

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action Environmental Indicator (EI) RCRAInfo code (CA725) Current Human Exposures Under Control

Facility Name: Republic Environmental Systems (New York), Inc
Facility Address: 340 Eastern Parkway in Farmingdale, New York
Facility EPA ID #: EPA I.D. No. NYD000691949

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EIs) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

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1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

If yes - check here and continue with #2 below.

If no - re-evaluate existing data, or

If data is not available skip to #6 and enter "IN" (more information needed) status code.

Background

Facility Location

The RESNY facility was located at 340 Eastern Parkway in Farmingdale, New York (Figure 1). The facility was located in an area of industrial, commercial and properties. The facility was surrounded by a perimeter fence and consisted of two main buildings (Building 1 and Building 2) and a small maintenance building (demolished and removed from the site). The site occupied an area of approximately 100,000 square feet, of which 22,500 square feet were used for hazardous waste management operations.

The Nassau County/Suffolk County border divides the property and building 2, as illustrated on Figure 2. Hazardous waste operations at the site were conducted solely within Nassau County.

Facility Description

Republic Environmental System (RESNY) facility previously operated as a commercial hazardous waste treatment and storage facility. The facility ceased waste treatment operations in May 1993. As part of a State Order on Consent, Republic Environmental System (RESNY) agreed to close its facility.

The waste management activities formerly conducted at the facility included the treatment and storage of hazardous and nonhazardous waste. There were 24 identified solid waste management units which were used at the facility and which are Subject to NYSDEC regulations (6NYCRR 373-2).

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SWMU and AOC		
SWMU	Waste Description	Analytical Parameters
1/2	Treated Inorganic Wastewater (Holding Tanks 5 and 5a)	Metals, Cyanide
3/4	Acid/Neutral Caustic Wastewater (Treatment Tanks 6 and 7)	Metals, Cyanide
5/6	Cyanide Wastewater (Treatment Tanks 8 and 9)	Metals, Cyanide
7/8/9	Oil/Water Wastewater (Treatment Tanks 20, 21, and 22)	Metals, Cyanide, VOCs, SVOCs
10	Treated Inorganic Wastewater (Rotary Vacuum Filter)	Metals, Cyanide
11	Treated Inorganic Wastewater (Filter Press)	Metals, Cyanide
12	Solidified and Un-solidified Inorganic Sludges (Hopper Storage Area)	Metals, Cyanide
13	Flammable Organic Wastes (Container Storage Area)	Metals, Cyanide, VOCs, SVOCs
14 a,b,c,d	Organic and Inorganic, Acidic, Caustic and Neutral Nonhazardous Wastes (Building 1 Drum Storage Area)	Metals, Cyanide, VOCs, SVOCs
15/16	Organic and Inorganic, Acidic, Caustic and Neutral Nonhazardous Wastes (Building 2 Drum Storage Area)	Metals, Cyanide, VOCs, SVOCs
17	All Wastes (Trucking loading/Unloading Area)	Metals, Cyanide, VOCs, SVOCs
18	All Wastes (Pump Station)	Metals, Cyanide, VOCs, SVOCs
19	All Wastes (Drum loading/Unloading Area)	Metals, Cyanide, VOCs, SVOCs
20	Solidified and Un-solidified Inorganic Sludges (Sludge Solidification Areas, Dumpsters, Skips Storage Areas)	Metals, Cyanide, VOCs, SVOCs
21	Air Emissions (Pollution Control Equipment and Duct Works)	Metals, Cyanide
22	Solidified and Un-solidified Nonhazardous Sludges (Building 2 Sludge Solidification Area)	Metals, Cyanide, VOCs, SVOCs
23	All Wastes (Building 1 Hopper/Skip/Drum Washing Areas)	
24	Acidic, Caustic Metal-Bearing Wastes (tanks 1, 2, 3. and 4)	Metals, Cyanide
AOC		

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SWMU and AOC		
AOC 1	All Waste (Truck Parking Areas; paved and unpaved areas outside the buildings)	Metals, Cyanide, VOCs, SVOCs
AOC 2	Stormwater Run-from Building Roof (Dry Well A located approximately 10 feet east of Building 1)	Metals, Cyanide, VOCs, SVOCs
AOC 3	Stormwater Run-from Building Roof (Dry Well B located approximately 4 feet north of the Maintenance Building)	Metals, Cyanide, VOCs, SVOCs

During operation, the facility received and processed three types of wastes. These wastes included the following:

- Bulk Liquids; consisting primarily of liquids received for treatment and a lesser amount of liquids not suited for treatment at the facility which were stored and later shipped to appropriate treatment or disposal facilities. Approximately 375,000 gallons of bulk liquids were received at the facility each month until discontinuation of facility activities. Liquid wastes accepted at the facility were received either by direct pumping of wastes from containers into the process tanks, or off-loaded from bulk trucks. Maximum bulk liquids storage capacity at the facility was 100,400 gallons.
- Containerized Wastes; consisting of storage capacity of up to 288 drums of hazardous waste, primarily VOCs and 200 drums of nonhazardous wastes in the drum storage area of Building 1. Capacity for up to 12 containers of flammable waste is present in the approximate 170 ft' Flammable Storage Area.
- Contaminated Solids; consisting primarily of waste treatment solids, contaminated soils from spills or site clean-ups, and materials such as piping or ductwork from industrial plant decontamination. Solids were delivered to the site in drums or two-yd³ bins and temporarily stored in the Container Management Area in Building 2. A total of 392 drums can be stored in two containment areas of the Container Management Area.

Wastewater from this facility was discharged to Cedar Wastewater Treatment facility. There were no exceedances from RESNY and no major concerns expressed by Nassau County Department of Public Works.

All hazardous waste in containers were stored indoors. There were no underground storage tanks located at the site, and all aboveground treatment and storage areas had secondary containment.

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be “contaminated”¹ above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	YES	NO	?	Rationale/Key Contaminants
Groundwater	X			
Air (indoors) ²		X		
Surface Soil (e.g., <2 ft)	X			Metals (Lead and Chromium)
Surface Water		X		
Sediment		X		
Subsurface Soil (e.g., >2 ft)	X			Metals (Lead and Chromium)
Air (outdoors)		X		

_____ If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

 X If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

Target Population/Pathway

When the facility was in operation, there were small releases to the soil and air from the wastewater treatment system. Odor complaints (rotten eggs smell) from local residents were

¹“Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

²Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggests that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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investigated and remediated. Soils were investigated and remediated as part of the Corrective Action.

Corrective Action Program.

RESNY closed the facility under an Order on Consent. The Order on Consent required a closure work plan for the former regulated hazardous waste units and an RFI work plan for the rest of the facility.

Under the approved Facility Closure Plan, Facility closure activities included the following:

- Decontamination and removal of non-permanent equipment and structures (e.g., tanks, filters, piping ducts, etc).
- Decontamination of permanent structures (e.g., building floors, walls and ceiling, containment structures, etc.) was accomplished using high-pressure steam and detergent. When stains or permanent structures could not be removed by pressure-steaming, the surface was subjected to scarifying to remove the staining. Approximately 600 cubic yards of debris contaminated with heavy metals were removed and properly disposed of as hazardous waste.
- Soil samples were collected inside the buildings (Figure 4) by coring through the concrete at 0 - 2 foot and 2 - 4 foot depth intervals and analyzed for RCRA metals, PCBs, VOCs and SVOCs.

Under the approved RFI Work Plan, remedial activities included the following:

- Soil samples were collected from a grid network across the site at 0 -2 foot and 2 -4 foot depth intervals and analyzed for RCRA metals, PCBs, VOCs and SVOCs. As a result of findings, two areas were found to be contaminated with hazardous constituents.
- Soil removal was selected as the Corrective Measure Implementation to provide a maximum level of protection from potential hazards by removing the source of contamination, thereby eliminating the risks of adverse impact of the source on human health or the environment. 81 cubic yards of soil contaminated by semi-volatiles from the Southeastern portion of the facility and 200 cubic yards of soil contaminated by heavy metals outside of the southeast corner of the main building were removed and properly disposed of as hazardous waste.

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Residual contaminant concentrations remain above unrestricted/residential cleanup levels. Appropriate institutional controls in the form of deed notices and restrictions were placed to ensure that the site use is limited to industrial purposes and future removal actions of residual contaminated soil.

Historical groundwater data collected in January 1992 identified trichloroethene (75 micrograms per liter [ug/l]) and tetrachloroethene (24 ug/l) at upgradient well MW-4. In addition, trichloroethene was detected at 9ug/l at upgradient well MW-1. This groundwater investigation was not approved by NYSDEC. Therefore as part of closure activities, RESNY needed to characterize groundwater quality underneath the facility. To investigate the groundwater, RESNY installed two additional permanent monitoring wells and collected groundwater samples from the six onsite monitoring wells (Figure 5).

PCE, TCE and 1,2-DCE were detected in site groundwater (Figure 6) above the NYSDEC groundwater standards in May 1998. Site groundwater flow direction and the distribution of VOCs , onsite monitoring wells indicated that contaminated groundwater is migrating across the site from an upgradient, off-site source. NYSDEC requested an additional groundwater sampling event to confirm that the contamination is an off-site source.

The November 1998 sampling showed PCE and TCE above the NYSDEC standards. In both sampling rounds, VOC analytes were detected above the NYSDEC standards in wells (MW-1, MW-4 and MW-5) which are upgradient from the RESNY operation buildings (see attached groundwater elevation map-Figure 5). These findings indicate an offsite, upgradient source of VOCs. Due to the low levels of VOCs , impacted groundwater migrating across the RESNY property does not pose immediate, or imminent threat to human health or the environment.

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3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

“Contaminated” Media	Potential Human Receptors (Under Current Conditions)						
	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	NO	NO	NO	NO	---	---	NO
Air (indoors)---	NO	NO	NO	---	---	---	---
Soil (surface, e.g., <2 ft)	NO	NO	NO	NO	NO	NO	NO
Surface Water	NO	NO	---	---	NO	NO	NO
Sediment	NO	NO	---	---	NO	NO	NO
Soil (subsurface e.g., >2 ft)	---	---	---	NO	---	---	NO
Air (outdoors)---	NO	NO	NO	NO	NO	---	---

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated” as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“_---_”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- X If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- _____ If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.
- _____ If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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Rationale and Reference(s):

SEE QUESTION 2

- 4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

N/A

- 5 Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

_____ If unknown (for any potentially “unacceptable” exposure) - continue and enter

⁴ If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

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_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

N/A

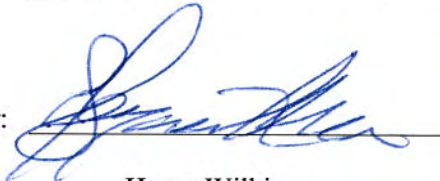
6. Check the appropriate RCRA Info status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Republic Environmental Systems (New York), Inc facility, EPA I.D. No. NYD000691949, located at 340 Eastern Parkway in Farmingdale, New York the under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

_____ **NO** - "Current Human Exposures" are NOT "Under Control."

_____ **IN** - More information is needed to make a determination.

Completed by:

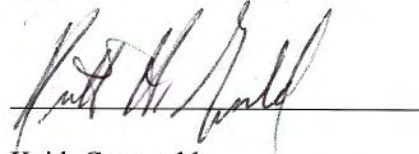


Henry Wilkie
Environmental Engineer I

Date:

9/29/2009

And




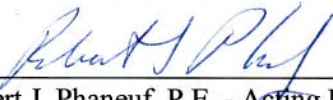
Keith Gronwald
Senior Engineering Geologist

Date:

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Supervisor:  Date: 9/30/09
Daniel Evans, P.E.
Hazardous Waste Engineering Eastern Section
Bureau of Hazardous Waste and Radiation Management
Division of Solid and Hazardous Materials

Director:  Date: 9/30/09
Robert J. Phaneuf, P.E. - Acting Director
Bureau of Hazardous Waste and Radiation Management
Division of Solid and Hazardous Materials

Locations where References may be found:

New York State Department of Environmental Conservation, Central Office
Division of Solid and Hazardous Materials
625 Broadway 9th Floor
Albany, New York 12233-7252

Contact telephone and e-mail numbers:

Henry Wilkie (518) 402-8594 e-mail: hjwilkie@gw.dec.state.ny.us
Keith Gronwald (518) 402-8594 e-mail: khgronwa@gw.dec.state.ny.us

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.



LEGEND:

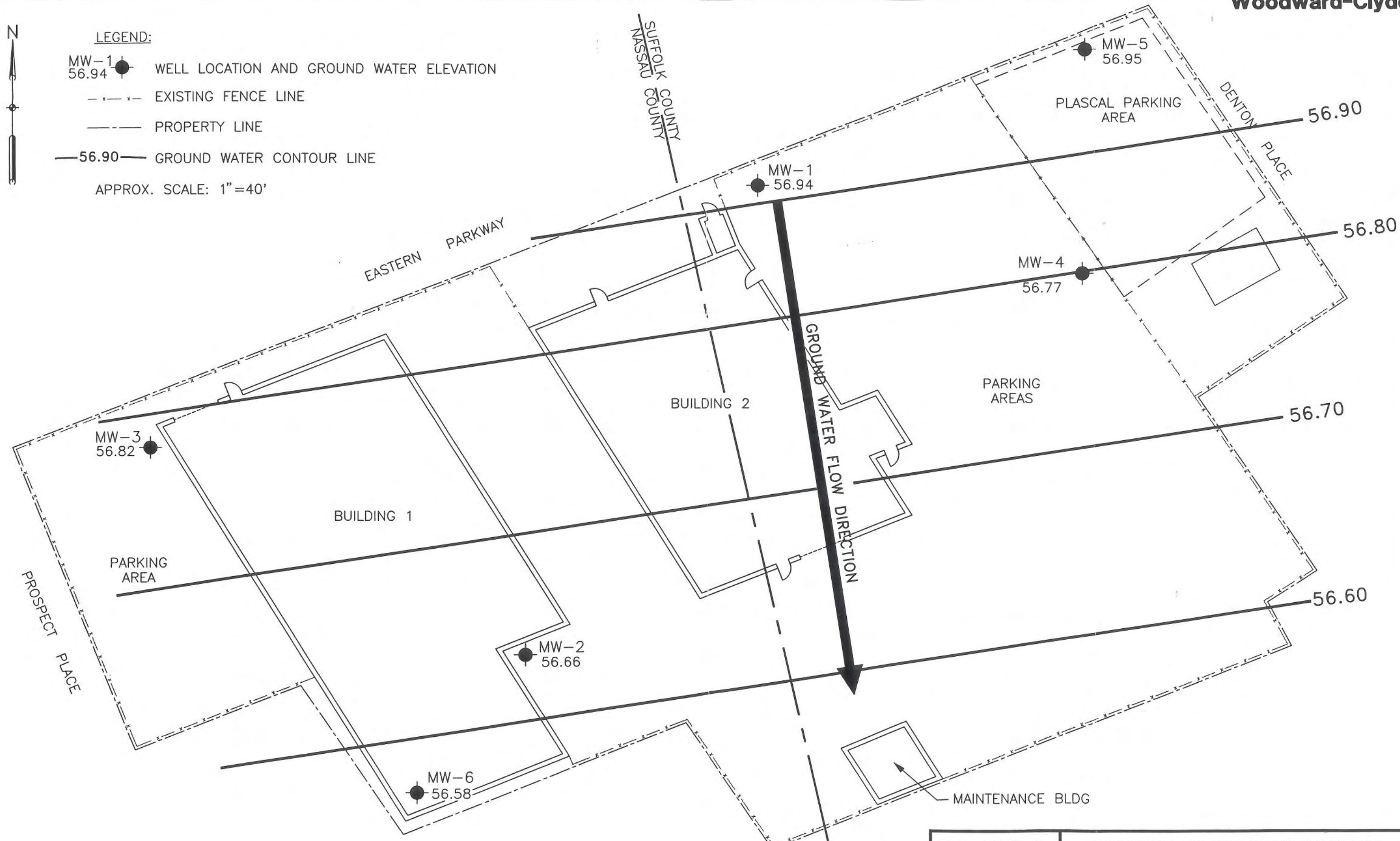
MW-1 56.94 ● WELL LOCATION AND GROUND WATER ELEVATION

- - - - EXISTING FENCE LINE

— — — — PROPERTY LINE

—56.90— GROUND WATER CONTOUR LINE

APPROX. SCALE: 1"=40'



Job No. 6E02196-RF12	GROUNDWATER SURFACE ELEVATION CONTOUR MAP MAY 28, 1998 REPUBLIC ENVIRONMENTAL SYSTEMS (NEW YORK), INC. FARMINGDALE, NEW YORK
Prepared by: TFP	
Date: 07/07/1998	

CA725 Figure 5

6e02196b.dwg

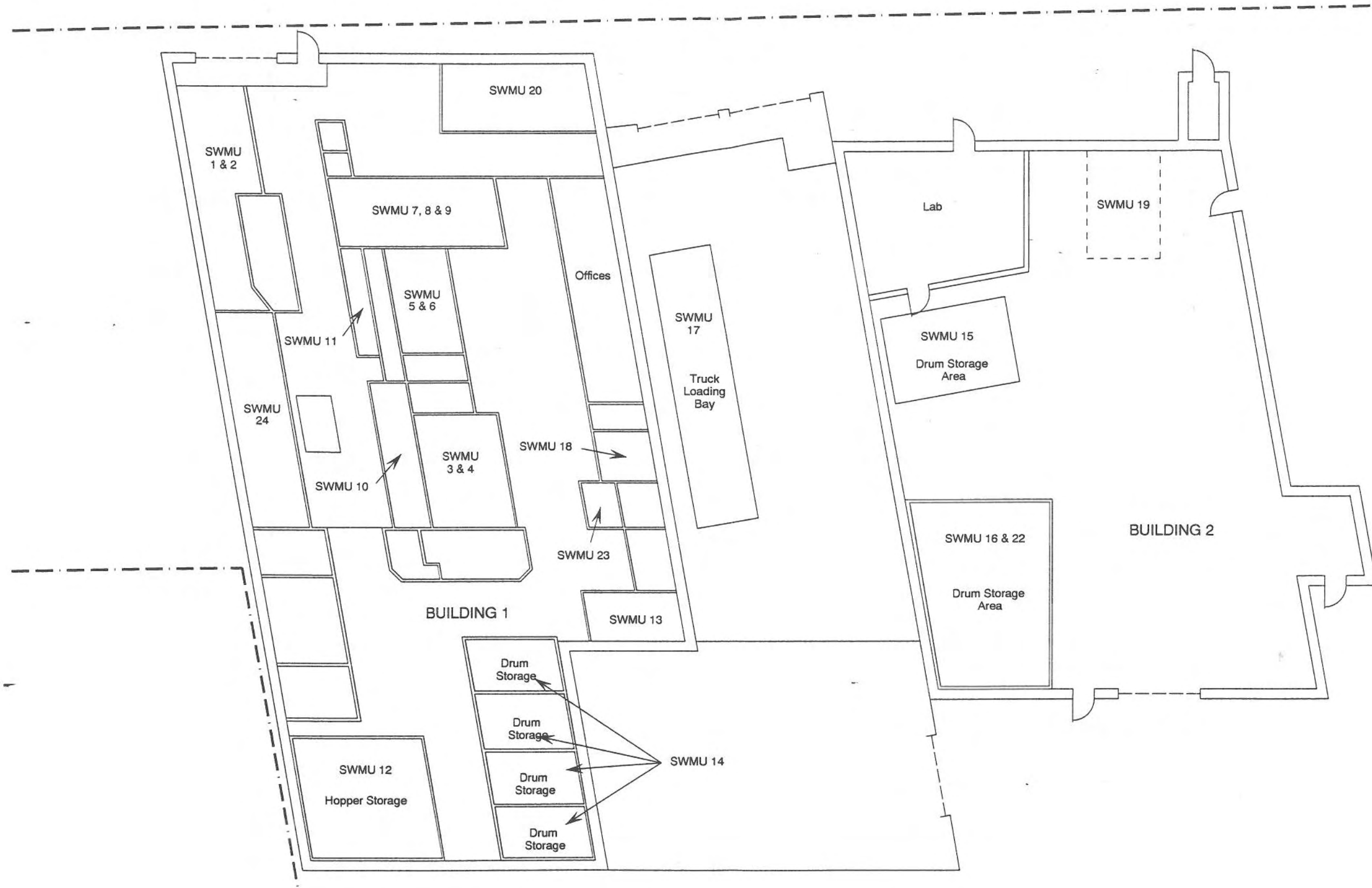


- ◇ Soil sample location (No closure Action Level exceedences)
- ◊ Action Level for at least one constituent was exceeded in the 0-2 foot interval sample
- ◊ Action Level for at least one constituent was exceeded in the 2-4 foot interval sample

REVISION:	



DATE: 01 JUL 97	REPUBLIC ENVIRONMENTAL SYSTEMS (NY), INC.	JOB NO. RESI-05
DESIGN: MJC	FARMINGDALE, NEW YORK	SHEET
DRAWN: MJC	CA725 Figure 4	
	SITE PLAN SHOWING SOIL SAMPLING LOCATIONS	

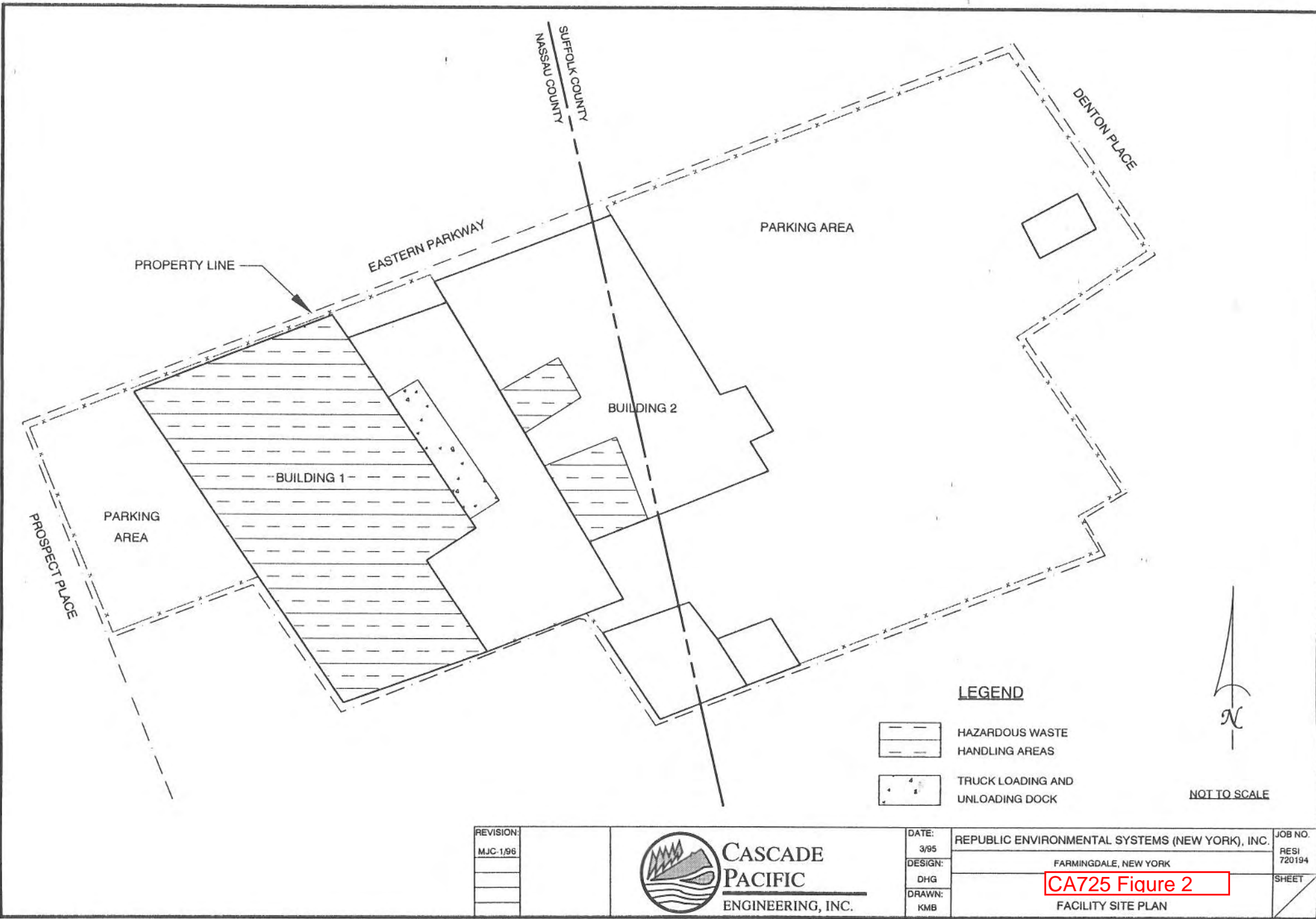


NOT TO SCALE

REVISION:
03APR95
MJC-1/96



DATE:	REPUBLIC ENVIRONMENTAL SYSTEMS (NEW YORK), INC.	JOB NO.
21MAR95	FARMINGDALE, NEW YORK	RESI 720194
DESIGN:		SHEET
DHG	CA725 Figure 3	1
DRAWN:	SOLID WASTE MANAGEMENT UNIT LOCATIONS	1
MJC		



PROPERTY LINE

EASTERN PARKWAY

SUFFOLK COUNTY
NASSAU COUNTY

DENTON PLACE

PARKING AREA



BUILDING 2

BUILDING 1

PARKING AREA

PROSPECT PLACE

LEGEND

-  HAZARDOUS WASTE HANDLING AREAS
-  TRUCK LOADING AND UNLOADING DOCK



NOT TO SCALE

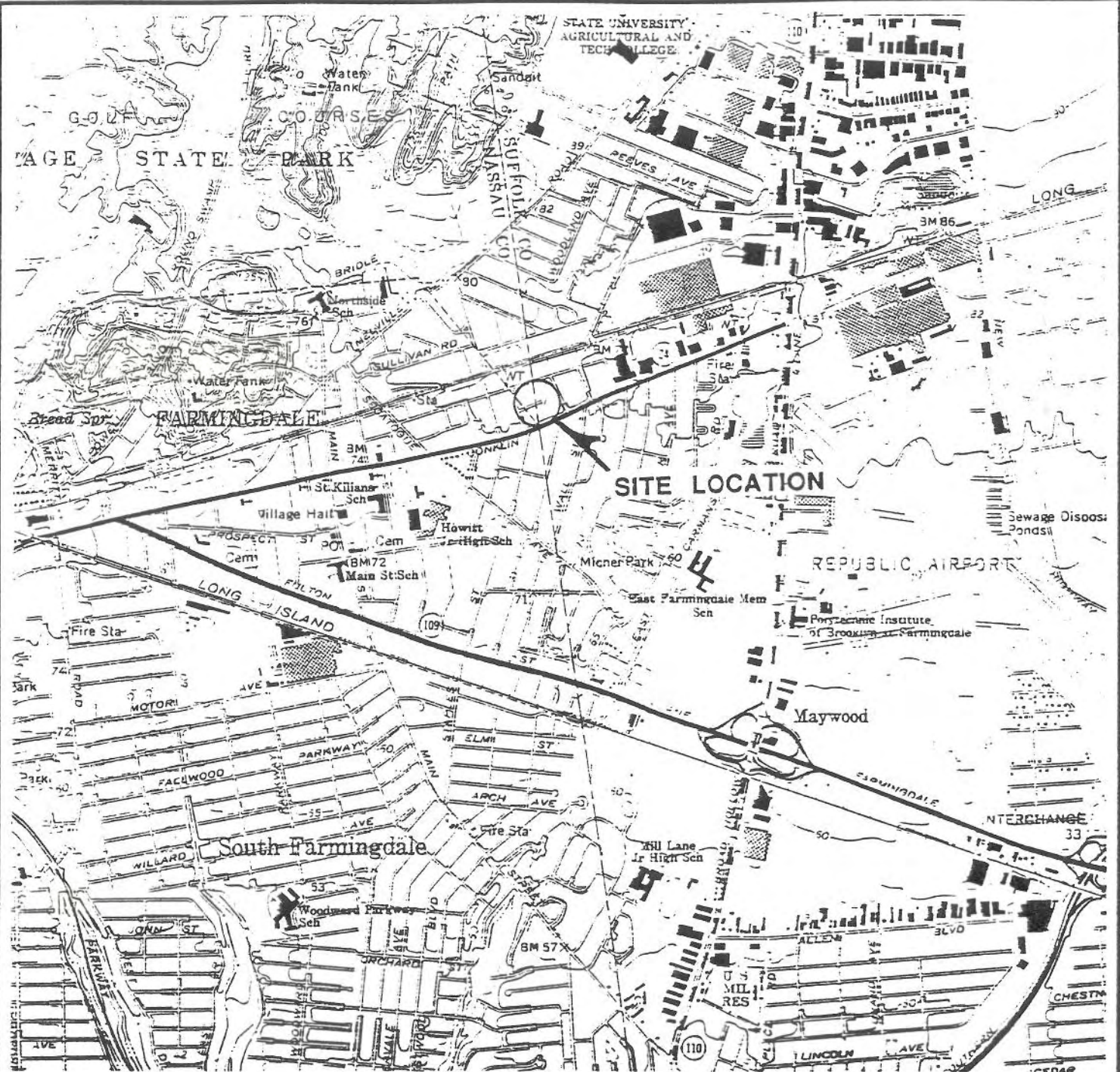
REVISION:
MJC-1/96



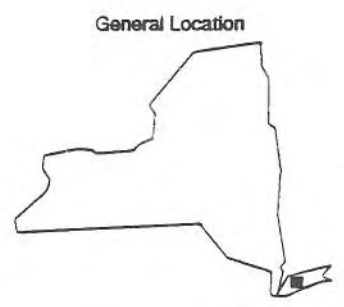
**CASCADE
PACIFIC**
ENGINEERING, INC.

DATE:
3/95
DESIGN:
DHG
DRAWN:
KMB

REPUBLIC ENVIRONMENTAL SYSTEMS (NEW YORK), INC.	JOB NO.
FARMINGDALE, NEW YORK	RESI 720194
CA725 Figure 2	SHEET
FACILITY SITE PLAN	



GRAPHIC SCALE (in miles)



General Location

SOURCE: U.S.G.S. 7.5 Minute Series
Amityville, NY Quadrangle
1969 (Photorevised 1979)



REPUBLIC ENVIRONMENTAL SYSTEMS (NEW YORK), INC.
FARMINGDALE, NEW YORK

CA725 Figure 1

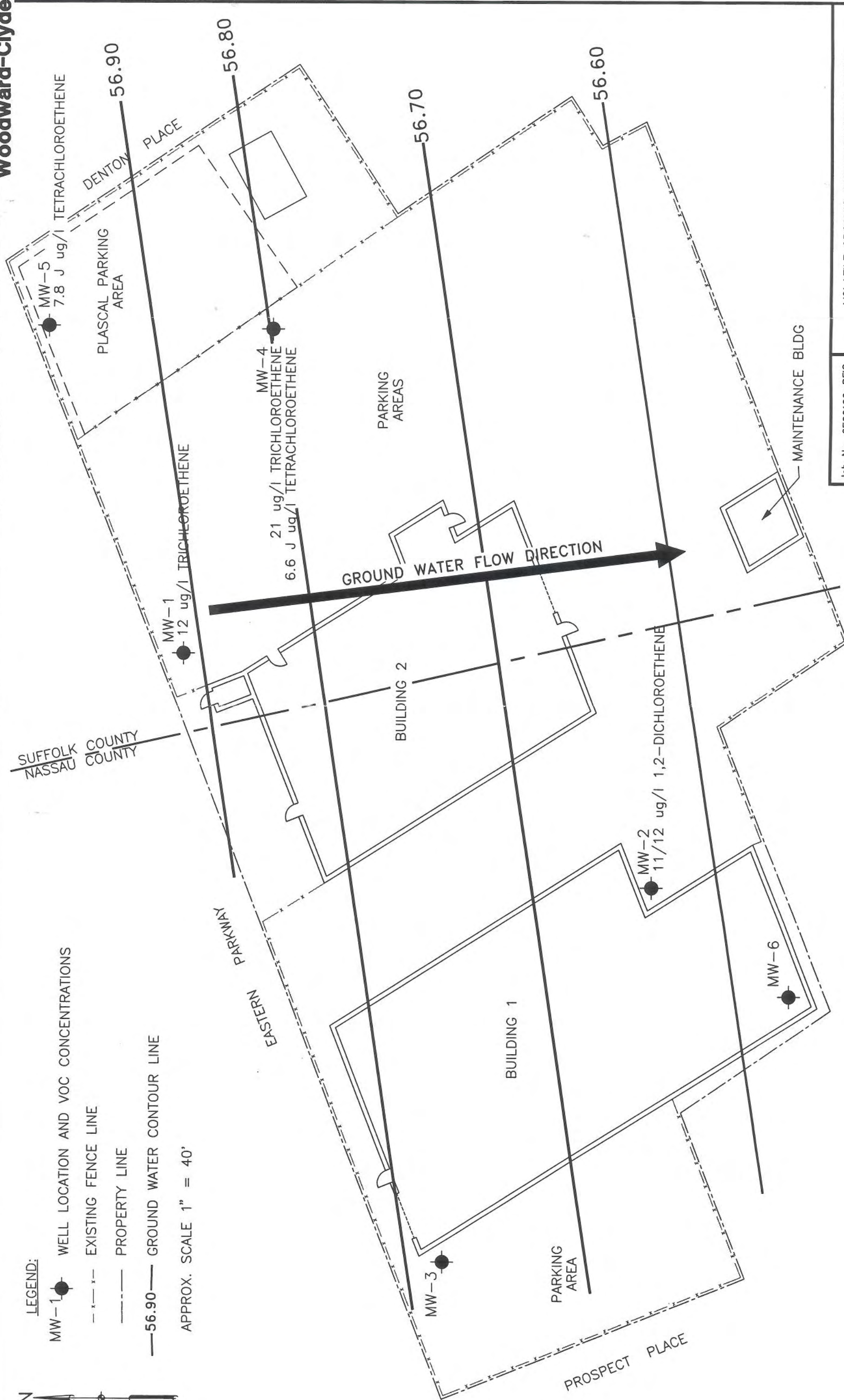
LOCATION MAP

JOB NO.:
RESI
720194
SHEET:



LEGEND:

- MW-1 ● WELL LOCATION AND VOC CONCENTRATIONS
 - - - - - EXISTING FENCE LINE
 - — — — — PROPERTY LINE
 - 56.90 — GROUND WATER CONTOUR LINE
- APPROX. SCALE 1" = 40'



Job No. 6E02196-RF12
Prepared by: TFP
Date: 07/07/1998

VOLATILE ORGANIC CONCENTRATIONS ABOVE
 NYSDEC CRITERIA IN GROUNDWATER, MAY 1998
 REPUBLIC ENVIRONMENTAL SYSTEMS (NEW YORK), INC.
 FARMINGDALE, NEW YORK

CA725 Figure 6