ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES INC

ROUX

THE HUNTINGTON ATRIUM
775 PARK AVENUE
SUITE 255
HUNTINGTON, NEW YORK 11743 516 673-7200 FAX # 516 673-7216

September 17, 1992

Mr. Ezra Aviles
NYSDEC - Region 2
47-40 21st Street, 2nd Floor
Long Island City, New York 11101

Re: Off-Site Investigation
Deknatel Facility, Queens Village, New York

Dear Mr. Aviles:

On behalf of Pfizer Inc, enclosed are two additional copies of the document titled "Scope of Work - Installation and Sampling of Off-Site Monitoring Wells" for the above-referenced site. Roux Associates, Inc. and Recra Environmental, Inc. appreciated the opportunity to meet with you yesterday and present scope of work. As discussed, a letter from NYSDEC supporting the off-site investigation will be of assistance in establishing access agreements with the off-site property owners. Since Pfizer is prepared to move forward with this investigation as soon as off-site access can be obtained, your prompt attention to generating the letter we discussed would be most appreciated.

Please call if you have any questions.

Sincerely,

Andrew Baris
Senior Hydrogeologist/
Project Manager

Enclosure

cc: M. Denove, Pfizer Inc
R. Wyeth, Recra Environmental, Inc.
P. Roux, Roux Associates, Inc.

SCOPE OF WORK

INSTALLATION AND SAMPLING OF OFF-SITE MONITORING WELLS

Deknatel, Inc.
96-20 222nd Street
Queens Village, New York

ROUX Associates, Inc.
ENVIRONMENTAL CONSULTING & MANAGEMENT
775 Park Avenue • Huntington, NY 11743
Tel: (516) 673-7200 • Fax: (516) 673-7216

SCOPE OF WORK

INSTALLATION AND SAMPLING OF OFF-SITE MONITORING WELLS

Deknatel, Inc.
96-20 222nd Street
Queens Village, New York

September 14, 1992

Prepared for:

Pfizer Inc
235 East 42nd Street
New York, New York 10017

Prepared by:

ROUX ASSOCIATES, INC.
775 Park Avenue
Huntington, New York 11743

SCOPE OF WORK
INSTALLATION AND SAMPLING OF OFF-SITE MONITORING WELLS

Deknatel, Inc.
96-20 222nd Street
Queens Village, New York

1.0 INTRODUCTION

This scope of work was developed to investigate the potential migration of hexavalent chromium (Cr[VI]) in ground water west of the Deknatel, Inc. facility located at 96-20 222nd Street, Queens Village, New York (Site). As shown in Figure 1, preliminary results from the Remedial Investigation (RI) of the Site indicate that on-site ground water contains Cr(VI) at concentrations up to 0.300 milligrams per liter (mg/L) and that ground-water flow beneath the Site is toward the west. Therefore, this scope of work has been developed to determine if the Site is impacting off-site ground-water quality west of the Site.

The scope of work consists of the following tasks:

- Task 1: Installation of Monitoring Wells;
- Task 2: Ground-Water Sampling; and
- Task 3: Report Preparation.

All field work, quality assurance/quality control (QA/QC) and health and safety procedures will be in accordance with the existing Remedial Investigation/Feasibility Study Work Plan for the Site. A description of the work to be performed under each task follows.

2.0 TASK 1: INSTALLATION OF MONITORING WELLS

As shown in Figure 2, the scope of work includes installation of up to nine monitoring wells. The monitoring wells will be installed using a phased approach so that data obtained from the initial wells may be used to determine the need for and optimal placement of latter wells.

During the drilling of each monitoring well, one soil sample will be collected for laboratory analysis from a depth horizon within the proposed screened interval. Soil Eh and pH will be measured in the field immediately following sample collection. The samples will then be submitted to Recra Environmental Inc. (Recra) of Amherst, New York, and analyzed for the following parameters:

- total Cr and Cr(VI);
- total organic carbon; and
- iron.

The purpose of these analyses is to develop additional data that may be used to assess the potential migration of Cr(VI) if it is present in off-site ground water.

No soil samples will be collected from the unsaturated zone because these wells are not in suspected source areas.

The justification for the proposed off-site well locations and the description of the phased approach for the off-site investigation is provided below. The locations of off-site wells will be finalized based upon access agreements established with property owners.

Monitoring Well MW-7: This will be a water-table monitoring well in the extreme southwest portion of the Site (Figure 2). This is south of Monitoring Well MW-5, the location at which highest Cr(VI) concentrations have been detected. Therefore, Monitoring Well MW-7 will serve to define Cr(VI) concentrations in ground water along the southern Site boundary. The measuring point elevation of MW-7 will be established and water levels will be measured in all on-site wells to refine the understanding of the direction of ground-water flow beneath the Site prior to installation of the off-site wells.

Monitoring Wells MW-8, MW-8D, MW-9 and MW-9D: These four off-site monitoring wells will be installed as two well cluster pairs approximately 150 feet west of the Site (Figure 2). Each well cluster will consist of a water-table monitoring well screened from 5 feet above to 10 feet beneath the water table; and a deeper overburden well screened from 20 feet to

35 feet beneath the water table (Figure 3). The proposed monitoring well construction details for the well cluster pairs are shown in Figure 4. These wells will serve to delineate the horizontal and vertical extent of Cr(VI) in ground water downgradient of the Site.

Following installation of the five aforementioned monitoring wells their elevations will be determined, water-levels will be measured in all on-site and off-site monitoring wells, and ground-water samples will be collected from all newly installed monitoring wells (i.e. MW-7, MW-8, MW-8A, MW-9 and MW-9A). The samples will be analyzed on a priority turnaround basis for Cr(VI) by Recra. If these wells indicate that Cr(VI) is not present at concentrations exceeding the New York State standard of 50 μg/L for Class GA ground water, then no additional wells will be installed.

Monitoring Wells MW-10, MW-10A, MW-11 and MW-11A: These four off-site wells will be installed as two well cluster pairs approximately 500 feet west of the Site if analytical results from the sampling of the initial off-site wells indicates Cr(VI) is present at concentrations exceeding 50 μg/L. The water-level data obtained during the previously described sampling will be used to determine if the off-site ground-water flow direction is consistent with that previously determined for the Site. Ground-water flow maps will be constructed to ensure optimal placement of the additional wells.

It is anticipated that the well construction and screened intervals will be the same as for the initially installed off-site wells (Figures 3 and 4). However, the screened intervals will be finalized based upon review of the vertical distribution of Cr(VI) concentrations and hydraulic gradients measured in the two initial off-site well clusters.

Using the phased approach described above, and assuming that all nine monitoring wells will be necessary, approximately three weeks will be required to complete the monitoring well installation task.

3.0 TASK 2: GROUND-WATER SAMPLING

As described above, one preliminary round of ground-water sampling will be conducted during monitoring well installation. After completing the installation of the off-site monitoring wells two additional rounds of ground-water sampling will be conducted. During

the first round water levels will be measured and ground-water samples will be collected from all on-site and off-site monitoring wells. This comprehensive round of sampling will serve as one of the quarterly sampling events scheduled for the Site. The second round will be conducted on only the newly installed wells. The six pre-existing on-site wells will not be sampled during the confirmatory sampling since these wells have been sampled several times over the past year.

Each sample will be submitted to Recra and analyzed on a priority turnaround basis for total Cr, Cr(VI), and dissolved iron. In addition, samples collected from the on-site monitoring wells will be analyzed for lead per the quarterly monitoring requirement for the Site. Field measurements of Eh, pH, dissolved oxygen will be taken. All procedures will be as described in the Supplemental RI Work Plan.

The first round of samples will be collected approximately one week following the completion of well development. The second round of sampling will be approximately two weeks after the first.

4.0 TASK 3: REPORT PREPARATION

Within two weeks of receipt of the analytical results from the first round of ground-water sampling Roux Associates will submit a draft report to Pfizer which presents the findings and conclusions of the off-site investigation, and if warranted, recommendations for additional investigation. At a minimum, the report will present the following:

- characterization of the areal and vertical extent of Cr(VI) beneath and downgradient of the Site;
- characterization of ground-water flow, including any vertical flow component, in the Upper Glacial Aquifer downgradient of the Site; and
- characterization of the geochemical environment (i.e. redox conditions, sorptive capacity) downgradient of the Site and how it may affect Cr(VI) migration.

Upon receipt of comments from Pfizer on the draft, a final report will be prepared and submitted within one week.

5.0 SCHEDULE

The estimated time required for each task is discussed in the preceding sections. A summary of the project schedule is also shown in Figure 5. As shown, the project will take approximately 10 weeks to complete following receipt of permission to install the off-site monitoring wells. The only significant uncertainty in the schedule is the time required to obtain permission to drill on the off-site properties.

Respectfully Submitted
ROUX ASSOCIATES, INC.

Andrew Baris
Senior Hydrogeologist/
Project Manager

Paul H. Roux
President

FIGURES

222nd STREET

CONCRETE SIDEWALK

22.40

22.30

MW-4
22.43
ND

MAIN BUILDING

DRIVEWAY

OFFICE BUILDING

TRUCK LOADING DOCK

MW-1
22.32
ND

TB-6

TB-7

DP-2

HB-1

HB-2

TB-1

TB-3

TB-4

TB-8

TB-2

TB-5

PUMP HOUSE

LABORATORY

LONG ISLAND RAILROAD STORAGE SHED

LONG ISLAND RAILROAD MTA

MW-2
22.31
0.016

PARKING AREA

MW-3
22.22
ND

MW-6
22.34
0.054

MW-5
22.32
0.300

DP-1

DP-1A

PARKING LOT

1 20 40

EXPLANATION

0.300	CONCENTRATION OF HEXAVALENT CHROMIUM IN MILLIGRAMS PER LITER, DETECTED IN GROUND-WATER SAMPLE COLLECTED JUNE 1992
MW-3	MONITORING WELL LOCATION AND DESIGNATION
TB-2	TEST BORING LOCATION AND DESIGNATION
HB-1	HAND-AUGERED BORING LOCATION AND DESIGNATION
DP-1	DISPOSAL POINT SAMPLING LOCATION
	PROPERTY BOUNDARY
ND	HEXAVALENT CHROMIUM NOT DETECTED IN GROUND-WATER SAMPLE COLLECTED JUNE 1992
22.34	WATER-TABLE ELEVATION IN FEET ABOVE MEAN SEA LEVEL
22.40	LINES OF EQUAL WATER-TABLE ELEVATION IN FEET ABOVE MEAN SEA LEVEL, DASHED WHERE INFERRED
	INFERRED DIRECTION OF GROUND-WATER FLOW

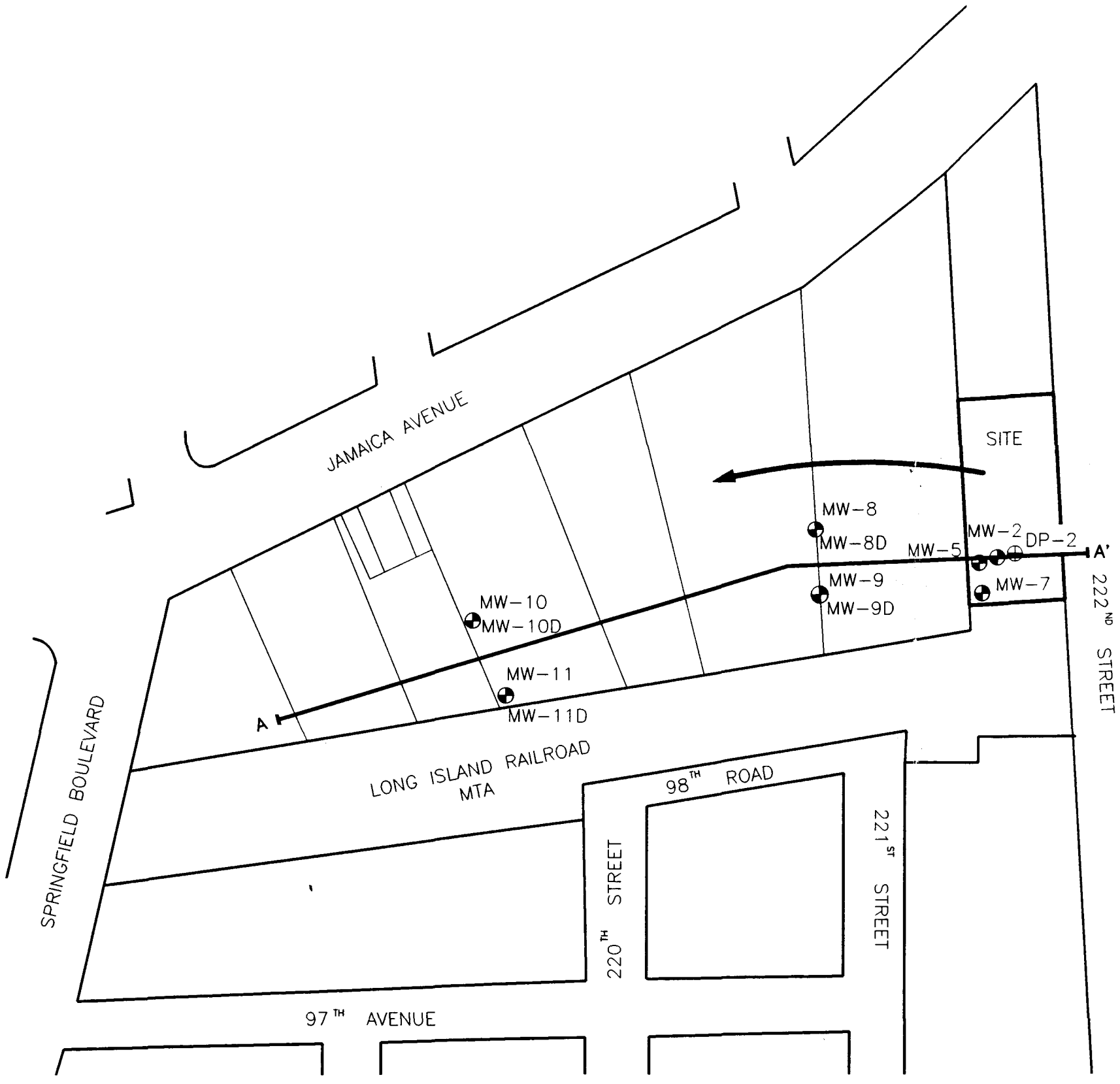
Title:

HEXAVALENT CHROMIUM CONCENTRATIONS AND GROUND-WATER FLOW JUNE 1992

Prepared For: PFIZER INC

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: D.B.	Date: 9/92	FIGURE
Prepared by: J.R.	Scale: SHOWN	1
Project Mgr: D.B.	Revision:	
File No: RE004B57		



EXPLANATION

MW-7 — LOCATION AND DESIGNATION OF PROPOSED ON-SITE WATER-TABLE MONITORING WELL

DP-2 — LOCATION AND DESIGNATION OF DISPOSAL POINT 2

MW-8 / MW-8D — LOCATION AND DESIGNATION OF PROPOSED OFF-SITE MONITORING WELL CLUSTER

INFERRED DIRECTION OF GROUND-WATER FLOW DOWNGRADIENT OF SITE

NOTES

MONITORING WELLS MW-2 AND MW-5 ARE EXISTING ON-SITE WELLS

BASE MAP ADAPTED FROM QUEENS TAX MAP VOLUME 4, MAP 12

0 125 250

Title:

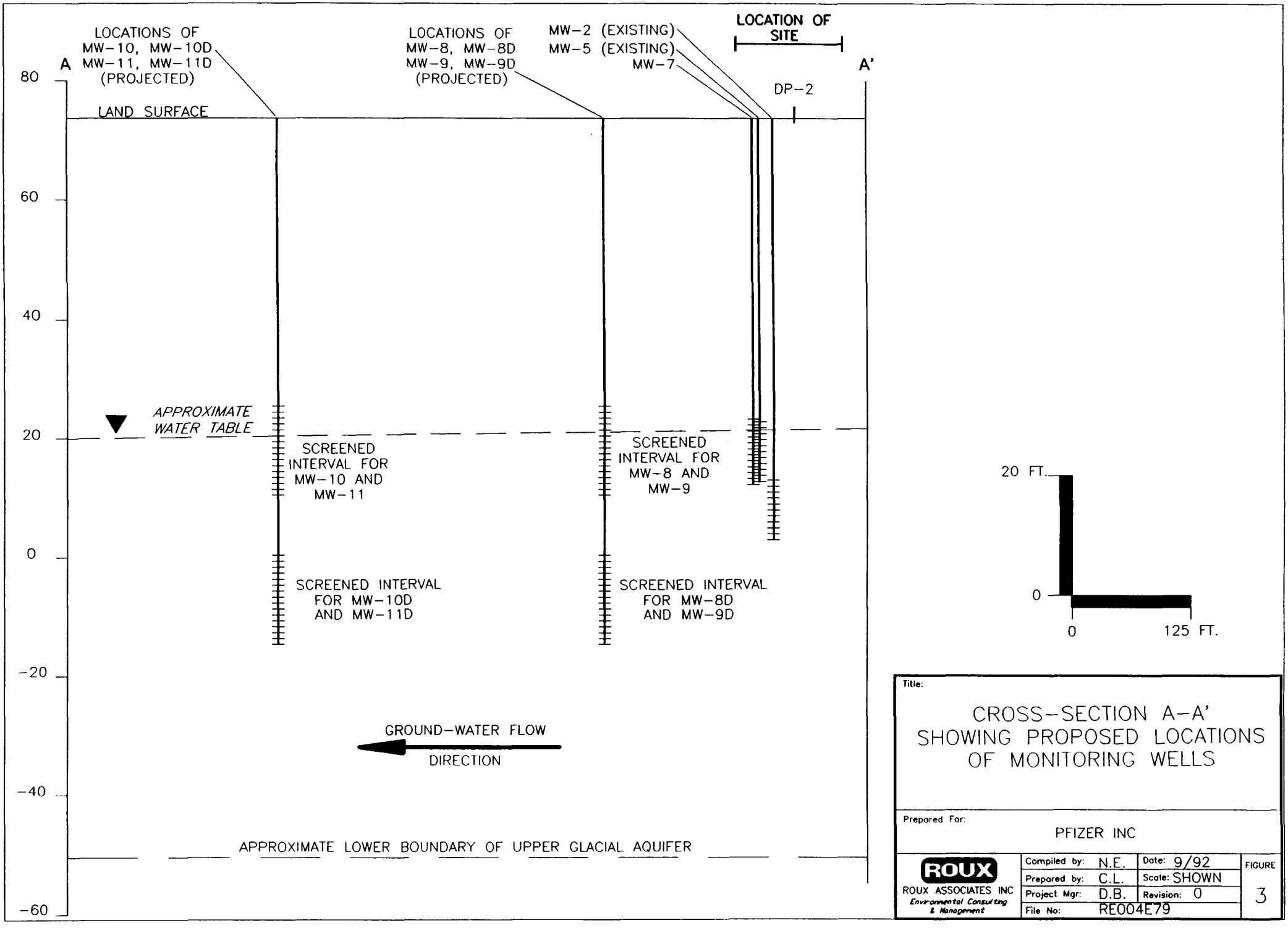
PROPOSED MONITORING WELLS FOR OFF-SITE INVESTIGATION

Prepared For:

PFIZER INC

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: D.B.	Date: 9/92	FIGURE
Prepared by: J.R.	Scale: SHOWN	2
Project Mgr: D.B.	Revision:	
File No: RE004A56		



Title:

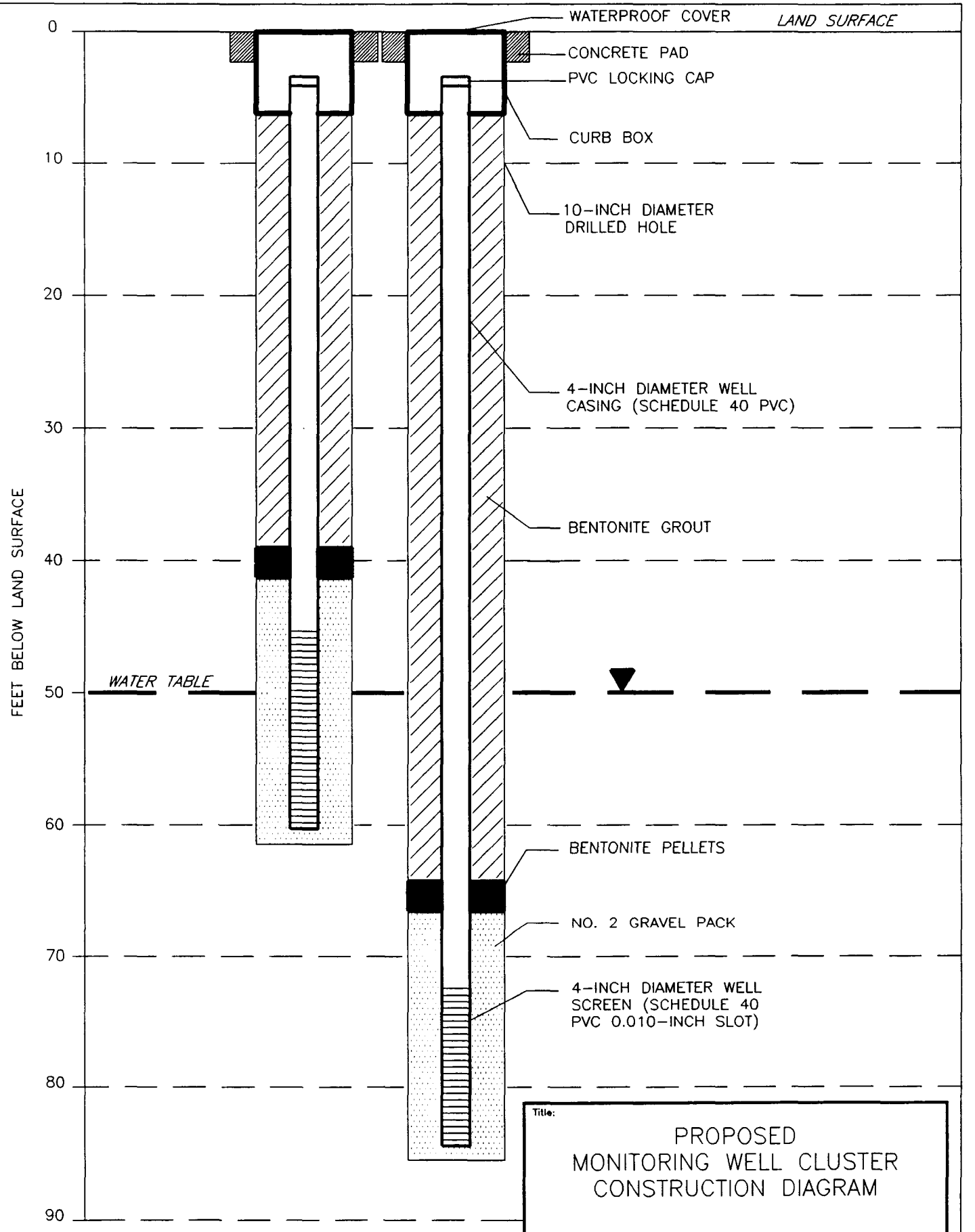
CROSS-SECTION A-A' SHOWING PROPOSED LOCATIONS OF MONITORING WELLS

Prepared For:

PFIZER INC

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: N.E.	Date: 9/92	FIGURE
Prepared by: C.L.	Scale: SHOWN	3
Project Mgr: D.B.	Revision: 0	
File No: RE004E79		



Title:

PROPOSED MONITORING WELL CLUSTER CONSTRUCTION DIAGRAM

Prepared For:

PFIZER INC

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: N.E.	Date: 9/2	FIGURE
Prepared by: C.L.	Scale: SHOWN	4
Project Mgr: D.B.	Revision: 0	
File No: RE004E78		

Figure 5. Schedule for the Installation and Sampling of Off-Site Monitoring Wells, Queens Village, New York