEVATION (1) (ft)	DEPTH TO WATER (ft)	GROUNDWATER ELEVATION (1) (ft)
MW-1 (2)	420.39	462.13	6.49	455.64
MW-2 (2)	424.75	449.19	DRY	—
MW-3	420.03	446.00	DRY	—
MW-4 (2)	—	443.12	DRY	—
MW-7 (3)	—	443.12	56.98	386.14
MW-8 (3)	—	461.91	57.37	404.54
MW-9 (3)	—	443.86	57.46	386.40
MW-10 (3)	—	448.81	61.95	386.86
MW-11 (3)	—	455.94	76.71	379.23
MW-12 (2)	411.60	456.27	39.14	417.13
MW-13 (2)	421.79	459.56	37.23	422.33
MW-14 (2)	417.69	446.44	DRY	—
MW-15 (2)	417.84	445.32	DRY	—
MW-16 (2)	422.95	448.90	24.94	423.96

NOTES:

The measurements were taken on 8/5/92.
(1) Elevations are in feet above mean sea level.
(2) RCRA monitoring wells.
(3) Deep wells.

ATTACHMENT A

SAMPLING ROUND SUMMARY

THIRD QUARTER 1992
SAMPLING ROUND SUMMARY (SRS)
RESULTS BY FACILITY, SITE AND SAMPLING POINT

CLIENT: Philips DCC
SITE: HAZARDOUS WASTE MANAGEMENT
POINTS: ALL

FACILITY: SENECA FALLS
LOCATION: SENECA FALLS, N.Y.

LOCATION		WELL MW-1	WELL MW-8	WELL MW-12	WELL MW-13	TRIP BLANK
DATE COLLECTED		6-AUG-1992	6-AUG-1992	6-AUG-1992	6-AUG-1992	6-AUG-1992
WORK ORDER		M92-58-003	M92-58-004	M92-58-005	M92-58-006	M92-58-007
PARAMETER	UNITS					
Chloromethane	mg/L	<0.1	<0.01	<0.01	<0.01	<0.01
Bromomethane	mg/L	<0.1	<0.01	<0.01	<0.01	<0.01
Vinyl Chloride	mg/L	<0.1	<0.01	<0.01	<0.01	<0.01
Chloroethane	mg/L	<0.1	<0.01	<0.01	<0.01	<0.01
Methylene Chloride	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Acetone	mg/L	0.270	<0.01	<0.01	<0.01	<0.01
Carbon Disulfide	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
trans-1,2-Dichloroethene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Chloroform	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
2-Butanone	mg/L	<0.100	<0.01	<0.01	<0.01	<0.01
1,1,1-Trichloroethane	mg/L	0.0502	<0.005	<0.005	<0.005	<0.005
Carbon Tetrachloride	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Vinyl Acetate	mg/L	<0.100	<0.01	<0.01	<0.01	<0.01
Bromodichloromethane	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
1,2-Dichloropropane	mg/L	<0.050	<0.005	<0,005	<0.005	<0.005
trans-1,3-Dichloropropene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Trichloroethene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Dibromochloromethane	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Benzene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
cis-1,3-Dichloropropene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Bromoform	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
2-Hexanone	mg/L	<0.100	<0.01	<0.01	<0.01	<0.01
4-Methyl-2-pentanone	mg/L	<0.100	<0.01	<0.01	<0.01	<0.01
Tetrachloroethene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Toluene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Chlorobenzene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Ethyl Benzene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Styrene	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Xylenes	mg/L	<0.050	<0.005	<0.005	<0.005	<0.005
Calcium	mg/L	149	563	1160	637	NA
Cadmium	mg/L	<0.005	<0.005	<0.025	<0.005	NA
Chloride	mg/L	42.7	256	323	78.9	NA
Chromium	mg/L	<0.01	<0.01	<0.05	<0.01	NA
Fluoride	mg/L	0.107	0.544	0.268	0.326	NA
Magnesium	mg/L	61.7	125	277	109	NA
Manganese	mg/L	0.115	0.152	3.06	0.251	NA
Sodium	mg/L	27.1	311	705	41.6	NA
Nickel	mg/L	<0.04	<0.04	<0.2	<0.04	NA
Lead	mg/L	0.0049	0.0046	0.0383	0.0062	NA
Sulfate	mg/L	146	2350	2400	2320	NA
Total Organic Carbon	mg/L	13.7	2	3.79	2.86	NA
Total Organic Halogens	mg/L	<0.050	0.116	0.06	0.05	NA
Zinc	mg/L	<0.02	<0.02	0.257	<0.020	NA
Field Specific Conductivity	umhos/cm	950	3200	4800	2100	NA
Field pH	Units	7.04	7.42	7.73	7.79	NA

APPENDIX D

FOURTH QUARTER 1992 GROUNDWATER REPORT

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

FOURTH QUARTER 1992
GROUNDWATER MONITORING REPORT

Prepared by:

CHESTER ENVIRONMENTAL
3000 TECH CENTER DRIVE
MONROEVILLE, PENNSYLVANIA 15146

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CHESTER
ENVIRONMENTAL

PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

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GROUNDWATER MONITORING REPORT

I. INTRODUCTION

The groundwater sampling for the Fourth Quarter 1992 RCRA Post Closure Groundwater Monitoring Program at the Philips Display Components, Seneca Falls facility was conducted on November 5 and 6, 1992, by personnel of the Keystone Field Services Group. Groundwater samples were returned to Keystone's Monroeville, PA laboratory for analysis. The results of the Fourth Quarter sampling are discussed below.

II. GROUNDWATER FLOW PATTERNS

The depth to water and calculated groundwater elevations for the Fourth Quarter of 1992 are shown in Table 1. Figure 1 shows the inferred direction of groundwater flow from the monitoring wells screened in the glacial till unit. Figure 1 indicates that the horizontal component of groundwater flow is generally to the east-southeast; which is consistent with previous site data.

III. SAMPLE COLLECTION

Samples were obtained from four wells (MW-8, which is screened in bedrock, and MW-1, MW-12, and MW-13 which are screened in the till unit). Four monitoring wells (MW-4, MW-14, MW-15 and MW-16) were dry. Additionally, monitoring wells MW-1, MW-8, MW-12 and MW-13 were sampled for volatile organic compounds (Method 8240). A trip blank (TB) was prepared for QA/QC purposes. Samples were analyzed in accordance with the protocols for the Seneca Falls facility.

IV. ANALYTICAL RESULTS

The groundwater samples were analyzed for the four RCRA indicator parameters (pH, Specific Conductance, TOC, TOX), common groundwater ions and heavy metals. The analytical results are presented in Table 2 and in the attached sampling round summary sheet (Attachment A).

Metal concentrations were consistent with historical data. Lead was observed in the groundwater samples from monitoring wells MW-1, MW-12 and MW-13 at concentrations of 0.0047 mg/L, 0.0226 mg/L and 0.0063 mg/L, respectively. Zinc was observed in the groundwater sample from monitoring wells MW-1 and MW-13 at concentrations of 0.034 mg/L and 0.257 mg/L, respectively. Chromium was detected in groundwater samples from monitoring wells MW-1 and MW-13 at concentrations of 0.0207 mg/L and 0.0128 mg/L, respectively.

Volatile organic compounds were detected in the groundwater samples collected from monitoring wells MW-1 and MW-8. The compounds 1,1-dichloroethane and 1,1,1-trichloroethane were detected in MW-1 at concentrations of 0.0105 mg/L and 0.068 mg/L, respectively. The compound 1,1,1-trichloroethane was detected in MW-12 at a concentration of 0.0254 mg/L.

Volatile organic analysis is not a requirement under the current RCRA groundwater monitoring program. The analysis has been requested by the NYSDEC on a quarterly basis and the analytical results are presented as a convenience.

The groundwater quality for the Fourth Quarter sampling in 1992 is consistent with historical data and does not indicate that the closed RCRA impoundments have impacted groundwater.

V. STATISTICAL EVALUATIONS

Post closure monitoring is being performed under the groundwater quality assessment program and therefore, statistical evaluations are not required. A

summary of the RCRA indicator parameter values obtained during the Fourth Quarter is presented in Table 2.

VI. SAMPLING SCHEDULE

The post closure groundwater monitoring report is being prepared and will be submitted to the NYSDEC in March 1993. The post closure report will provide recommendations for future groundwater monitoring.

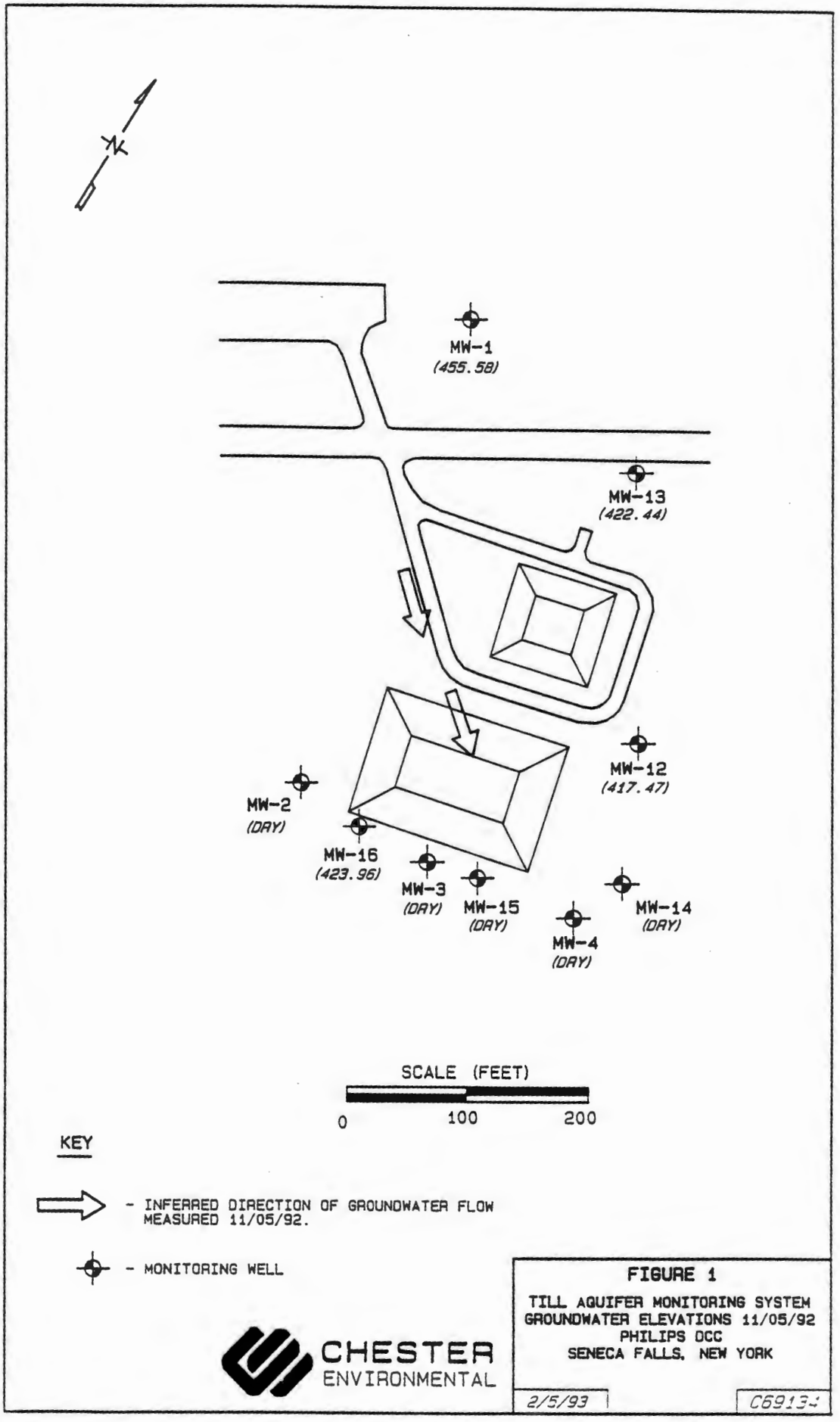
N
MW-1
(455.58)
MW-13
(422.44)
MW-12
(417.47)
MW-2
(DRY)
MW-16
(423.96)
MW-3
(DRY)
MW-15
(DRY)
MW-14
(DRY)
MW-4
(DRY)
SCALE (FEET)
0
100
200
KEY
- INFERRED DIRECTION OF GROUNDWATER FLOW MEASURED 11/05/92.
- MONITORING WELL
CHESTER
ENVIRONMENTAL
FIGURE 1
TILL AQUIFER MONITORING SYSTEM
GROUNDWATER ELEVATIONS 11/05/92
PHILIPS DCC
SENECA FALLS, NEW YORK
2/5/93
C6913-

TABLE 1

SUMMARY OF GROUNDWATER ELEVATIONS
FOURTH QUARTER 1992
PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL	BOTTOM OF SCREEN ELEVATION (1) (ft)	TOP OF RISER ELEVATION (1) (ft)	DEPTH TO WATER (ft)	GROUNDWATER ELEVATION (1) (ft)
MW-1 (2)	420.39	462.13	7.55	455.58
MW-2 (2)	424.75	449.19	DRY	——
MW-3	420.03	446.00	DRY	——
MW-4 (2)	——	443.12	DRY	——
MW-7 (3)	——	443.12	58.42	384.70
MW-8 (3)	——	461.91	45.96	415.95
MW-9 (3)	——	443.86	59.23	384.63
MW-10 (3)	——	448.81	83.42	365.39
MW-11 (3)	——	455.94	0.00	379.94
MW-12 (2)	411.60	456.27	38.80	417.47
MW-13 (2)	421.79	459.56	37.12	422.44
MW-14 (2)	417.69	446.44	DRY	——
MW-15 (2)	417.84	445.32	DRY	——
MW-16 (2)	422.95	448.90	24.94	423.96

NOTES:

The measurements were taken on 11/5/92.
(1) Elevations are in feet above mean sea level.
(2) RCRA monitoring wells.
(3) Deep wells.

TABLE 2

SUMMARY OF RCRA INDICATOR PARAMETERS
FOURTH QUARTER 1992
PHILIPS DISPLAY COMPONENTS COMPANY
SENECA FALLS, NEW YORK

WELL	SPECIFIC CONDUCTANCE (umhos/cm)	pH (standard units)	TOTAL ORGANIC CARBON (mg/L)	TOTAL ORGANIC HALOGENS (mg/L)
MW-1	850	6.97	14.9	0.060
MW-8 (1)	3300	7.23	1.60	0.296
MW-12	4600	7.31	2.95	0.093
MW-13	1750	7.62	7.68	<0.050

NOTES:

The in-situ measurements were taken on 11/6/92.
(1) Deep well.

ATTACHMENT A

SAMPLING ROUND SUMMARY

SUMMARY OF ANALYTICAL RESULTS
PHILIPS DISPLAY

LOCATION		WELL MW-1	WELL MW-8	WELL MW-12	WELL MW-13	TRIP BLANK
DATE		11/06/92	11/06/92	11/06/92	11/06/92	11/06/92
PARAMETER	UNITS					
1,1,1-Trichloroethane	mg/L	0.0689	0.0254	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	mg/L	0.0105	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloropropane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
2-Butanone	mg/L	<0.01	<0.01	<0.01	<0.01	0.0164
2-Hexanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
4-Methyl-2-pentanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Acetone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Benzene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Bromodichloromethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Bromoform	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Bromomethane	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Cadmium	mg/L	<0.005	<0.005	<0.025	<0.005	NA
Calcium	mg/L	645	575	623	154	NA
Carbon Disulfide	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Carbon Tetrachloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Chloride	mg/L	9.12	1360	993	19.3	NA
Chlorobenzene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroethane	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroform	mg/L	<0.005	<0.005	<0.005	<0.005	0.0134
Chloromethane	mg/L	<0.01	<0.01	<0.01	0.139	0.0112
Chromium	mg/L	0.0207	<0.01	<0.05	0.0128	NA
cis-1,3-Dichloropropene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Dibromochloromethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Ethyl Benzene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Field Conductivity	umbos/cm	850	3300	4600	1750	NA
Field pH	SU	6.97	7.23	7.31	7.62	NA
Fluoride	mg/L	0.242	1.06	0.526	0.779	NA
Lead	mg/L	0.0047	<0.003	0.0226	0.0063	NA
Magnesium	mg/L	115	145	190	72.6	NA
Manganese	mg/L	0.361	0.463	1.23	0.187	NA
Methylene Chloride	mg/L	0.00612	0.0132	0.00929	0.00745	0.00589
Nickel	mg/L	<0.04	<0.04	<0.2	<0.04	NA
Sodium	mg/L	37.7	1370	517	23.1	NA
Styrene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Sulfate	mg/L	140	2220	2020	1600	NA
Tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Total Organic Carbon	mg/L	14.9	1.6	2.95	7.68	NA
Total Organic Halogens	mg/L	0.06	0.296	0.093	<0.0500	NA
trans-1,2-Dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
trans-1,3-Dichloropropene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Acetate	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Vinyl Chloride	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.0346	<0.02	0.181	<0.02	NA

NA indicates not analyzed.