

WYETH-AYERST LABORATORIES

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P.O. Box 8299, Philadelphia, PA 19101-8299 • (610) 688-4400

Division of American Home Products Corporation

April 26, 2001

Mr. Paul Patel
Environmental Engineer
New York Department of Environmental Conservation
Division of Solid and Hazardous Materials
50 Wolf Road
Albany, NY 12233-7252

Subject: **Draft Three Year CMS
Groundwater Sampling Plan
Wyeth-Ayerst Pharmaceuticals
Pearl River, NY**

**RECEIVED
NYSDEC**

MAY - 2 2001

**BUREAU OF RADIATION &
HAZARDOUS SITE MANAGEMENT
DIVISION OF SOLID &
HAZARDOUS MATERIALS**

Dear Mr. Patel:

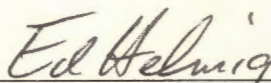
Enclosed are three copies of subject Plan. This Plan has been prepared as per discussions with you, Mr. Kaminski and Mr. And Mr. Gronwald during our October 13, 2000 meeting in Albany and during subsequent telephone conversations.

The draft **Three Year CMS Groundwater Monitoring Plan** has been designed to address the following issues discussed during our 10/13/00 meeting:

- The need for time series data verifying that natural attenuation of contaminants is on-going and that levels are continuing to decrease such that all NYSDEC groundwater standards are, or will, eventually be met.
- The need to verify that active R&D Sewers are not sources that are contributing to groundwater deficiencies.
- The need to monitor VOC levels in groundwater at the southwestern boundary of the site.

Paul, I believe the enclosed Plan will satisfy these objectives; if you concur, please let us know and we will issue a Final Plan and initiate field work A.S.A.P.

Sincerely,



Ed Helmig
Principal Project Engineer

Attachment

CC: P. Alexandro L. Cordone
M. Kontaxis S. Rossello
M. Katz R. Constable

DRAFT WORKPLAN FOR:

**THREE-YEAR CMS GROUNDWATER
SAMPLING
WYETH-AYERST LABORATORIES FACILITY
PEARL-RIVER, NEW YORK**

PREPARED FOR:



PREPARED BY:

PARSONS ENGINEERING SCIENCE, INC.

290 Elwood Davis Road, Suite 312

Liverpool, New York 13088

(315) 451-9560 Fax (315) 451-9570



APRIL 2001

DRAFT Work Plan For:

**THREE-YEAR CMS GROUNDWATER SAMPLING
WYETH-AYERST LABORATORIES FACILITY
PEARL RIVER, NEW YORK**

Prepared For:

Wyeth-Ayerst Laboratories

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April 2001

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SECTION 1

INTRODUCTION

1.1 PURPOSE

The three-year groundwater monitoring program is being implemented as a corrective measures study (CMS) to evaluate any remaining groundwater impacts from the Pearl River facility in accordance to an agreement made between Wyeth-Ayerst and New York State Department of Environmental Conservation (NYSDEC) at a meeting conducted on October 11th, 2000. The purpose of this three-year groundwater monitoring plan is to monitor volatile organic compounds in shallow and deep groundwater in the southwestern portion of the Wyeth-Ayerst facility, Pearl River New York (Figure 1.1).

In 1995 and 1996, a RCRA Facilities Investigation (RFI) was conducted at the Pearl River Facility. A portion of this investigation focused on the Wastewater Treatment Plant (SWMU 34), Former Solvent Burn Pit (SWMU 62) and Landfills 1 and 2 (SWMUs 47 and 48). The results from this study indicated VOCs in groundwater adjacent to, and downgradient from these four areas (see Table 1). A Post Sewer System Rehabilitation Subsurface Investigation (PSSRSI) was also conducted to evaluate the integrity of the research and development sewers (SWMU 33) at the Pearl River facility. Groundwater results from this investigation identified low levels of acetone (62 ug/L) and chloroform (12 ug/L) above regulatory criteria at one location (GW-99-64) downgradient of Segment 2 of the research and development sewers.

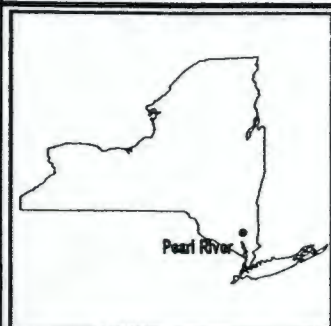
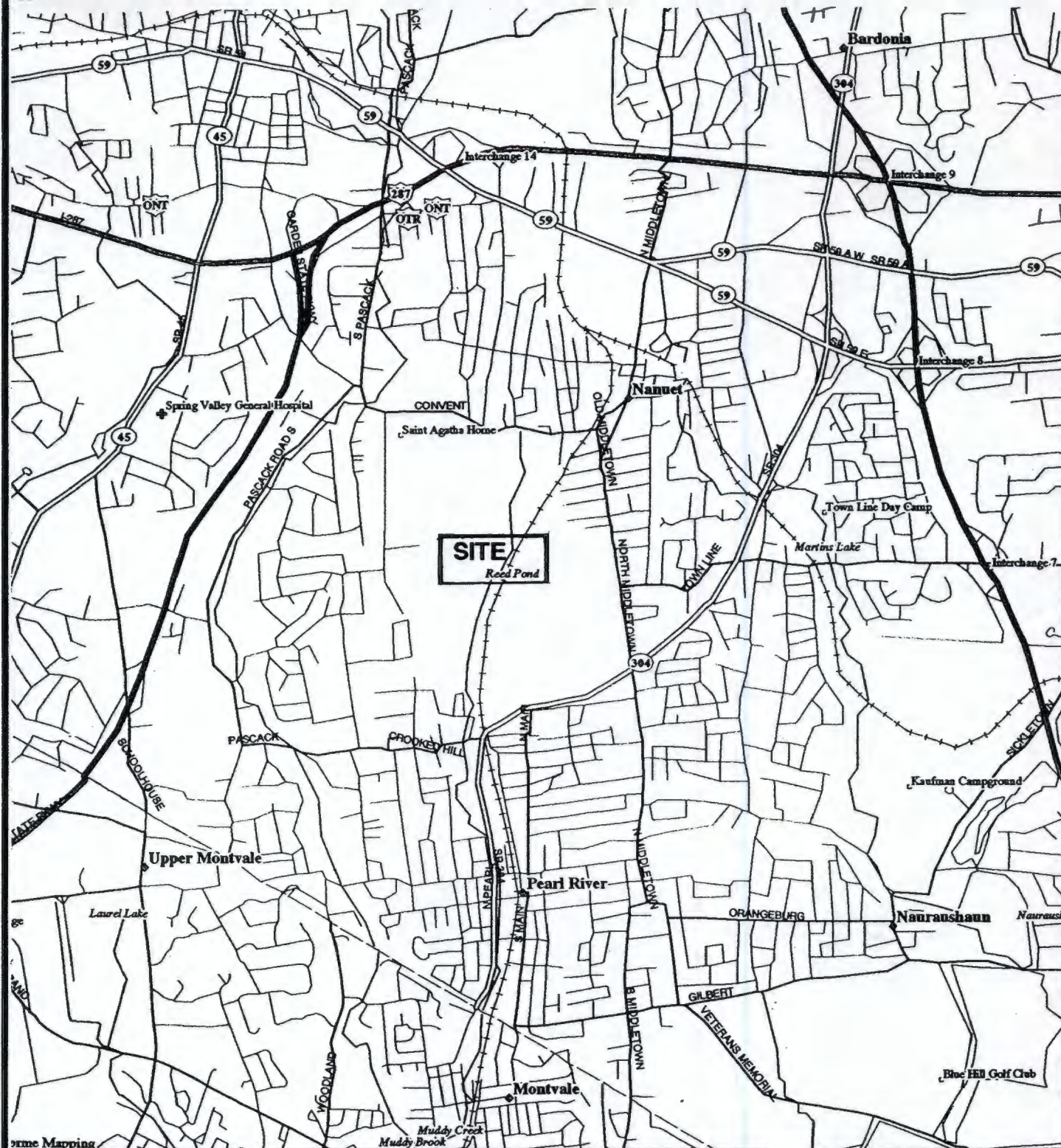
In 1998, the extent and probable impacts of VOCs in groundwater downgradient of SWMU 62 and at the southern property boundary were evaluated using the USEPA BIOSCREEN¹ Model (USEPA, 1996). Using worst-case, conservative assumptions, such as an "infinite" source volume and 8-year half life, the modeling indicated that only Vinyl Chloride would have any potential to reach the site boundary. In 1999, Parsons ES conducted a natural attenuation evaluation in the vicinity of the former solvent burn pit (SWMU 62) to verify the modeling results. Analytical data from that investigation revealed the number of VOCs had declined from 11 to 7. In addition, VOC concentrations in and around the burn pit had declined dramatically (e.g. Vinyl Chloride declined from 77 to 5 ug/L). Conclusions from this report indicated that the greatly reduced VOC levels at all sampling locations could be attributed to a limited source volume and extensive and rapid natural attenuation. Therefore, the actual potential for VOCs to reach the site boundary was considered to be very low.

¹ BIOSCREEN is an analytical solute transport model based on the Domenico (1987) equation. The model is programmed using the Microsoft[®] Excel spreadsheet, and was developed for the Air Force Center for Environmental Excellence (AFCEE) Technology Transfer Division at Brooks Air Force Base by Groundwater Services, Inc., Houston, Texas. BIOSCREEN can simulate advection, dispersion, and adsorption. The model is also designed to simulate biodegradation by both aerobic and anaerobic reactions.

An evaluation of the nearby landfill areas using the BIOSCREEN Model was not performed due to the extremely low concentrations (3 J to 7 J ug/L) of ethenes detected in groundwater samples downgradient from the landfills.

TABLE 1
GROUNDWATER ANALYTICAL RESULTS FROM 1996 RFI

COMPOUND	LANDFILLS 1 & 2		FORMER SOLVENT BURNING PIT	
	DETECTIONS (WELLS)/ SAMPLES	CONCENTRATION RANGE (ug/l)	DETECTIONS (WELLS)/ SAMPLES	CONCENTRATION RANGE (ug/l)
1,1,1-Trichloroethane	1/19	1.6 J	1/4	11 J
1,1-Dichloroethane	7/19	2.7 J to 27	3/4	10 to 80
1,1-Dichloroethene	1/19	1.75 J	1/4	5 J
1,2-Dichloroethene	2/19	1.04 J to 13.2 J	0/4	ND
1,2-Dichloroethane	1/19	1.89 J to 2.09 J	1/4	14 J
2-Hexanone	5/19	1.25 J to 23 J	0/4	ND
4-Methyl-2-Pentanone	1/19	7 J	0/4	ND
Acetone	4/19	6 J to 12 J	1/4	31J
Benzene	10/19	1.01 J to 51.2	2/4	6 to 8.9
Carbon disulfide	2/19	5.4 J to 12 J	0/4	ND
Chlorobenzene	2/19	3.5 J to 4.19 J	0/4	ND
Chloroform	4/19	1.3 J to 18.6	1/4	2 J
Methylene chloride	8/19	1.8 J to 17 J	1/4	8 J
Tetrachloroethane	0/19	ND	3/4	4.1 J to 61 J
Tetrachloroethene	2/19	2.8 J to 3.8 J	0/4	ND
Toluene	4/19	1.2 J to 19.8 J	0/4	ND
Trichloroethene	4/9	1.1 J to 37.1	2/4	1.9 J to 60 J
Vinyl chloride	0/19	ND	2/4	4.2 J to 60 J
Xylenes (total)	2/19	1.06 J to 7.2 J	0/4	ND



NEW YORK
QUADRANGLE LOCATION

LATITUDE: N41° 04' 38"
LONGITUDE: W74° 01' 27"



Scale 1:37,500 (at center)

2000 Feet

1000 Meters

FIGURE 1



WYETH-AYERST
LEDERLE LABORATORIES
401 N. MIDDLETOWN ROAD
PEARL RIVER, NEW YORK 10965

SITE LOCATION MAP

PARSONS ENGINEERING SCIENCE, INC.

DESIGN • RESEARCH • PLANNING
290 ELWOOD DAVIS ROAD • SUITE 212 • LIVERPOOL, N.Y. 13084 • (315) 491-4990
OFFICES IN PRINCIPAL CITIES

SECTION 2

SCOPE OF WORK

2.1 OBJECTIVES

The primary scope of this work involves the installation and sampling of two shallow monitoring wells, sampling eight shallow monitoring wells, and sampling one deep production well and one deep monitoring well in the southwestern section of the Wyeth-Ayerst facility, Pearl River New York (see Table 2.1 for sampling locations and rationale).

The objectives of the groundwater monitoring are to:

- 1) Outline a sentinel monitoring system near the southern boundary of the Pearl River facility,
- 2) Continue to monitor shallow and deep groundwater in the area, and
- 3) Continue to evaluate the attenuation of VOCs in groundwater.

2.2 MONITORING WELL INSTALLATION

Two shallow monitoring wells will be installed at the Pearl River facility to assess any possible impacts remaining from the research and development sewers. (Figure 2). Details of the monitoring well installations are presented in Appendix A. Installation of these wells was deemed necessary due to groundwater results from the PSSRSI in April 2000. The first well will be installed east of Waste Water Treatment Plant (WWTP) and downgradient from the eastern portion of Segment 3 of the research and development sewers (MW-01-1). The second well will be installed near the northeast corner of the intersection between Lederle Road and Harvey Way (MW-01-2). This location is downgradient from Segment 2 of the research and development sewers as well as the low levels of acetone (62 ug/L) and chloroform (12 ug/L) outlined in the groundwater results from the PSSRSI.

2.3 GROUNDWATER SAMPLING AND REPORTING FREQUENCY

Groundwater samples will be collected quarterly for the first year and analyzed for TCL VOCs. Sampling procedures and analyses are presented in Appendix A. Analytical results will be available 30 days after the data have been received. A quarterly sampling report will be submitted to NYSDEC approximately one month after the sample results are received.

At the end of each year of sampling, an annual summary report will be prepared. The summary report will contain the analytical data from the previous year (e.g., for the first year, the four rounds of sampling). In addition, the report will contain a summary of groundwater quality trends since the start of groundwater monitoring and recommendations for sampling frequency and locations for the following year. An evaluation of the natural attenuation of VOCs will also be included in the annual report based on results from the sampling during the fourth quarter of

each year. The summary report for the third year will identify the need for continued monitoring and contain appropriate recommendations.

TABLE 2
GROUNDWATER SAMPLING LOCATIONS

WELL NUMBER	ANALYSES	SAMPLING RATIONALE	DEPTH TO WATER (TOC)	DEPTH TO BOTTOM (TOC)
MW-4	VOC	Upgradient of Landfill 1 and Landfill 2	9.15 ft	30.2 ft (Grade)
MW-5	VOC	Downgradient of Landfill 1 and Landfill 2	5.10 ft	22.0 ft (Grade)
80-16	VOC	Upgradient or Background Well	21.02 ft	72.32 ft
96-13	VOC	Downgradient of Waste Water Treatment Plant, replaces 82-12	16.69 ft	32.2 ft
96-14	VOC	Downgradient of Waste Water Treatment Plant, replaces 82-14	15.43 ft	34.3 ft
82-15	VOC	Upgradient of Waste Water Treatment Plant/ Downgradient of R&D Sewers	39.04 ft	57.4 ft
MW-99A	VOC	Downgradient Property Boundary	2.5 ft	18.0 ft
MW-99B	VOC	Downgradient Centerline Well	2.10 ft	16.5 ft
PW-66T	VOC	Deep Production Well	~7.0 ft	400 ft (Grade)
83-2	VOC	Deep Monitoring Well at Southern Boundary	2.5 ft	501.5 ft
MW-01-1	VOC	Shallow Monitoring Well Downgradient of R&D Sewers	TBD	TBD
MW-01-2	VOC	Shallow Monitoring Well Downgradient of R&D Sewers	TBD	TBD

Note: Samples collected during the fourth quarter of the year will also be analyzed for natural attenuation parameters including: ferric and ferrous iron, nitrate, sulfate, chloride and total organic carbon (TOC).

SECTION 3

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- USEPA. 1996. *BIOSCREEN Natural Attenuation Decision Support System*. EPA/600/R-96/087. National Risk Management Research Laboratory, Office of Research and Development, USRPA, Cincinnati, Ohio.
- USEPA. 1998. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*. EPA/600/R-98/128. Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, Ohio.
- USEPA, 2000. *BIOCHLOR Natural Attenuation Decision Support System User's Manual Version 1.0*. EPA/600/R-00/008. Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, Ohio.

**APPENDIX A
FIELD SAMPLING PLAN**

A.1 MONITORING WELL INSTALLATIONS

Based on water level measurements, the monitoring well borings will be advanced with 4.25-inch diameter or larger hollow stem augers to a depth of approximately 50 feet at MW-01-1 and 20 feet at MW-01-2. Split-spoon samples will be collected continuously from the ground surface to the bottom of the boring. Split-spoon sampling will be conducted in accordance with ASTM Specification D-1586-84 for standard penetration test and split barrel sampling. After collecting each sample, the borehole will be drilled to a depth equal to the top of the next sampling interval. Soil samples retrieved from the borehole will be visually described. The descriptions will be in accordance with the Unified Soil Classification System (USCS). Soil samples will be immediately screened for the evolution of organic vapors with a photoionization detector (PID). The cuttings will be staged next to the borehole for disposal.

Monitoring wells will be constructed with 2-inch inside diameter, threaded, flush-joint, schedule 40 PVC casings and screens. Screens will be 10 feet long with 0.01-inch slot openings. Each well will have a locking j-plug on the top of the riser to prevent any contamination from entering from the surface. The annulus will be backfilled with silica sand of the appropriate size (Morie No. 0 or finer) to a minimum height of 2 feet above the top of the screen. Auger flights will be withdrawn as sand is poured in a manner that will minimize hole collapse and bridging. A bentonite seal at least 2 feet thick will be added and allowed to hydrate for at least one hour. The remainder of the annular space will be filled with cement/bentonite grout. Each well will have a cement pad and 3-foot locking well pipe or standard flush mount. After the wells have been installed, each will be developed by removing water until three consecutive pH, temperature, and conductivity readings are within 20% of each other, or turbidity is less than 50 NTUs.

Monitoring well locations were chosen after review and analysis of groundwater flow maps. Sources for these maps included the RCRA Facilities Assessment completed by Parsons ES in 1997 and groundwater flow maps by Leggette, Brashears & Graham, Inc. completed in 1988 for the American Cyanamid Company.

A.2 GROUNDWATER SAMPLING AND ANALYSES

Prior to the initial sampling event, the integrity of each of the wells to be sampled will be assessed. A detailed inspection/inventory of the existing groundwater monitoring wells will be performed to determine their usability for subsequent hydraulic and groundwater quality testing. The well inspection will entail:

- 1) Visual inspection to confirm above-grade well integrity;
- 2) Verification of well security;
- 3) Well depth measurement to verify that the well casing and screen are intact below grade and to estimate the amount of siltation within the well; and
- 4) Pumping the well to estimate yield and efficiency.

At the completion of the inspection, repairs and or replacements of critical wells will be performed. All well repairs will be completed by a licensed well drilling contractor, and will meet New York's monitoring well requirements. In the event that a critical well is irrevocably damaged, the original well will be properly abandoned and replaced by a new well.

Groundwater samples and water levels from each of the wells will be collected to outline VOC concentrations in the southwestern portion of the Pearl River facility (Table 1). The wells proposed for this monitoring plan include wells upgradient of the Landfills (MW-4), downgradient of the Landfills (MW-5, PW-66G), downgradient of the wastewater treatment plant (82-12 and 82-14), upgradient of the wastewater treatment plant and downgradient of the research and development sewers (82-15), downgradient near the southern boundary of the facility (MW-99A and 83-2), downgradient centerline well (MW-99B), downgradient of the research and development sewers (MW-01-1 and MW-01-2) and a background location (80-16). Samples from these wells are intended to assess groundwater quality in the shallow and deep zones of the aquifer in the southwestern portion of the facility.

Each well will be purged of a minimum of three times the volume of water in the casing, or until the well has gone dry twice (Table 1). Purging will be completed with a centrifugal pump, a submersible pump, or a HDPE dedicated bailer with dedicated polyethylene rope. All purge water will be contained and sent to the on-site wastewater treatment plant pending on pre-approval by the facilities manager. The pH, temperature, conductivity, and turbidity measurements will be recorded before the sample is collected. All equipment used down-hole will be dedicated to that well or decontaminated before and between uses with analconox wash and tap water rinse. All groundwater samples will be collected using dedicated HDPE bailers and dedicated polyethylene rope.

During the fourth quarter of each year, additional analyses will be conducted to assess the biodegradation parameters in groundwater. These additional analyses include ferric and ferrous iron by field Hach kit, nitrate by EPA Method 300.0, sulfate by EPA Method 300.0, chloride by EPA Method 300.0, and Total Organic Carbon by EPA 415.1.

All field activities (sample collection and well installation) will follow the health and safety protocols outlined in the "Health and Safety Plan (HASP)" (submitted to the NYSDEC, 1995).

A.3 QA/QC PROGRAM

Field duplicate and matrix spike/matrix spike duplicate (MS/MSD) samples will be collected to evaluate the reproducibility of the sampling and laboratory analysis methods. Field duplicates and MS/MSD samples will be submitted at a rate of one each for every 20 regular samples submitted, or one each per seven days, whichever was more frequent. False sample identification (ID) numbers will be used to identify field duplicates to the laboratory. The actual field duplicate ID (i.e. the sample it was a duplicate of) will be recorded in the field book. The MS/MSD samples will be labeled as such for the laboratory. The field duplicate and MS/MSD samples will be analyzed for the same list of parameters as the corresponding field samples in the sample delivery group.

Trip blanks consist of 40-milliliter (ml) aliquots of analyte-free water and empty sample bottles supplied by the laboratory. The trip blanks will be returned with the filled sample bottles

to the laboratory. The purpose of the trip blank samples is to ensure that no VOC cross-contamination occurred during transport and sample handling. The trip blanks will be analyzed for TCL VOCs only.

Sample Chain-of-Custody (COCs) logs and custody seals will be used for all sample shipments. These logs and custody seals are used to ensure that sample integrity is not compromised during shipment. Shipment particulars, such as samples submitted, analyses requested, and sampling responsibility will be recorded on the COCs. The field team will retain one copy of the COC while the laboratory received the remaining two copies for internal use.

All analyses will be conducted using NYSDEC Analytical Services Protocol (ASP) dated September 1989 with December 1991 and September 1993 revisions. All analytical work will be performed by a laboratory approved by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) for all categories of solid and hazardous waste. Chemical and physical analyses not covered by ASP procedures will be conducted using procedures specified in the Quality Assurance Project Plan (QAPP). Sample custody, laboratory procedures and other QA/QC requirements will be performed in accordance with the specifications in the QAPP.

All analytical results will undergo full data validation using USEPA functional guidelines (USEPA, 1994), other USEPA guidance documents, and the provisions of the NYSDEC ASP.

All data generated during the sampling activities will be stored and managed using Access[™] database software. Following data validation, the master database will be updated to reflect any changes as a result of data validation. These changes will include concentration changes, where appropriate, and removal, addition, and/or changes to data qualifiers. All data used in this report will be taken from the updated master database to ensure that only current, validated analytical results are used. The database will also be used to store and retrieve water level data to produce tables, hydrographs, and water level contour maps.

Contractor: <u>PARRAIT-WOLFF, INC.</u>					PARSONS ENGINEERING SCIENCE		BORING/		MW-4	
Driller: <u>GLENN LANSING</u>					DRILLING RECORD		WELL NO.			
Inspector: <u>ERICA A. FELTER</u>					PROJECT NAME <u>LEDERLE LABORATORIES, PEARL RIVER, NY</u>		Sheet <u>1</u> of <u>2</u>			
Rig Type: <u>INGERSOL-RAND 8300</u>					PROJECT NUMBER <u>728069.01000</u>		Location Description: <u>WEST OF (1&2)</u>			
GROUNDWATER OBSERVATIONS							LANDFILL, EDGE OF MAIN ACCESS			
					Weather <u>CLEAR, 68 DEG., CALM</u>		ROAD (PAVED).			
Water Level					Date/Time Start <u>8/31/95 1215</u>		LOCATION PLAN			
Date					Date/Time Finish <u>8/31/95 1530</u>		See Site Plan			
Time										
Meas. From										
PID Reading					MATERIAL IDENTIFICATION		USCS CLASSIP.		GEO LOG	
Sample I.D.										
Sample Depth										
Percent Recovery										
Blow Cts										
		0								
					0.0 to 1.5' Gray organic rich SILT and F.-C. SAND, some cobbles, dry.		OL			DUE TO UNDER-GROUND UTILITIES, 0.0 TO 4.0' BGS WAS HAND DUG.
		2			1.5 to 4.0' Composted material with possible a little ash, moist.		OL			
		4								
0.0			25	4	4.0 to 6.0' Gray SILT, some wood (black) fragments and chips, little f.-c. sand, possibly other organic materials (compost mixed with soil ?), moist.		ML			
		6		4						
0.0			25	4	6.0 to 8.0' Gray-green F.-C. SAND, little f. gravel, little silt, moist.		SW			
				10						
				16						
		8		19	8.0 to 9.0' Brown F.-C. SAND, little silt, moist.		SW			SAMPLE COLLECTED BETWEEN 8.0 AND 12.0' FOR TCL/TAL ANALYSIS.
0.0			60	16						
				12	9.0 to 11.0' Brown F.-M. SAND, little silt, moist.		SW			
		10		8						
0.0			50	9						
				11						
				11						
		12		8	11.0 to 16.5' Brown F.-C. SAND, trace f.-c. gravel, moist to wet.		SW			SAMPLE COLLECTED BETWEEN 14.0 AND 16.0' FOR CEC, TOC, AND pH ANALYSIS.
0.0			20	8						
				6						
				5	16.5 to 18.0' Red-brown F.-C. SAND, some silt, trace f.-c. gravel, moist to wet.		SM			SAMPLE COLLECTED BETWEEN 16.0 AND 20.0' FOR GRAIN SIZE ANALYSIS.
		14		7						
0.0			40	5						
				6						
				15						
		16		9	18.0 to 20.0' Red-brown silty F.-C. SAND, trace f. gravel, moist to wet.		SM			
0.0			50	5	- Note occ. thin (<0.1") zones of more silt than sand.					
				10						
				10						
		18		12						
0.0			75	20						
				22						
				22						
		20		24						

COMMENTS

SS = SPLIT SPOON

A = AUGER CUTTINGS

C = CORED

Contractor: <u>PARRATT-WOLFF, INC.</u> Driller: <u>GLENN LANSING</u> Inspector: <u>ERIC A. FELTER</u> Rig Type: <u>INGERSOL-RAND 8300</u>					PARSONS ENGINEERING SCIENCE		BORING/ WELL NO.		MW-4					
					DRILLING RECORD									
					PROJECT NAME <u>LEDERLE LABORATORIES, PEARL RIVER, NY</u>		Sheet <u>2</u> of <u>2</u>							
					PROJECT NUMBER <u>7280689.01000</u>		Location Description:							
GROUNDWATER OBSERVATIONS					Weather _____ Date/Time Start _____ Date/Time Finish _____		LOCATION PLAN See Site Plan							
Water														
Level														
Date														
Time														
Meas. From														
PID Reading	Sample I.D.	Sample Depth	Percent Recovery	Blow Cts	MATERIAL IDENTIFICATION		USCS CLASSIF.	GEO LOG	COMMENTS					
		20			20.0 to 23.5' Red-brown SILT, some f.-c. sand, trace to little clay, v. hard, moist.		ML							
0.0			100	50/0.2										
		22												
0.0			0	50/0										
		24												
0.0			<0.1	50/<0.1										
		26												
0.0			0	60/0.1	23.5 to 30.2' Red weathered bedrock, Passaic Formation. No good samples recovered, based on a few rock chips and augering.									
		28												
0.0			0	60/0.1										
		30												
0.0			10	100/0.2						END OF BORING MW-4 AT 30.2', INSTALL MONITORING WELL.				
		32												
		34												
		36												
		38												
		40												

SS = SPLIT SPOON
 A = AUGER CUTTINGS
 C = CORED

COMMENTS

Contractor: <u>PARRATT-WOLFF, INC.</u> Driller: <u>GLENN LANSING</u> Inspector: <u>ERICA A. FELTER</u> Rig Type: <u>INGERSOL-RAND 8300</u>					PARSONS ENGINEERING SCIENCE		BORING/		MW-5	
					DRILLING RECORD		WELL NO.			
					PROJECT NAME <u>LEDERLE LABORATORIES, PEARL RIVER, NY</u>		Sheet <u>1</u> of <u>2</u>			
					PROJECT NUMBER <u>728069.01000</u>		Location Description: <u>SOUTH OF</u>			
GROUNDWATER OBSERVATIONS					Weather <u>OVERCAST, LIGHT RAIN, 68 DEG., CALM</u> Date/Time Start <u>9/13/95 1343</u> Date/Time Finish <u>9/13/95 1515</u>		LANDFILL, WEST OF MW-13A/B, EAST OF FORMER SOLV. BURN PIT. LOCATION PLAN See Site Plan			
Water Level										
Date										
Time										
Meas. From										
FID Reading	Sample LD.	Sample Depth	Percent Recovery	Blow Cts	MATERIAL IDENTIFICATION		USCS CLASSIF.	GEO LOG	COMMENTS	
		0			0.0 to 3.0' Brown SILT, some f.-c. sand, trace f.-c. gravel, fill, dry.		ML			
-			75	8						
				8						
				50						
		2			3.0 to 4.0' Black cindery pavement/blacktop type fill material, dry.					
-			42	14						
				31						
				12						
		4		50/0.1	4.0 to 6.0' Brown SILT, little organics (tree branches, grass, etc.), little f.-c. sand, trace f.-c. gravel, moist.		ML		COLLECT SAMPLE BETWEEN 4.0 AND 6.0' FOR TCL/TAL ANALYSIS.	
-			70	7						
				6						
		6		6						
-			70	8	6.0 to 7.0' Trash fill of burnt material, broken glass, and plastic.					
				3						
				4						
		8		4	7.0 to 8.0' Brown SILT, little organics (tree branches, grass, etc.), moist.		ML			
-			50	1						
				2						
				2	8.0 to 11.0' Gray F.-C. SAND, some to silty, trace f.-c. gravel, wet.		SM			
		10		1						
-			10	10						
				25						
				26						
		12		20						
-			70	21	11.0 to 14.0' Brown F. SAND, little silt, moist to wet.		SW			
				24						
				25						
		14		36						
-			80	11						
				8						
				7						
		16		6	14.0 to 19.0' Brown F.-C. SAND, little silt, trace f.-c. gravel, wet.		SW			
-			80	4						
				7						
				6						
		18		7						
-			75	3						
				4						
				4	19.0 to 24.0' Brown silty F.-M. SAND, wet.		SM			
		20		6						
COMMENTS										
SS = SPLIT SPOON										
A = AUGER CUTTINGS										
C = CORED										

Contractor: <u>FARRAIT-WOLFF, INC.</u> Driller: <u>GLENN LANSING</u> Inspector: <u>ERICA FELTER</u> Rig Type: <u>INGERSOL-RAND 8300</u>					PARSONS ENGINEERING SCIENCE DRILLING RECORD		BORING/ WELL NO. MW-5	
					PROJECT NAME <u>LEDERLE LABORATORIES, PEARL RIVER, NY</u>		Sheet <u>2</u> of <u>2</u>	
					PROJECT NUMBER <u>728068/9.01000</u>		Location Description:	
GROUNDWATER OBSERVATIONS					Weather _____ Date/Time Start _____ Date/Time Finish _____		LOCATION PLAN See Site Plan	
Water Level								
Date								
Time								
Meas. From								
P.D. Reading	Sample I.D.	Sample Depth	Percent Recovery	Blow Cts	MATERIAL IDENTIFICATION		USCS CLASSIF.	GEO LOG
		20					SM	
-			50	2				
				4				
				4				
		22		6	19.0 to 24.0' Brown silty F.-M. SAND, wet. - note rusty colored staining between 22.0 and 24.0'.		SM	
-			85	2				
				4				
				4				
		24		8	24.0 to 25.7' Brown F.-C. SAND, some silt, trace f.-c. gravel, wet.		SM	
-			80	5				
				6				
				16				
		26		21	25.7 to 27.0' Red F.-C. SAND, little silt, trace f.-c. gravel, weathered conglomerate, Passaic Formation.			
-			100	62				
		28			END OF BORING MW-15 AT 22.0'. INSTALL MONITORING WELL.			
		30						
		32						
		34						
		36						
		38						
		40						

SS = SPLIT SPOON
 A = AUGER CUTTINGS
 C = CORED

COMMENTS _____

WELL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

WILTON, CT. 06897

PAGE 1 OF 1 PAGES

DESCRIPTION	TIME- RECORD (H:M:S)	DEPTH (FEET)	OWNER
Fill consisting of sand, very fine to medium, gray; silt, black, organic; glass fragments, amber; slight fill odor	10	10	Lederle Laboratories
Fill consisting of sand, very fine to medium, gray; silt, black, organic. Slight fill odor	6	16	LOCATION: Pearl River, New York
Fill consisting of sand, fine to coarse, brown; bones; some clay, yellow brown	2	18	WELL NO. 80-38B (MW-11A)
Fill consisting of sand, very fine to medium, gray; silt, black, organic	2	20	DATE COMPLETED: August 29, 1980
Fill consisting of silt, yellow brown mixed with possible ferment- ation cake		20+	DILLING COMPANY: Raymond International
			DILLING METHOD: Standard rotary (water)
			SAMPLING METHOD: wash
			SAMPLER EXAMINED BY: David Scott
			REFERENCE POINT: Grade
			ELEVATION OF R. P.: 15.78 feet
			CASING: 2 inch PVC
			SCREEN TYPE: Timco PVC
			DIAM. 2 inch SLOT NO. .020
			SETTING: 15-20 feet
			PUMPING TEST DATE:
			DURATION:
			STATIC WATER LEVEL: 7.39 feet
			PUMPING WATER LEVEL:
			YIELD:
			REMARKS:
			Stick up: 3.08 feet. Top of gravel pack is 1 foot above top of screen and is overlain by 1 foot bentonite seal.

WELL LOG

EGGETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

WILTON, CT. 06897

OWNER American Cyanamid Company

Lederle Laboratories Div.

WELL NO. 82-12

DATE 9/17/82 PAGE 1 OF 1 PAGES

LOCATION	DEPTH IN FEET		DESCRIPTION
	FROM	TO	
Pearl River	0	2	(SS): Blows: 2, 2, 5, 12, Soil consisting of
New York			sand, fine to coarse with clay, light brown;
DATE COMPLETED <u>8/30/82</u>			little gravel, fine to medium.
DILLING COMPANY <u>Kendrick Drilling</u>	2	10	(SS): Blows: 17, 20, 26, sampled interval 5 to
DILLING METHOD <u>Standard Rotary</u>			6.5 feet. Sand, medium to very coarse, with
SAMPLING METHOD <u>Split-spoon (SS)</u>			clay, reddish-brown; some gravel, fine to
SAMPLES EXAMINED BY <u>David Scott</u>			medium.
REFERENCE POINT <u>Grade</u>	10	23	(SS): Blows: 20, 27, 50/3", sampled interval 10
ELEVATION OF R.P. <u>19.25 feet</u>			to 11.25 feet. Sand, very fine to fine and
WELL CONSTRUCTION SCREEN TYPE <u>PVC</u>			clay, light brown; some gravel, fine to
DIAM. <u>2"</u> SLOT NO. <u>10</u>			medium.
SETTING <u>20'-30'</u>			(SS): Blows: 42, 46, 73, sampled interval 15 to
GRAVEL PACK SIZE <u>Fine Gravel</u>			16.5 feet.
CASING <u>2"</u>			(SS): Blows: 94, 100/4", sampled interval 20
DEVELOPMENT <u>Flushed with</u>			to 20.8 feet.
<u>clean water</u>	23	28.75	(SS): Blows: 32, 39, 41, sampled interval 25
PUMPING TEST DATE <u>9/7/82</u>			to 26.5 feet. Silty clay, reddish-brown
DURATION <u>1/2 hour</u>			(weathered bedrock surface).
STATIC WATER LEVEL <u>19.39' (TOC)</u>	28.75	30	Siltstone, reddish-brown.
PUMPING WATER LEVEL <u>top of casing (TOC)</u>			
WELL <u>Slug injection</u>			
REMARKS: <u>Stickup = 2.35'</u>			

WELL LOG

EGGETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

WILTON, CT. 06897

OWNER American Cyanamid Company

Lederle Laboratories Div.

WELL NO. 82-14

DATE 9/17/82 PAGE 1 OF 2 PAGES

LOCATION	DEPTH IN FEET		DESCRIPTION
	FROM	TO	
Pearl River	0	1	(SS): Hammer Blows: 4, 6, Topsoil.
New York	1	3	(SS): Blows: 13, 18, sampled interval 1 to 2
DATE COMPLETED 9/7/82			feet. Sand, fine and silt, yellow-brown;
DRILLING COMPANY Kendrick Drilling			little clay; little gravel, fine to medium.
DRILLING METHOD Standard Rotary	3	8	(SS): Blows: 24, 17, 11, sampled interval 5 to
SAMPLING METHOD Split-Spoon (SS)			6.5 feet. Sand, fine to medium with clay,
SAMPLES EXAMINED BY David Scott			yellow-brown; some gravel, fine to medium.
REFERENCE POINT Grade	8	14	(SS): Blows: 12, 12, 13, sampled interval 10
ELEVATION OF R.P. 11.09 feet			to 11.5 feet. Sand, medium to coarse; some
WELL CONSTRUCTION SCREEN TYPE PVC			gravel, fine to medium; little clay,
DIAM 2" SLOT NO. 20			yellow-brown.
SETTING 22.45-32.35'	14	18	(SS): Blows: 32, 45, 63, sampled interval 15
GRAVEL PACK SIZE Fine Gravel			to 16.5 feet. Sand, medium, reddish-brown;
CASING 2" PVC			trace silt.
DEVELOPMENT Flushed with	18	23	(SS): Blows (300 lb Hammer): 22, 28, 29,
clean water			sampled interval 20 to 21.5 feet. Sand,
PUMPING TEST DATE 9/9/82			fine to medium; some clay, reddish-brown;
DURATION 1/2 hour			little gravel, fine.
STATIC WATER LEVEL 19.31' (TOC) top of casing	23	26	(SS): Blows (300 lb Hammer) 52, sampled interval
PUMPING WATER LEVEL (TOC)			25 to 25.5 feet. Sand, medium to coarse;
TIPOD Slug injection			little clay, light reddish-brown; little
REMARKS: Stick up = 2.77'			gravel, fine to medium.
	26	29	Silty Clay, reddish-brown.
	29	30.25	(SS): Blows: 105/3" sampled interval 30 to
			30.25 feet. Sand, very fine to fine; some

OWNER American Cyanamid Company, Lederle Laboratories Division

WELL NO. 82-14

PAGE 2 OF 2 PAGES

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WELL LOG

EGGETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

WILTON, CT. 06897

OWNER American Cyanamid Company

Lederle Laboratories Division

WELL NO. 82-15

DATE 9/17/82 PAGE 1 OF 2 PAGES

	DEPTH IN FEET		DESCRIPTION
	FROM	TO	
LOCATION <u>Pearl River,</u>	<u>0</u>	<u>2</u>	(SS): Hammer Blows: 1, 5, 9, 8. Topsoil, very
<u>New York</u>			fine sand and clay, brown; little gravel,
DATE COMPLETED <u>8/27/82</u>			fine to medium.
DRIILLING COMPANY <u>Kendrick Drilling</u>	<u>2</u>	<u>10</u>	(SS): Hammer Blows: 20, 23, 20, sampled interval
DRIILLING METHOD <u>Standard Rotary</u>			5 to 6.5 feet. Sand, fine to medium and
SAMPLING METHOD <u>Split-spoon (SS)</u>			clay, brown; trace fine to medium gravel.
SAMPLES EXAMINED BY <u>David Scott</u>	<u>10</u>	<u>25.5</u>	(SS): Blows: 73, 44, 39, sampled interval 10 to
REFERENCE POINT <u>Grade</u>			11.5 feet. Sand, very fine to fine and
ELEVATION OF R.P. <u>60.41 feet</u>			clay, light brown; little gravel, fine to
WELL CONSTRUCTION SCREEN TYPE <u>PVC</u>			medium.
DIAM <u>2"</u> SLOT NO. <u>10</u>			(SS): Blows: 35, 28, 25, sampled interval 15
SETTING <u>45'-55'</u>			to 16.5 feet.
GRAVEL PACK SIZE <u>Fine Gravel</u>			(SS): Blows: 63, 60/3", sampled interval 20 to
CASING <u>2"</u>			20.75 feet.
DEVELOPMENT <u>Flushed with</u>			(SS): Blows: 117/6", sampled interval 25 to
<u>clean water</u>			25.5 feet.
PUMPING TEST DATE <u>09/07/82</u>	<u>25.5</u>	<u>35</u>	(SS): Blows: 80, 50/2", sampled interval 30 to
DURATION <u>1/2 hour</u>			30.6 feet. Rock flour consisting of sand,
STATIC WATER LEVEL <u>39.04' (TOC)</u>			very fine to fine and clay, gray-brown;
PUMPING WATER LEVEL <u>top of casing (TOC)</u>			little fine gravel.
YIELD <u>Slug injection</u>	<u>35</u>	<u>45</u>	(SS): Blows: 68, 85, 50/3" sampled interval 35
REMARKS: <u>Very dense, clayey</u>			to 36.25 feet. Rock flour consisting of
<u>logdement till -</u>			sand, very fine to fine and clay, gray-
<u>note abbreviated</u>			brown; some fine to medium gravel.
<u>Hammer drives.</u>			
<u>Stickup = 2.40'.</u>			

American Cyanamid Company, Lederle Laboratories Division

82-15

PAGE 2 OF 2 PAGES

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C

ICATION

ATE
-1157

MAILING

PHILLIPS.

SAMPLE

MPLEO

REAME

LEVATIC

SCREEN

1998: 100.

100

17

ATA:

Pym

Contractor: <u>PARRATT-WOLFF, INC.</u> Driller: <u>GLENN LANSING</u> Inspector: <u>ERICA A. FELTER</u> Rig Type: <u>INGERSOL-RAND 8300</u>					PARSONS ENGINEERING SCIENCE DRILLING RECORD		BORING/ WELL NO.	
					PROJECT NAME <u>LEDERLE LABORATORIES, PEARL RIVER, NY</u>		Sheet <u>1</u> of <u>2</u>	
					PROJECT NUMBER <u>728069.01000</u>		Location Description: <u>UPGRADIENT</u> <u>OF FORMER SOLVENT BURN PIT.</u>	
GROUNDWATER OBSERVATIONS								
Water Level					Weather <u>OVERCAST, LIGHT RAIN, 68 DEG., CALM</u>		LOCATION PLAN	
Date					Date/Time Start <u>9/13/95 0720</u>		See Site Plan	
Time					Date/Time Finish <u>9/13/95 0950</u>			
Meas. From								
FID Reading	Sample I.D.	Sample Depth	Percent Recovery	Blow Cts	MATERIAL IDENTIFICATION	USCS CLASSIF.	GEO LOG	COMMENTS
		0						
0.0			100	4	0.0 to 0.5' Gray SILT, compost, dry.	OL		NO SAMPLES COLLECTED FROM MW-15 FOR LAB. ANALYSIS.
				50/0.3	0.5 to 1.5' Light brown SILT, little f.-c. sand, little f.-c. gravel, trace con crete pieces (fill), dry.	ML		
		2						
0.0			85	12				
				27				
				20	1.5 to 5.0' Brown SILT, some f.-c. sand, trace f.-c. gravel, moist.	ML		
		4		20				
0.0			100	14				
				23				
				27				
		6		34				
0.0			100	25				
				31				
				31	5.0 to 10.0' Gray SILT, some f.-c. sand, trace f.-c. gravel, moist.	ML		
		8		37				
0.0			100	18				
				21				
				36				
		10		34				
0.0			100	42				
				50/0.3				
		12						
0.0			100	19				
				33	10.0 to 15.5' Brown SILT, some f.-c. sand, trace f.-c. gravel, moist.	ML		
				52				
		14						
0.0			100	39				
				50/0.3				
		16						
0.0			100	47	15.5 to 17.5' Brown SILT, some f.-c. sand, moist, several stringers o' wet f.-c. sand.	ML		
				50/0.3				
		18						
0.0			100	44				
				50/0.2	17.5 to 22.0' Brown F.-C. SAND, little to some silt, wet.	SW/SM		
		20						
COMMENTS								
SS = SPLIT SPOON								
A = AUGER CUTTINGS								
C = CORED								

Contractor: <u>PARRATT-WOLFF, INC.</u> Driller: <u>GLENN LANSING</u> Inspector: <u>ERICA A. FELTER</u> Rig Type: <u>INGERSOL-RAND 8300</u>					PARSONS ENGINEERING SCIENCE		BORING/		MW-15	
					DRILLING RECORD		WELL NO.			
					PROJECT NAME <u>LEDERLE LABORATORIES, PEARL RIVER, NY</u>		Sheet <u>2</u> of <u>2</u>			
					PROJECT NUMBER <u>728068/9.01000</u>		Location Description:			
GROUNDWATER OBSERVATIONS					Weather _____ Date/Time Start _____ Date/Time Finish _____		LOCATION PLAN See Site Plan			
Water										
Level										
Date										
Time										
Meas.										
From										
FID	Sample	Sample	Percent	Flow	MATERIAL		USCS	GEO	COMMENTS	
Reading	I.D.	Depth	Recovery	Cts	IDENTIFICATION		CLASSIF.	LOG		
		20			17.5 to 22.0' Brown F.-C. SAND, little to some silt, wet.		SW/SM			
0.0			100	68						
		22								
					END OF BORING MW-15 AT 22.0', INSTALL MONITORING WELL.					
		24								
		26								
		28								
		30								
		32								
		34								
		36								
		38								
		40								

SS = SPLIT SPOON

A = AUGER CUTTINGS

C = CORED

COMMENTS

05-Feb-96

ETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD
WILTON, CT. 06897

Pearl River, New York

WELL NO. South Test Well (83-2)

DATE 06/15/83 PAGE 1 OF 4 PAGES

AGES

FROM

TO

DESCRIPTION

Approximately 20

yards northwest of

Monitor Well 81-1

June 15, 1983

Rinbrand Well

Drilling Co., Inc.

0-50' Mud Rotary

50-500' Air Rotary

Ditch/Airlift

Jeffrey Lennox

Grade

Approximately -8 feet

None

SLOT NO.

22

25

very fine to fine brown and gray gravel;

some red shale; little cobbles.

50.0' of 8-inch^{a/}

Rawhiding

25

27

Sand, very fine to coarse, gray and red shale.

Sandstone, fine to medium, red; some red shale;

little very fine to coarse mixed color

gravel.

30 hours

2.50 feet^{b/}

30

35

Shale, red; trace of red sandstone; little mixed

color cobbles.

127 feet^{b/}

35

40

Shale, red; trace of fine to medium red sand-

stone; trace of mixed color cobbles.

a/ Includes 18 inches

above grade.

40

45

Shale, red; some fine to medium red sandstone;

little mixed color cobbles.

b/ From top of casing.

45

50

Sandstone, fine to medium, red and red shale;

some mixed color cobbles.

OWNER

Mott's Island, Cold River, New York

WELL NO.

South Test Well (83-2)

PAGE 2 OF 4 PAGE

DEPTH IN FEET FROM TO		DESCRIPTION
50	56	Shale, red; trace of fine to medium red sandstone.
56	59	Sandstone, fine to medium, red; trace of red shale.
59	62	Shale, red; trace of fine to medium red sandstone.
62	70	Sandstone, fine to medium, conglomeratic, red; little red shale.
70	71	Gravel, coarse, mixed color.
71	90	Conglomerate, red; little red shale.
90	100	Conglomerate, red; trace of red shale.
100	109	Shale, red and fine to medium red sandstone.
109	110	Sandstone, fine to medium, red; some red shale; trace of fine to medium
		white sandstone.
110	120	Sandstone, fine to medium, conglomeratic, red; trace of red shale.
120	130	Sandstone, fine to medium, conglomeratic, red; trace of red shale; trace
		of fine to medium white sandstone.
130	140	Sandstone, fine to medium, conglomeratic, red; little red shale; trace
		of coarse mixed color gravel.
140	160	Conglomerate, red; trace of red shale.
160	185	Conglomerate, red and white; trace of red shale.
185	190	Sandstone, fine to medium, red; trace of red shale.
190	195	Sandstone, fine to medium, red; some red shale.
195	200	Sandstone, fine to medium, red; trace of fine to medium white sandstone
200	210	Conglomerate, red and white.
210	220	Sandstone, fine to medium, conglomeratic, red; little red shale.
220	225	Conglomerate, red and white.
225	235	Sandstone, fine to medium, conglomeratic, red; little red shale; trace
		of fine to medium white sandstone.

OWNER

Lederle Laboratories, Pearl River, New York

WELL NO.

South Test Well

(83-2)

PAGE 3 OF 4 PAGES

DEPTH IN FEET FROM TO		DESCRIPTION
235	243	Sandstone, fine to medium, conglomeratic, red; trace of red shale.
243	246	Conglomerate, red and white; trace of red shale.
246	250	Sandstone, fine to medium, red; little red shale.
250	252	Sandstone, fine to medium, red.
252	260	Sandstone, fine to medium, conglomeratic, red; little red shale; trace of fine to medium white sandstone.
260	268	Sandstone, fine to medium, red.
268	270	Sandstone, fine to medium, conglomeratic, red; trace of red shale.
270	273	Conglomerate, red and white and red shale.
273	280	Sandstone, fine to medium, conglomeratic, red and some white; trace of red shale.
280	287	Conglomerate, red and white.
287	290	Sandstone, fine to medium, slightly conglomeratic, red.
290	300	Sandstone, fine to medium, conglomeratic, red.
300	305	Conglomerate, red and white.
305	310	Sandstone, fine to medium, conglomeratic, red; some red shale.
310	325	Sandstone, fine to medium, conglomeratic, red.
325	343	Sandstone, fine to medium, slightly conglomeratic, red; little red shale; trace of fine to medium white sandstone.
343	352	Shale, red; little fine to medium conglomeratic red and white sandstone.
352	360	Sandstone, fine to medium, slightly conglomeratic, red; some red shale.
360	370	Sandstone, fine to medium, conglomeratic, red; some red shale.
370	400	Conglomerate, red and white; little red shale.
400	410	Sandstone, fine to medium, conglomeratic, red; trace of red shale.

LEONARD LUBOWITZ, 1001 10th AVENUE, NEW YORK

South Test Well

(83-2)

PAGE 4 OF 4 PAGES

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**ALL M
UNLES**

PARSONS ENGINEERING SCIENCE, INC. DRILLING RECORD					BORING/ WELL NO. MW-99A Sheet 1 of 1	
Contractor: SJB Driller: Tom Farrell Inspector: Ed Ashton Rig Type: CME-ATV					PROJECT NAME: Wyeth-Ayerst SWMU Investigation PROJECT NUMBER: 737053.01000	
GROUNDWATER OBSERVATIONS					Location Plan	
Water Level	2.5 ft				Weather: Clear and cool, mid 30's. Date/Time Start: December 14, 1999 9:30 a.m. Date/Time Finish: December 14, 1999 11:00 a.m.	
Date	1/12/00					
Time	0821					
Meas. From	TOC					
Sample Depth	Sample LD.	SPT	% Rec.	FID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC
+3						
+2						
+1						
0		6	50			
1		8			(0-5) Light to dark brown fine to medium Sand, some silt, little fine gravel, wet. (SM/SC)	
		9				
2		7				
		5	40			
3		5				
		8				
4		10				
		12	55			
5		14				
		12				
6		16			(5-15) Light brown medium Sand, some fine gravel, trace silt, wet. (SM/SC)	
		17	25			
7		16				
		17				
8		19				
		24	30			
9		15				
		19				
10		22				
		24	40			
11		23				
		20				
12		21				
		19	20			
13		18				
		24				
14		26				
15						
16					Well terminated at 15 ft.	
17						
18						

SAMPLING METHOD

SS = SPLIT SPOON

A = AUGER CUTTINGS

C = CORED

COMMENTS:

All FID breathing zone readings were 0.0 ppm.

Contractor: SJB Driller: Mike Lenigan Inspector: Ed Ashton Rig Type: CME-ATV					PARSONS ENGINEERING SCIENCE, INC. DRILLING RECORD		BORING/ Sheet 1 of 1 WELL NO. MW-99B	
					PROJECT NAME: Wyeth-Ayerst SWMU Investigation PROJECT NUMBER: 737053.01000		Location Description: Located in the swamp area north of MW-99A.	
GROUNDWATER OBSERVATIONS					Weather: Raining, mid 30's. Date/Time Start: January 11, 2000 1:05 p.m. Date/Time Finish: January 11, 2000 3:30 p.m.		Location Plan See Site Plan	
Water Level	2.10 ft.							
Date	1/12/00							
Time	0831							
Meas. From	TOC							
Sample Depth	Sample LD.	SPT	% Rec.	FID (ppm)	FIELD IDENTIFICATION OF MATERIAL		SCHEMATIC	COMMENTS
+3					(0-5) Brown to gray fine Sand, some silt, wet. (SM/SC)			
+2								
+1								
0								
1		A						
2		A						
3		A						
4		A						
5		A						
6		A						
7		A						
8		A						
9		A						
10		A						
11		A						
12		A						
13		A						
14								
15								
16								
17								
18								
					Well terminated at 13.5 ft.			

SAMPLING METHOD
 SS = SPLIT SPOON
 A = AUGER CUTTINGS
 C = CORED

COMMENTS:
 No blow counts were recorded due to the use of a tripod and casing.
 No FID readings were collected.

WELL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD
WILTON, CT. 06897

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DESCRIPTION	THICK- NESS (FEET)	DEPTH (FEET)	OWNER: Lederle Laboratories
Top soil (no sample)	2	2	
Sand, brown, fine to medium; and silt (no sample)	2	4	LOCATION: Pearl River, NY
(iv) Sand, very coarse to medium, brown; gravel, fine to medium silt	5	9	WELL No.: 80-16
(iv) Sand, very coarse to medium, brown; gravel, fine to medium; silt	5	14	DATE COMPLETED: 8/13/80
(v) Sand, medium to very coarse, brown; trace silt	6	20	DRIILLING COMPANY: Raymond International
(s) Till (?), consisting of clay, light brown; silt; gravel, fine to coarse; sand, very coarse to medium	1.5	21.5	DRIILLING METHOD: std. rotary (revert) split spoon (ss) + wash (w)
(v) Till (?), consisting of clay, light brown; silt; gravel, fine to coarse; sand, very coarse to medium	8.5	30	SAMPLES EXAMINED BY: John Naso & T. Hughes
(v) Sand, very coarse to medium, brown; trace silt	4	34	REFERENCE POINT: Grade
(v) Till, consisting of clay, brown; and sand, very fine, brown; some gravel; little silt	6	40	ELEVATION OF R. P.: 51.92 feet
Till, consisting of sand, brown, fine to medium; some clay, brown	5	45	CASING: 2 inch PVC
			SCREEN TYPE: Timco PVC
			DIAM.: 2 inch SLOT No.: .020
			SETTING: 64.3-69.3 feet
			PUMPING TEST DATE: September 24, 1980
			DURATION: 2 minutes
			STATIC WATER LEVEL: 21.02 feet
			PUMPING WATER LEVEL: 65 feet
			YIELD: 8 gallons in 90 seconds
			REMARKS: Stick up = 3.02 Top of gravel pack 1 foot above top of screen and is overlain by 1 foot bentonite seal.

WELL LOG

GETTIE, BRASHEARS & GRAHAM, INC.
CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD
WILTON, CT. 06897

OWNER American Cyanamid Company

Lederle Laboratories Div.

WELL NO. 82-16

DATE 9/17/82 PAGE 1 OF 1 PAGES

PAGE

IR,

SOME

COMPLETED

DRAWING

COMPANY

DRAWING

METHOD

DRILLING

PERFORMED BY

REFERENCE

DATE

CONSTRUCTION

SCREEN

TYPE

DIAM

SETTING

TRAVEL PACK

SIZE

CASING

DEVELOPMENT

TEST

DATE

DURATION

STATIC WATER

LEVEL

PUMPING WATER

LEVEL

YIELD

REMARKS

DEPTH IN FEET

FROM
(

TO
0.5

DESCRIPTION

Pearl River

(SS): Blows: 2, Topsoil

New York

0.5

3

(SS): Blows: 5, 3, 7, sampled interval 0.5 to

9/3/82

2 feet. Till consisting of sand, fine to

Kendrick Drilling

coarse and clay, yellow-brown; little

Standard Rotary

gravel, fine to medium.

Split-spoon (SS)

3

7.5

(SS): Blows: 13, 21, 21, sampled interval 5 to

David Scott

6.5 feet. Sand, fine to medium, light

Grade

reddish-brown; trace silt; trace gravel,

46.61 feet

fine to medium.

PVC

7.5

14

(SS): Blows: 80/4", sampled interval 10 to

2" SLOT NO. 20

10.3 feet. No recovery. Sand, fine to

9-19'

medium; some clay, reddish-brown; some

Fine Gravel

gravel, fine to medium.

2" PVC

14

19.25

(SS): Blows: 100/3", sampled interval 15 to

Flushed with

15.25 feet. No recovery.

clean water

Siltstone, reddish-brown

9/8/82

1/2 hour

11.14' (TOC)

top of casing (TOC)

Slug injection

Stick up = 2.42'

LEGGETTE, BRASHEARS & GRAHAM, INC.

72 DANBURY ROAD

WILTON, CT. 06897

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[illegible]

TABLE 3.2
GROUNDWATER ELEVATION DATA
RCRA CORRECTIVE ACTION - LEDERLE FACILITY - PEARL RIVER, NEW YORK

SWMU 34 - WASTEWATER TREATMENT PLANT

WELL NO.	MP ELEV. (PLANT DATUM)	MP ELEV. (NGVD 1929)	9/20/95		9/26/95		10/26/95		1/25/96		1/25/96		4/28-5/1/96		4/30-5/2/96		8/11/96		10/30/96	
			DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)
82-12	21.54	269.44	16.56	252.88			14.12	255.32	10.41	259.03	10.58	258.86	9.82	259.62	10.02	259.42	DEST.	-	11.56	257.88
82-14	13.65	261.55	13.42	248.13	11.62	249.93	11.68	249.87	9.08	252.47	9.08	252.47	8.07	253.48	8.13	253.42	DEST.	-	9.28	252.27
82-15	62.83	310.73	45.64	265.09	44.75	265.98	44.71	266.02	40.38	270.35	40.51	270.22	35.12	275.61	35.82	274.91	36.82	273.91	NA	-

SWMUs 47 and 48 - LANDFILLS 1 and 2

WELL NO.	MP ELEV. (PLANT DATUM)	MP ELEV. (NGVD 1929)	10/23-25/95		10/25-28/95		1/22-25/96		1/25-26/96		4/29-5/1/96		4/30-5/2/96		7/29-8/1/96	
			DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)
MW-1	15.20	263.10	6.44	256.66	6.54	256.56	4.85	258.25	4.88	258.22	3.89	259.21	3.78	259.32	5.49	257.61
MW-2	19.28	267.18	7.45	259.73	7.31	259.87	5.00	262.18	5.48	261.70	4.44	262.74	4.25	262.93	5.29	261.89
MW-3	23.85	271.75	9.12	262.63	6.91	264.84	7.80	263.95	6.98	264.77	5.55	266.20	5.43	266.32	6.98	264.77
MW-4	26.23	274.13	12.28	261.85	12.30	261.83	9.90	264.23	9.15	264.98	5.35	268.78	5.13	269.00	7.44	266.69
MW-5	6.11	254.01	6.33	247.68	6.19	247.82	5.10	248.91	5.22	248.79	4.90	249.11	4.97	249.04	5.57	248.44
MW-6	30.31	278.21	23.25	254.96	23.23	254.98	21.40	256.81	21.92	256.29	21.84	256.37	20.81	257.40	21.23	256.98
MW-7	29.98	277.88	20.28	257.60	20.44	257.44	18.20	259.68	18.84	259.04	17.20	260.68	17.45	260.43	17.35	260.53
MW-8	35.04	282.94	23.56	259.38	23.72	259.22	21.80	261.14	21.88	261.06	20.31	262.63	20.49	262.45	20.73	262.21
MW-9	31.32	279.22	17.85	261.37	18.10	261.12	15.70	263.52	15.96	263.26	14.28	264.94	14.51	264.71	15.22	264.00
MW-12	21.43	269.33	6.89	262.44	6.85	262.48	6.50	262.83	6.16	263.17	4.45	264.88	4.17	265.16	4.91	264.42
MW-13A	7.18	255.08	7.02	248.06	7.10	247.98	6.70	248.38	6.45	248.63	6.23	248.85	6.25	248.83	6.54	248.54
MW-13B	7.09	254.99	6.69	248.30	6.80	248.19	5.50	249.49	6.56	248.43	4.95	250.04	5.00	249.99	5.56	249.43
MW-14	25.85	273.75	12.70	261.05	12.60	261.15	9.85	263.90	9.67	264.08	6.16	267.59	6.03	267.72	7.78	265.97
80-35B	17.55	265.45	10.03	255.42	10.10	255.35	8.15	257.30	8.62	256.83	7.56	257.89	7.65	257.80	7.67	257.78
80-35C	18.60	266.50	11.12	255.38	11.07	255.43	9.69	256.81	9.74	256.76	8.65	257.85	8.70	257.80	8.68	257.82
80-36C	20.14	268.04	7.43	260.61	7.63	260.41	4.75	263.29	5.55	262.49	4.42	263.62	4.43	263.64	4.95	263.09
80-38B	15.90	263.80	8.54	255.26	8.49	255.31	6.50	257.30	7.13	256.67	5.72	258.08	6.06	257.74	DEST.	
83-2 (MW-15)			FLOWING		FLOWING		FLOWING		FLOWING		FLOWING		FLOWING		FLOWING	

SWMU 62 - FORMER SOLVENT BURN PIT

WELL NO.	MP ELEV. (PLANT DATUM)	MP ELEV. (NGVD 1929)	9/25/95		9/26/95		10/26/95		10/27/95		10/31/95	
			DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)	DEPTH (FT)	ELEV. (FT)
MW-15	17.54	265.44			12.08	253.36	9.45	255.99	9.47	255.97	8.51	256.93
MW-16	8.65	256.55	11.24	245.31			8.74	247.81	8.86	247.69	8.01	248.54
MW-17A	9.01	256.91	9.81	247.10			6.69	250.22	6.89	250.02	6.26	250.65
MW-17B	9.01	256.91	7.15	249.76	7.03	249.88	5.14	251.77	5.18	251.73	4.52	252.39

(1) Plant elevations are 247.9 feet below NGVD 1929.