Report

3729.009

Plating Facility Hydrogeologic Assessment

Amphenol Corporation Sidney, New York

March 1989





O'BRIEN & GERE

March 2, 1989

Mr. Henry Mitchell Manager of Facilities Engineering Amphenol Corporation 40-60 Delaware Avenue Sidney, New York 13838-1395

Re: Plating Facility

Hydrogeologic Assessment

File: 3729.009.140

Dear Mr. Mitchell:

This letter report, presents the results of our Hydrogeologic Assessment conducted in and around the plating building at the Amphenol Corporation, Sidney, New York facility. The report details the methods employed in the assessment and data results and interpretations, in accordance with our proposed scope of services dated December 7, 1988.

Background

The Amphenol Corporation located in Sidney, New York is engaged in the production of electrical connector parts utilized in a variety of commercial and military applications. The production process involves the electroplating of a variety of elemental metals. Electroplating is performed in the plating building facility shown on Figure 1. Waste water from the plating process, which contains dissolved metals, cyanides and acidic materials are diverted via separate polypropylene lined concrete floor trenches to the on-site waste water facility (Figure 1). Leakage through cracks in the polypropylene liners in these trenches has resulted in the degradation of the concrete and leakage of waste water into the subgrade soils beneath the plating building. As the building is supported by pressure injected concrete footings (Figure 1), concerns were raised for both ground water quality issues and potential structural effects on the footings in the presence of the low pH waste water.

In order to address the concerns, the Amphenol Corporation retained O'Brien & Gere Engineers, Inc. to perform a hydrogeologic investigation to evaluate impacts, if any, to the ground water system beneath and around the plating building.

Objective and Scope

The primary objective of this investigation was to define the pH and specific conductivity of the ground water at various locations directly beneath, adjacent to, and around the perimeter of the plating building. Additionally, shallow ground water flow conditions and inorganic ground water chemistry were evaluated.

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To accomplish these objectives, the following field investigations were completed:

- 1. Installation of seven shallow ground water monitoring wells adjacent and exterior to the plating building.
- Installation of six shallow ground water monitoring wells within the plating building.
- Collection of ground water elevations from the newly installed wells.
- 4. Collection of two rounds of ground water samples for laboratory analyses of selected indicator parameters, including pH, specific conductivity, and total metals.

This report presents data collected during the study and provides an assessment of localized hydrogeologic and ground water quality conditions around the plating building.

Ground Water Monitoring Well Installation

A total of thirteen (13) shallow ground water monitoring wells were installed on the site. Their locations are illustrated on Figure 1. Monitoring wells MW-1, MW-2, MW-3 and MW-4 were constructed of 2-inch I.D. PVC riser pipe and fitted with 10-foot sections of 0.020 inch slotted PVC well screen. These wells were installed using hollow-stem auger methods. Due to accessibility limitation, all remaining wells were constructed of 1½ inch PVC pipe, fitted with 10-foot sections of 0.020 inch PVC slotted well screen. These wells were installed by advancing a dual-cone roller bit and 3-inch casing to the desired installation depth. Due to concurrent remedial construction in the vicinity of MW-10, this well was not installed. Well construction details for all the newly installed wells are summarized in Table 1, well design specifics are presented in Attachment A.

Subsequent to installation, the ground water monitoring wells were developed using a stainless steel bailer until the evacuated water became relatively clear of suspended fine-grained sediments. An instrument survey was also performed to locate the completed wells and determine their respective elevations. PVC well casing elevations and flush-mounted protective casing elevations were surveyed to 0.01 foot and tied into a USGS benchmark elevation station located approximately 600 feet west of the site. Well elevation data are presented in Table 1.

Ground Water Sampling

Ground water samples were collected from the thirteen (13) newly installed wells on 1/19/89 and 2/11/89. Prior to sampling, ground water elevations were measured in each well. An additional round of ground water elevations were collected on 2/20/89. Prior to sampling, a minimum of three well volumes of water was evacuated from each well. Ground water samples were collected using a stainless steel bailer attached to an appropriate length of polypropylene rope. Subsequent to sampling, the bailer was decontaminated by washing with Alconox and water followed by a distilled water rinse. A new clean length of polypropylene rope was used for each well sampled.

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Appropriate chain of custody procedures and methods of sample preservation were maintained from time of collection to time of delivery to the laboratory. The ground water samples were analyzed by OBG Laboratories in Syracuse, New York. Submitted samples were analyzed for total metals (filtered in the field) as per EPA Method Series 200, cyanide using EPA Method 335.2 and pH and specific conductivity. Laboratory data results including QA/QC field duplicates, equipment blanks, and chain of custody forms are presented in Attachment B.

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Site Geology/Hydrogeology

The Amphenol Corporation in Sidney, New York is located within the Susquehanna River Basin, approximately 2,400 feet south of the present river channel. Unconsolidated sediments beneath the site are primarily characterized by a variety of fill materials underlain by fine grained lacustrine silts, clays, and fine sand, with some coarser interbedded fluvial sands and gravels. The depth to bedrock beneath the site is approximately 110 feet.

Shallow unconsolidated sediments identified from split spoon samples collected during well borings in MW-1, MW-2, MW-3 and MW-4 (Figure 1) are summarized in the attached boring logs (Attachment A). From the surface, a 4 to 5-foot layer of dense compacted fill was encountered. Beneath the fill layer a thin layer of dark brown to black peat, underlain by interbedded silt, fine sand and gravel was observed.

The depth to ground water below ground level ranges from approximately 9.5 to 12.5 feet. These variations are essentially the result of surface topography. Ground water elevations collected on 1/18/89, 2/08/89 and 2/22/89 are presented in Table 1. Elevation data collected on 2/22/89 has been used to produce Figure 2, a generalized shallow ground water flow map. A review of Figure 2 reveals that in general the ground water table in the vicinity of the plating building flows to the east under a relatively low hydraulic gradient of approximately 0.0006 ft./ft., varying less than two-tenths of a foot across the site. Given the shallow ground water is unconfined (water table conditions), a flow pattern consistent with local and regional surface drainage patterns would be expected. The easterly flow pattern is contrary to local drainage patterns and may be the result of pumpage from the adjacent bedrock supply well (Amphenol West Well) shown on Figure 2. Additional ground water elevation monitoring could confirm this. If shallow ground water beneath and around the plating building is within the capture zone of the supply well, off-site ground water migration would be inhibited.

Ground Water Analytical Results

Laboratory analytical data for ground water samples collected on 1/18/89 and 2/8/89 are summarized on Table 2. Specific conductivity and pH results are illustrated on Figure 3 and Figure 4, representing data analyzed from the 1/18/89 and 2/8/89 sampling events, respectively.

A review of Figure 3 indicates that at the time of the 1/18/89 sampling event, plating previous waste losses through the degraded concrete floor trenches resulted in low pH and high specific conductivity of the ground water. It is also evident

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that in areas where Amphenol maintenance personnel reported "holes" in the trenches, specifically in the vicinity of MW-8, MW-9 and MW-11, ground water affects are most noteworthy. These affects are primarily restricted to beneath the plating building. An exception is along the pipeline extending between MW-7 and MW-4 (Figure 1). The lower pH values and elevated specific conductivities measured in these wells suggest that migration of plating waste fluids has occurred along the pipeline and/or pipeline bedding materials.

A review of the total metal values presented in Table 2 indicates the presence of elevated concentrations of cadmium (Cd), chromium (Cr), copper (Cu) nickel (Ni), zinc (Zn) and cyanide (Cn), which are used in the plating operations. A direct correlation can be made in the wells exhibiting low pH and high specific conductivity values, with elevated metals concentrations.

A review of the data from ground water samples collected on 2/8/89 shows noticeable changes in all the parameters measured for all thirteen (13) monitoring wells. Figure 4 illustrates the changes in specific conductivity and pH measured during the 2/8/89 sampling event. The decrease in specific conductivity and increases in pH which occurred during the interim period between sampling events have most likely resulted from remedial measures undertaken by Amphenol. These remedial measures consisted primarily of grouting and relining the concrete floor trenches, specifically in areas where degradation was detected. As a result of these remedial measures only wells MW-7 and MW-11 continue to exhibit concentrations of cyanide in excess of the NYS Class GA Ground Water Standards of 0.2 mg/l at levels of 2.2 mg/l and 0.88 mg/l, respectively. MW-7 and MW-1 exceeded the NYS standard for cadmium (0.01 mg/l) which was detected at 1.9 mg/l 0.02 mg/l, respectively. MW-11 exceeded the NYS standard for copper (1.0 mg/l) and zinc (5.0 mg/l) which were detected at levels of 1.7 and 5.5 mg/l respectively.

Conclusions

Based on field observations and laboratory analyses, the following conclusions can be made:

- 1. Ground water flow in the vicinity of the plating building is to the east and apparently within the capture zone of the on-site bedrock supply well.
- Ground water samples collected from the thirteen (13) newly installed wells
 indicated the ground water quality has been affected by the infiltration
 of plating waste water, through holes in the concrete floor trenches.
- 3. Lower pH and higher specific conductivity values were detected in areas adjacent to where holes in the floor trenches were discovered and in wells located adjacent to pipelines which allow migration of waste water through more permeable piping materials.
- 4. Elevated levels of cadmium, chromium, nickel, zinc and cyanide, in excess of the NYS Class Ground Water Standard have been detected in well MW-4, MW-7, and MW-11. The distribution of these parameters indicates that migration is occurring along pipeline routes. Elevated concentrations of

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cadmium detected at MW-8 during the 1/18/89 sampling, dropped to below the detection limit during the 2/8/89 sampling event. Conversely, cadmium not previously detected was measured in MW-1 at a level of 0.02 mg/l during the 2/8/89 sampling event.

5. Remedial measures undertaken by Amphenol have resulted in the reduction of elevated parameters in all the wells monitored. Elevated constituent levels in the soil and ground water have been reduced, via mitigation of the source, soil adsorption and dilution.

Based on these conclusions, the following recommendations are made:

- 1. Ground water elevation, pH and specific conductivity measurements should be collected on a monthly basis for three months to monitor decreasing trend in these indicator parameters..
- Ground water quality samples should be collected on a quarterly basis for a period of one year and submitted for laboratory analyses of cadmium, total chromium, nickel, zinc, total cyanides, pH and specific conductivity.

Respectfully submitted,

O'BRIEN & GERE ENGINEERS, INC.

James T. Mickam, CPG

Vice President

WJG:ers/59.23

cc: W.J. Gabriel

Table 1

Amphenol Corporation

Plating Building

Well Specifications and Ground Water Data

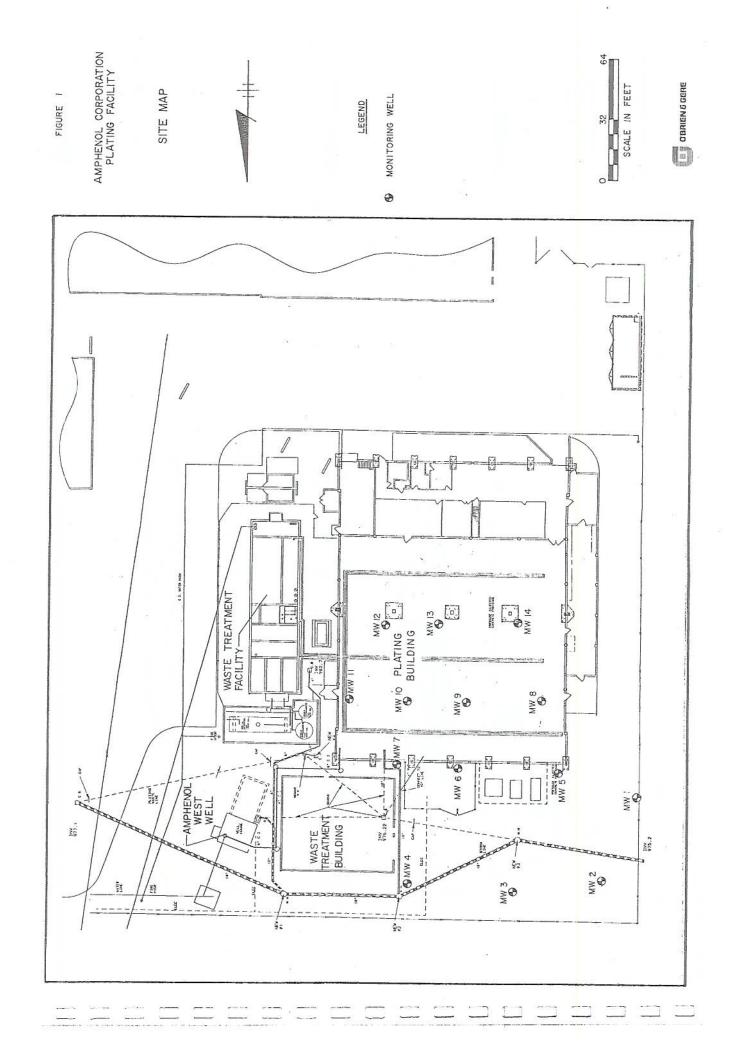
		Ground	Casing	Well	Screened -Interval	Ground Wate	r Elevation	(feet)
	Well No.	Elevation (feet)	Elevation (feet)	Depth (feet)	Elevation (feet)	1/18/89	2/8/89	2/22/89
-	MH-1	981.6	981,34	20.0	961.6 - 971.6	972.00	972.05	971.86
	MH-5	981.8	981.53	20.0	961.8 - 971.8	972, 14	972,22	971.87
	MH-3	982.9	982.78	19.7	963.2 - 973.2	972.10	971.78	971.83
	194-4	984.6	984.37	20.5	963.9 - 973.9	972.16	971. <mark>9</mark> 5	971.78
	洲-5	983, 9	983, 38	16.5	967.4 - 977.4	972.47	972. <mark>2</mark> 5	971.84
	144-6	984.5	984.27	17.0	967.5 - 977.5	972.14	971.94	971.80
	MH-7	984.2	985.30	17.5	966.7 - 976.7	972.97	969. <mark>7</mark> 3	971.78
	MH-8	984.6	984, 38	18.0	966.6 - 976.6	971.95	971.95	971.81
	MN-9	984.6	984, 41	18.0	966.6 - 976.6	971.82	971.88	971.74
	MI-11	984.7	984, 45	18.0	966.7 - 976.7	971.88	971.90	971.72
	MW-12	984.6	984, 45	17.9	965.7 - 976.7	971.83	971.86	971.71
	MH-13	984.6	984, 47	17.7	966.9 - 976.9	971.79	971.82	971.73
	M-14	984.6	984.47	17.8	966.8 - 976.8	971.82	971.85	971.77

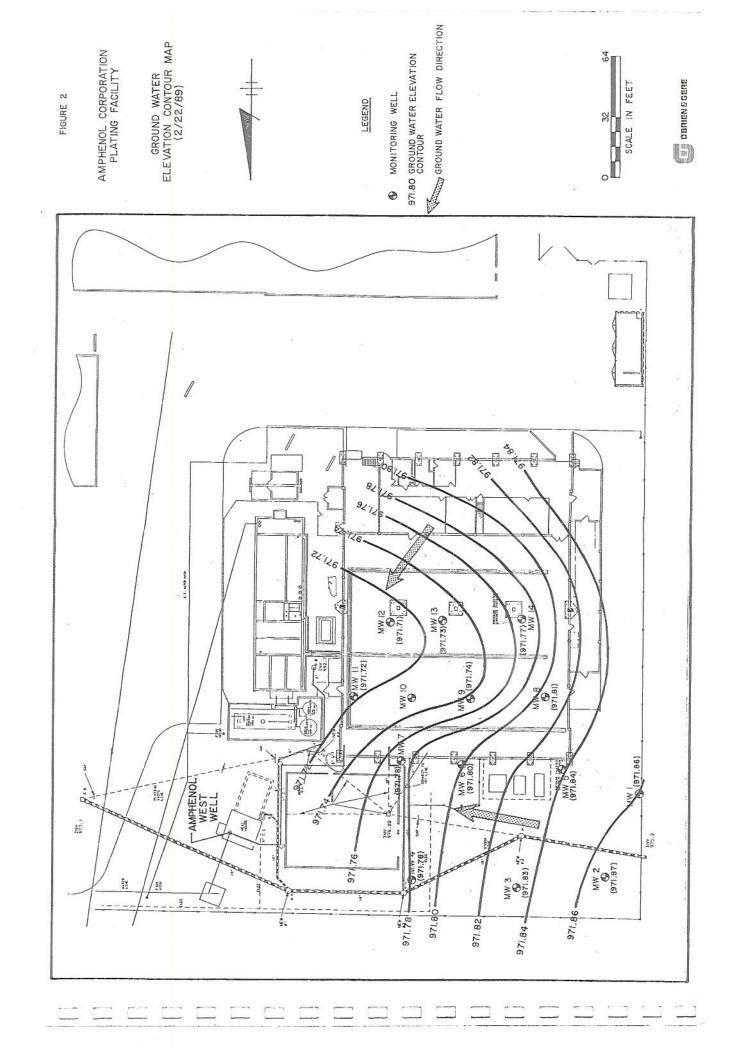
Table 2 Amphenol Corporation Plating Building

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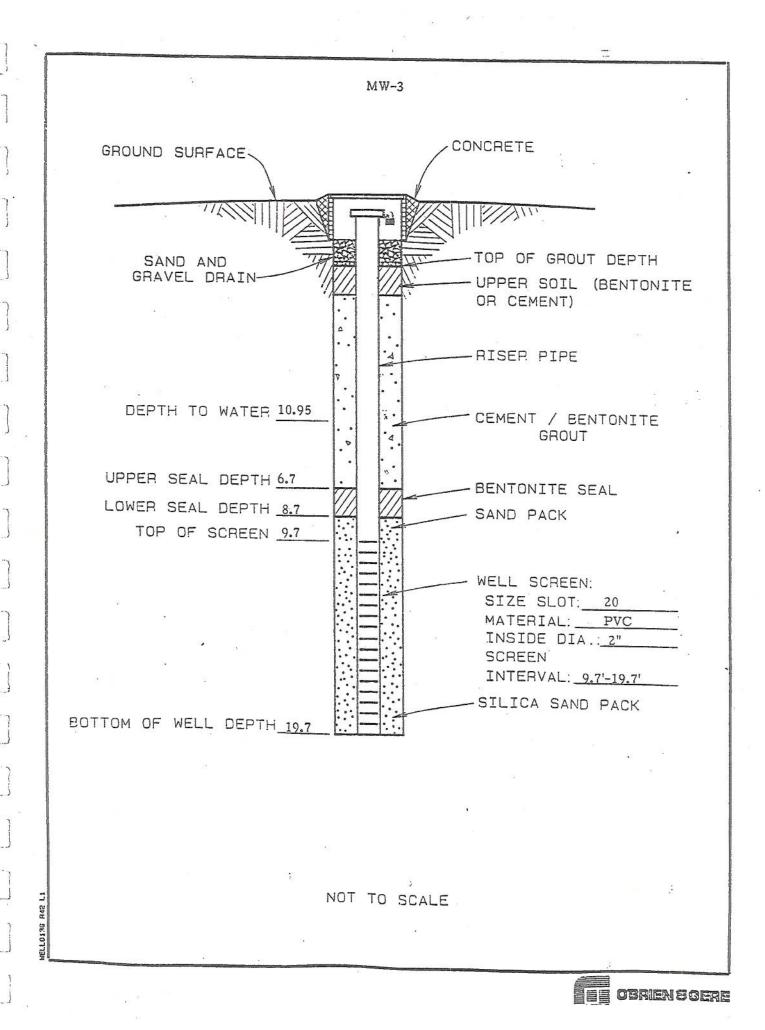
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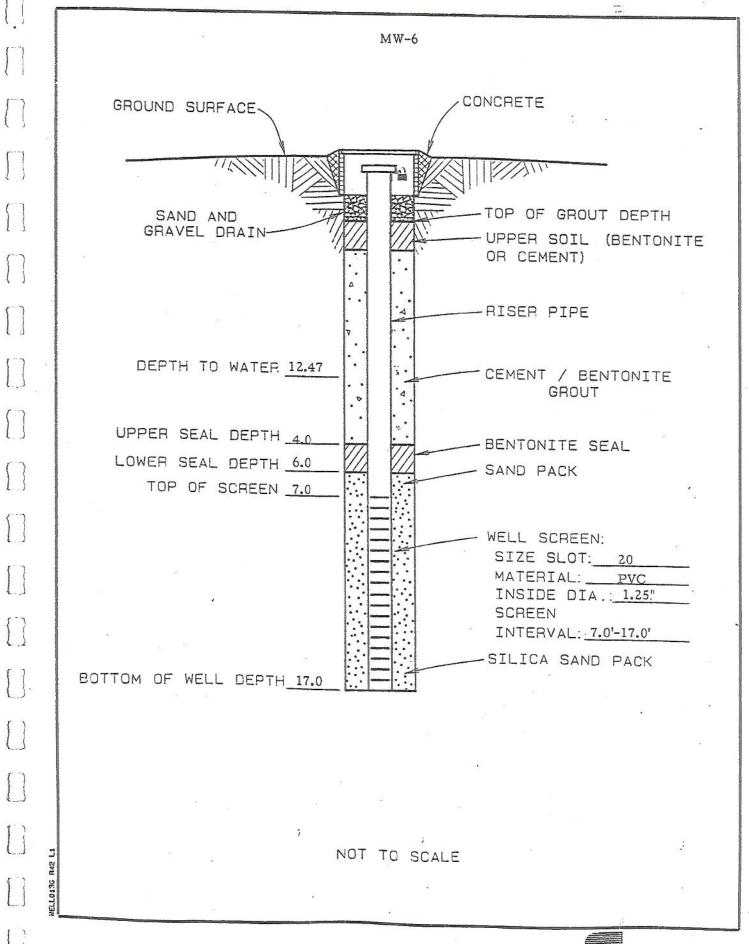
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Bentor Portla	san ite nd/	ndpack 8. pellets Bentonit	.7 ft. to 6.7 ft. e grout s	19.7 ft. to 8.7 ft. urface to	6.7 ft	2 inch PVC casing Water at 10.95 ft.						3. KJI 24/89	

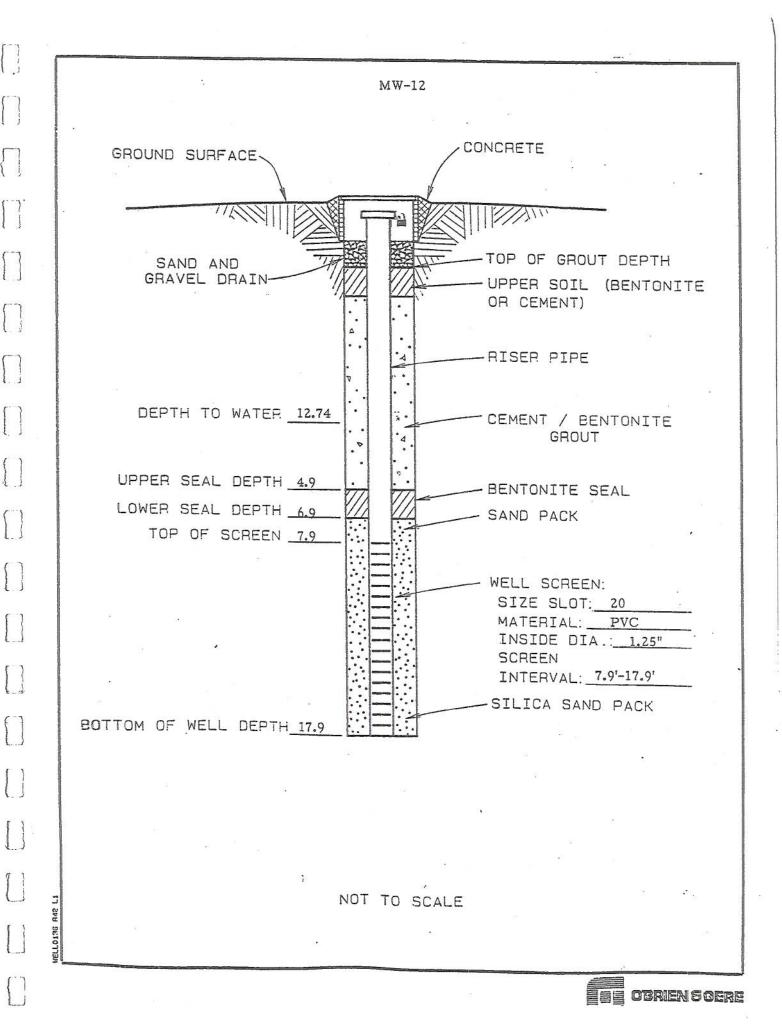
O' BRII ENGIN	ERS,	INC.				TEST BORING LOG	Repor	rt of Boring P Sheet 1	of 1	vv.=4	
		ī	Amphenol Plating B orporatio	uilding m		SAMPLER Type: 2" Split Spoon Hammer: 140 lbs. Fall: 30 inches	Ground Wate	Denth	Date Date		
Forema	1:		t-Wolff I ≘s A. Moo			Boring Location: Ground Elevation: Dates: Started: 12/22	/88		Ε	nded:1	2/22
			Sample	!		01-	Stratum		Field	Test	ing
Depth	No	Depth	Blows /6"	Penetr/ Recovry	"N"	Sample Description	Change Seneral Descript	Equipment Installed	рН	Sp Cond	HNU
0	1	0.5-1				Asphalt.					
	\vdash			-		ж.					
	H			-	-						
	+			-	-						
5	2	5-6.5				Brown, very hard, dry GRAVEL, fine-medium					
						sand.					
							7.51				
					-		9.5' 10.5'	o.B . O			
10	3	10-11.5		-	-	Person and marked COMET Annua Sing and in	10.5	0			
		10 11.3		-		Brown, saturated GRAVEL, trace fine-medium sand, little silt.	4	6 - 0			
	\vdash	-					I 12.59°	00 - 0			
								0 0.0			
						\$ #		0.0 - 0.0			
15	4	15-16.5		-	_	Brown to green, uniformed, saturated, GRAV- EL, trace fine-medium sand, silt.	, w	1.0			
				-	-	*		0 0 - 5			
	\vdash			-	-	ž s		0 - 0			
	\Box	1	•					- :0			
20	5	20-21.5				TOTAL DEPTH 20.5 FT.	20.51	00.0.0			
						Grayish to brown, saturated GRAVEL, trace fine-medium sand, silt.					
	\vdash			-		E 2					
	H			-	\vdash	2	*	Designation of the Control of the Co			
	1				+						
	1				1	12		distribution of the state of th			
	П							The second secon			
								P.L. Opinstalis			
				-	-						
0 020"		t co	10 5 5	1	F.			1			
Graded Benton	san ite	. screen dpack 9. pellets	5 ft. to	. to 20.5 20.5 ft. to 9.5 ft.	TT.	— 2 inch PVC casing . — Water at 12.59 ft.			,	BG4.K.	יעד
Portla	nd/B	entonite	grout s	urface to	7.5 ft	Water at 12.59 ft.				2/24/8	



BE OBRIEN SCERE



MW-7 CEMENT PAD _ PROTECTIVE STEEL CASING AND LOCK GROUND SURFACE INSIDE DIAMETER _ 2 IN. RISER PIPE MATERIAL: PVC SCHEDULE: __40__ INSIDE DIA .: 1.25 IN . CEMENT / BENTONITE GROUT DEPTH TOP OF SEAL 4.5 FT. - BENTONITE SEAL TOP OF SAND 6.5 FT. - SAND PACK TOP OF SCREEN 7.5 FT. SLOTTED SCREEN MATERIAL: PVC SCHEDULE: 40 INSIDE DIA .: 1.25 IN . SLOT NO .: _20___ BOT. OF SCREEN 17.5 FT. -DIA. OF BOREHOLE: 4 IN. TOP OF SCREEN 7.5 FT. N.T.S.



MW-14 CONCRETE GROUND SURFACE -TOP OF GROUT DEPTH SAND AND GRAVEL DRAIN-UPPER SOIL (BENTONITE OR CEMENT) RISER PIPE DEPTH TO WATER 12.70' CEMENT / BENTONITE GROUT UPPER SEAL DEPTH 4.8 - BENTONITE SEAL LOWER SEAL DEPTH _ 6.8 SAND PACK TOP OF SCREEN 7.8 WELL SCREEN: SIZE SLOT: 20 MATERIAL: PVC INSIDE DIA .: 1.25" SCREEN INTERVAL: 7.8'-17.8' -SILICA SAND PACK BOTTOM OF WELL DEPTH 17.8 NOT TO SCALE

ATTACHMENT B
GROUND WATER QUALITY DATA



AMPHENOL

CLIENT

Laboratory

Report

JOB NO. 3729.003.517

DATE ANALYZED DATE REC'D. 1-19-89 Sidney, NY 1-18-89 DATE COLLECTED DESCRIPTION

1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889 - 1889		Business Kr.			,			And the second second		が対	The same of the sa	Park.	, sell-fact on the Holling	Andreas Aria			:		100 100 100	•	1
		5 Shika dana dan				A CANADA						4	The posterior and the second	n factoraphedians.							
-		The state of the				W. Hannie		well-discharding Con-		The second second				ath water divides				28	84		
Field Bailer Blank	10105	(0.01	<0.005	<0.05		4. <0.05 × 6.		<0.0005	<0.05	<0.05	<0,1	<0.005	۵.	<0.01	<0.01	6.3	۵.				
MW 3 Dup	10104	(0.0)	<0.005	<0.05 <0.05	<0.01	\$ <0.05 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<0.01	<0.0005 <0.0005	<0.05	<0,05	<0.1	<0.05	۵.	0.04	<0.01	6.9	650.				
MW 7	10103	(0.01	<0.005	<0.05	3.5	0.06	0.51	<0.0005	6.8	<0.05	<0.1	<0.05	۵.	9.9	2.7	6.3	2700.	•		19	
9 MM 6	10102	<0.01	<0.005		<0.01	\$ <0.05	<0.01	<0.0005	<0.05	<0.05	8	<0.05*	۵.	0.01	0.05	7.1	1100.				
MW S	10101	(0.01 (win <0.01	<0.005	. <0.05	0.01	<0.05	<0.01	<0.0005	<0.05	<0.05	<0.1	<0.05	۵.	0.03	0.01	6.7	350.				
MW 4	10100	<0.01	<0.005	<0.05				<0.0005	5.7	<0.05		<0.05	1.	2.8	0.04	6.5	.096				
MW 3	66001	<0.01	<0.005	<0.05 <0.05	<0.01	13 <0.05 34 0.55	<0.01	<0.0005	<0.05	<0.05	<0.1	<0.05*		0.04	(0.0)	7.0	.099				
NW 2	10098	(10.01)	<0.005	<0.05	0.03	<0.05	<0.01	<0.0005	<0.05	<0.05	<0.1	<0.05	۵.	0.01	<0.01	7.0	580.		*		
MW 1	10097	10.05	<0.00	<0.05	<0.01	(a) (0.05	<0.01	<0.0005	<0.05	<0.05		<0.00	۵.	<0.01	0.03	7.4	470.				
Description	Sample #	SILVER OF THE STATE OF THE STAT	ARSENIC STANDARD STAN	UM	BYPE CONTINUE THE PROPERTY OF	A. CHROMIUM CONTRACTOR	COPPER	MERCURY	NICKEL	And have been distributed to the second		SELENIUM	THALLIUM	ZINC	CYANIDE	Hd	SPECIFIC CONDUCTANCE	 W.		* 044)	

Methodology: Federal Register - 40 CFR, Part 136, October 26, 1984

Units: mg// (ppm) unless otherwise noted

Comments: * The detection limit has been raised due to the presence of matrix interferences.

J. B. Broken Authorized:

Date: February 9, 1989

OBG Laboratones, Inc. Box 1912 / 1304 Buckley Rd. / Syracuse, NY / 13221 / (315) 457-1494



Laboratory

.517	
3729,003,517	
ON BOL	
	NY
AMPHENOL	Sidney
CLIENT	DESCRIPTION

DATE COLLECTED See Below DATE REC'D.	0. 1-23-89	-89	DATE ANALYZED	ZED		20						:# :3:
Description	MW 8 1-21-89	MW 11 1-21-89	NW 12 1-21-89	MW 13 1-21-89	MW 14 1-22-89	MW 9 1-22-89			9	\$4 A		
Sample #	.10185	10186	10187	10188	68101.	10190						<u> </u>
SILVER	1. CO. 01.	. <0.01	VO.01	(0.01)	\$0.01	(0.01		Manager of the Control of the Contro	ine Chair Str.	Particular Services		
ARSENIC BERTLIUM STATES OF THE	\$0.00 \$0.05	<0.003 0.09 <0.05 <0.05 <0.05 <0.05 <0.05	<0.005	<0.005 0.05</td <td><0.005</td> <td><0.005</td> <td></td> <td></td> <td></td> <td>t Mai</td> <td>Code 32 State 5</td> <td></td>	<0.005	<0.005				t Mai	Code 32 State 5	
CADMIUM CHROMIUM CHROMIU	4.3	21.	0.06	0.44	0.42	1.6		A S. O. O. S.	Transport		A STATE OF	· 人名罗克
MERCURY CO.005	0.04	0.0025	0.01 <0.0005	0.01	<0.01	0.03				The state of the s	distantiation.	
The state of the s		28.	<0.05	0.11	<0.05	2.0	Transfer of the second	differentials income	The same of the sa	or the feating factors	Townson of the second	1
ANTIMONY	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			Section 1		T.	
THALLIUM	4.5	9.8	<1.	0.04	(1.0.01.	(1	All to many fine against	The state of the s	The state of the s	mange de partier à	on what to be a series of	The state of the s
CYANIDE	0.09	2.7	0.04		0.01	0.16						ļ
SPECIFIC CONDUCTANCE	3200.	8300.	560.	1400.	410.	2900.	1	*				
	:			1			;	:		;	5	44
										:		
					:	-					:	

commons: " The detection limit has been raised due to the presence of matrix interferences. Mathodology; Federal Register - 40 CFR, Part 136, October 26, 1984

OBG Laboratories, Inc. Box 4942 / 1304 Buckley Rd. / Syracuse, NY / 13221 / (315) 457-1494

J. A. Bronden Dale: February 9, 1989 Authorized:

Units: mg/f (ppm) unless otherwise noted



CHAIN OF CUSTODY RECORD

MOITATE	STATION LOCATION	DATE	TIME	of the contract of the contrac	MPLE IY		SEG.	NO. OF		AMALYSIS REQUIRED
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MW-2),	1-10-01	1:30 j	-				3 /	1-10	711-15
NW3	10	11	1:45	 	V			3	1	1 1/ 1/
14W-4	1,	1,	2:30/		U			3		CY, toviDE
141W-5	11	1,	3:00	m	V			3		<u> </u>
mw-6	7 (1,	3.45	211	V			3	\rightarrow	pH, SP
ルルー	11	1.	4.15	חניו	. レ	,		.3		
DUP	11	11	2:621	7	1			3	1	
FIELD VIER BLA	y li	1,	100	m	V			3		
ام										
Relinanish	ned by: (signerary)		Recai	ved by	': (Signa	mroj				Date/Time
	ned by: Signature	•	Recai	ved by	r: Sign=	ikrej				Date/Time
Relinquisi	ned by: (Signature)		Recei	ved by	': (Signa	turo)				Dare/Time
Relinquisi	ned by: (Signower)			ved by		ie Lat	orato	ry for field		Date/Time
Dispatche	ed by: (Signature)	Date	/Time	Rece	jved i			Day,		Date/Time



CHAIN OF CUSTODY RECORD

URVEY AMPH	EXICL FACILITY	いいとこ	*. 'C.F	SAN	APLERS	S: ¡Sign	TO ISSUE	11	1/	· ·	
NOIFA12 REEMUM	STATION LOCATION	SIAO	TIME	**	MPLE IY	PE Ase	SEQ. NO.	MO. OF CONTAINERS		AMALYSI	
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4-11	7	1.	3 501	1301	٠		(.)	7	79.0	ME	14624
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	AND .	West .							آ توسر		
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./											
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e/inquishe	ed by: (Signatural		Receiv	red by	r: Signa	(10.02)				Date	/Time
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elinquishe	ed by: (Signature)		Receiv	ed by	Mobi	ie Lat	orato	ry for field		Date	/Time
ispa:ched	by: (Signoruror	Date	/Time	Rece (1)	eived i	er La	Sni	iry by:		Date (23/gd	/Time
ethod of	Shipment:	*				1				10	



Comments:

Laboratory Report

February 27, 1989

Authorized:

Date:_

CLIENT AMPHENOL CORPORATION			JOB N	o	03.517
DESCRIPTION Plating Facility Project	, Sidney, N	IY .			
DATE COLLECTED 2-8-89 DATE REC'D	2-10-89		DATE ANALYZ	ED	
40		1		1	
	-				
Description	OBG-1	P-1	OBG-20	OBG-2	OBG-3
ā					
Sample #	10907	10908	10909	10910	10911
				S	0.
SILVER	(0.01	<0.01.	. <0.01	£<0_01	₹0,01·
ARSENIC	<0.005	<0.005	<0.005	<0.005	<0.005
E. BERYLLIUM	K0-05	.¥0.05	∠⟨005	X0. 05	£ . KO . O5
CADMIUM	0.02	<0.01	<0.01	<0.01	<0.01
CHROMIUM	<0.05	₹0.05	<0.05	<0.05	<0.05
COPPER	<0.01	<0.01	<0.01	<0.01	<0.01
MERCURY	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
NICKEL	<0.05	<0.05	<0.05	<0.05	<0.05
LEAD	<0.05	<0.05	<0.05	<0.05	<0.05
ANTIMONY	<0.1	<0.1	<0.1	<0.1	<0.1
SELENIUM	K0.,005.		<0.005	<0.05*	<0.05*
THALLIUM	<1.	<1.	<1.	<1.	<1.
ZINC	0.04	0.04	0.04	0.05	0.02
PH, LABORATORY	7.5	8.0	7.7	7.7	8.0
SPECIFIC CONDUCTIVITY	-360.	280.	290.	700.	870.
CYANIDE	<0.01	<0.01	<0.01	<0.01	<0.01
		Sea of Sea			Zrain Zino
					Marian de anno e
	in the British			Color des Ser de la Color	المعتدد المتعدد
					The state of the s
Methodology: Federal Register — 40 CFR, Part 136, October *The detection limit has bee	er 26, 1984 n raised by	y a factor	Units: n	ng/((ppm) unles	s otherwise noted

ten due to the presence of matrix interferences.

OBG Laboratories, Inc. Box 4942 / 1304 Buckley Rd. / Syracuse, NY / 13221 / (315) 457-1494



Laboratory Report

Units: mg/((ppm) unless otherwise noted

February 27, 1989

Authorized: _

AMPHENOL CORPORATION 3729.003.517 JOB NO. Plating Facility Project, Sidney, NY DESCRIPTION 2-8-89 2-10-89 DATE COLLECTED DATE REC'D. DATE ANALYZED . Description OBG-4 OBG-5 OBG-8 OBG-9 OBG-11 Sample # I0912 I0913 I0914 I0915 I0916 STEVER <0.01 <0.01 <0.01% <0.01 <0.01 ARSENIC <0.005 <0.005 <0.005 <0.005 <0.005 BERYLLIUM <0.05 <0.05 <0.05 <0.05 <0.05 CADMIUM <0.01 <0.01 <0.01 <0.01 <0.01 CHROMIUM 0.17 <0:05 <0.05 <0.05 0.82 COPPER 0.41 <0.01 <0.01 <0.01 1.7 MERCURY <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 NICKEL 3.6 <0.05 <0.05 0.17 6.0 LEAD <0.05 <0.05 <0.05 <0.05 <0.05 ANTIMONY <0.1 <0.1 <0.1 <0.1 <0.1 SELENIUM <0.05* <0.005 <0.05= <0.005 <0.05= THALLIUM <1. <1. <1. <1. <1. ZINC 1.7 0.49 0.05 0.05 5.5 PH, LABORATORY 6.3 7.2 6.9 8.2 5.0 2700. SPECIFIC CONDUCTIVITY 1100 9.0 360. 580. CYANIDE 0.03 <0.01 <0.01 0.06 0.88

Methodology: Federal Register - 40 CFR, Part 136, October 26, 1984

Box 4942 / 1304 Buckley Rd. / Syracuse, NY / 13221 / (315) 457-1494

OBG Laboratories, Inc.

*The detection limit has been raised by a factor of ten due to the presence of matrix interferences.



Laboratory Report

Units: mg/((ppm) unless otherwise noted

Date: February 27, 1989

Authorized:

AMPHENOL CORPORATION _JOB NO. _3729.003.517 Plating Facility Project, Sidney, NY DATE COLLECTED See Below 2-10-89 DATE REC'D. DATE ANALYZED Description OBG-12 OBG-13 OBG-14 OBG-6 OBG-7 Field 2-8-89 2-8-89 2-8-89 2-9-89 2-9-89 Blank 2-8-89 Sample # 10919 I0917 I0918 I0920 I0921 10922 SILVER <0.01 <0.01 T <0.01 < <0.01 K0.01 <0.01 ARSENIC <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 BERYLLLUM <0.05 <0.05 ⟨0.05 <0.05 <0.05 **<0.05** CADMIUM <0.01 <0.01 <0.01 <0.01 1.9 <0.01 CHROMIUM <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 COPPER <0.01 <0.01 <0.01 <0.01 0.34 <0.01 MERCURY <0.0005 <0.000 <0.0005 <0.0005 <0.0005 <0.0005 NICKEL <0.05 <0.05 <0.05 <0.05 3.7 <0.05 LEAD <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 ANTIMONY <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 SELENIUM <0.005 <0.005 <0.005 <0.05= <0.05* <0.05= THALLIUM <1. <1. <1. <1. <1. <1. ZINC 0.03 0.05 0.05 0.06 2.6 <0.01 PH, LABORATORY 8.3 7.4 7.2 7.8 7.0 6.8 570, SPECIFIC CONDUCTIVITY 460. 2600. 1.9 330. 1500. CYANIDE <0.01 <0.01 <0.01 <0.01 2.2 <0.01

Methodology: Federal Register — 40 CFR, Part 136, October 26, 1984

Box 4942 / 1304 Buckley Rd. / Syracuse, NY / 13221 / (315) 457-1494

OBG Laboratories, Inc.

*The detection limit has been raised by a factor of ten due to the presence of matrix interferences.



CHAIN OF CUSTODY RECORD

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ROHAIZ	מסוגסט מסתגונ	3140	Time	ma. I Graa.	SEC.	CONTAMES *O. OS	S	eguines (Drivosi	
61	CHTSIDE FACILITY	12-8-89	ki coan	1/	1	3	1)		
2-/	Ţ i	11	10:15 AM	101	12	3	1/7	OTAL S	
3G ZO	11 •	i n	10:15 AM	V	13	3	11	MET	
362	<i>.</i>	11	11:00 AM	101	4	3		9 UNF	
\$63	/1	/1	11:30AM	IV	5	3	>	CYAVUDE CYAVUDE	
EK WK	//	1,	11:35 Am	IV	161	3	1	4	
64	l/	11	12:00 Am	10	7	3	1	pH, spc	
65	//	'1	12:30 Am	11	8	3		7	
68	INSIDE FALILITY	71	1:00 PM	11	191	3			
691	ŽI.	/1	1:30 Am	11	101	3			
6 11	11	11	2:00 PM	11	-11	3	/		
36 12	//	11	2:30 PM	1/	1/2	3	/		
inquishe	g gat (simone		Received o	Date/Time					
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36:2360	3y: (Sagranus)	Octe/	17.1	evesion L	4 mi	y sy:		Jarelline 2	



CHAIN OF CUSTODY RECORD

SURVEY AMPHENOL (FACILITY)				SAMPLERS: Signoruron ? Misone					
MOITA12 B30MUM	STATION LOCATION	31A0	TIME	We	MPLE IYP	€ Aer	\$EQ. NO.	NO. OF CONTAINERS	AMALYSIS
SBG 13	INSIDE FACILITY	2-8-89	3:con	1 -	V		13	3	7-1-16
286 14	17	Ĭι	4:50+	7	1		14	3	1121,46
186 6	CHTS'IDE FACILITY	29-89	1:45	f/r	V		15	3	\ ' .
086 7	OUTSIDE FACILITY	2-9-89	L2:55	DM	V		16	3	CHAVIDE
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				ved by sis: ;sig	Date/Time				
Dispatche	ed by: (Signowro	Date	/lime	Rece	nived io	er Lai	barata	i +4 suà pà:	Date/Time 7/10/89 / 0:10
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