538 Broad Hollow Road, 4th Floor East
Melville, NY 11747 | tel 631.756.8000

September 20, 2018

Mr. Mark Carrara
NYS Department of Environmental Conservation – Region 1
Regional Permit Administrator
SUNY Stony Brook Campus
50 Circle Rd.
Stony Brook, NY 11790-3409

Re: Bethpage Water District
NYSDEC Public Supply Water Permit Application and Response to Incomplete Items
H2M Project No.: BPWD 18-06

Dear Mr. Carrara:

Pursuant to your letter dated August 20, 2018 regarding H2M's initial permit application package submittal on behalf of Bethpage Water District, we are resubmitting electronically.

The revised submittal addresses the incomplete items by:

- creating an entirely electronic submittal;
- answering the Project Justification questions and other questions from your letter;
- incorporating all oversized documents as part of the electronic file, including a modified map of the BGD well field; and
- including a professional engineer stamp and seal of the engineering report.

One of your questions not answered in the Project Justification is what kind of water quality treatment we expect to require at the well. Based on nearby wells BGD-1 and South Park Drive, we anticipate treating the water possibly for nitrates, perchlorate, and low-level VOC's, (based on what is typically found in other wells) chlorination, and pH adjustment. Low levels of naturally occurring minerals, such as Iron and Manganese may also occur and require treatment but are not anticipated. The proposed project includes first a test well, where sampling and testing will help refine the treatment needs.

<u>The following is the original submittal letter language.</u>

The Bethpage Water District is proposing to construct a new public supply well. On behalf of the District, we request a Public Water Supply Permit from your Department to authorize construction of the well to replace some of the District's water supply capacity that was of poor quality.

Enclosed, please find copies of the following documents for the above reference project:

- Joint Application Form
- Water Withdrawal Application Supplement WW-1
- Engineering Study and Report Application for Water Supply Well Permit for the construction of Supply Well No. 9
- Long Environmental Assessment Form (LEAF)

In addition, we provide the following information:

1. <u>Location for Public Hearing, if necessary:</u>

   Bethpage Water District
   25 Adams Ave
   Bethpage, NY 11714

2. Concerned Officials:

a.	Applicant:	Michael Boufis, Superintendent Bethpage Water District 25 Adams Ave Bethpage, NY 11714
b.	Applicant's Attorney:	Michael F. Ingham, Esq. Carman Callahan & Ingham, LLP 266 Main Street Farmingdale, NY 11735
c.	Applicant's Engineer:	James Neri, P.E. H2M architects + engineers 538 Broad Hollow Road, 4th Floor East Melville, New York 11747

3. Forms:

   a. State Environmental Quality Review EAF (Long Form)
   b. NYSDEC Water Supply Application
   c. Joint Application for Permit

4. Maps and Exhibits (contained in the report):

Appendices:

   a. Appendix A Division of Water, Technical, and Operation Guidance Series (3.2.2)
   b. Appendix B SEQRA Long Environmental Assessment Form
   c. Appendix C Bethpage Well Water Quality Laboratory Results
   d. Appendix D Toxics Targeting Report
   e. Appendix E 2017 Water Conservation Plan
   f. Appendix F Grant of Easement
   g. Appendix G Northrop Grumman OU-2 Remedial Well Analysis

Exhibits:

   a. Exhibit A Map of Bethpage Water District with Plant Locations
   b. Exhibit B Water Distribution System
   c. Exhibit C District Area with Known Elevated Levels of Regulated Contaminants
   d. Exhibit D Hydrogeological Cross Section
   e. Exhibit E Well Site Plan and Specifications Outline
   f. Exhibit F United States Geological Survey Maps: Hydrogeologic Framework of Long Island, New York

Should you have questions or require further information, please feel free to contact our office at (631) 756-8000 extension 1486.

Very truly yours,

H2M architects + engineers

James L. Neri

Digitally signed by James L. Neri
DN: cn=James L. Neri, o=H2M architects + engineers, ou=014000, email=jneri@h2m.com, c=US
Date: 2018.09.21 11:46:35 -04'00'

James L. Neri, P.E.
Vice President

Enclosure(s) : 1 copy of engineering report + 1 copy of application forms

cc: Board of Commissioners

Michael Boufis, Superintendent
Basil Seggos, Commissioner NYSDEC
Martin Brand, NYSDEC
Rose Harvey, Commissioner NYS Parks and Recreation
Patricia Ramirez, Nassau Co. DOH
Michael F. Ingham, Esq.
Rich Humann, H2M

X:\BPWD (Bethpage Water District) - 10150\BPWD1806 - New Well at BGD\02-Permitting\NYSDEC-StonyBrook.docx

Statement of Project Justification

Evaluation of Alternatives:

Multiple alternatives are discussed in Section 6 and include water conservation, importation, increased storage, treatment, alternatives locations, and shallower screened intervals.

a) why the proposed project was selected from the evaluated alternatives (Section 6);

   The proposed project was selected on the basis having an existing lease and grant of easement agreement with Bethpage State Park for the site, combined with the generally high-quality water currently being produced by the South Park Drive well and BGD-1 well nearby. The proposed site, based on proximity to the SPD and BGD-1 wells, is thought to be capable of high production, as well, replacing ideally up to 3MGD of the 10 MGD which will be lost by the District due to contamination.

b) why increased water conservation or efficiency measures cannot negate or reduce the need for the proposed water withdrawals (Section 6.1);

   The proposed new well is not planned to add additional capacity to the Bethpage system on a net basis. Most of the nine existing wells currently online for the District are contaminated and water treatment is required. The most contaminated wells are planned to be phased out after the new proposed well is producing. Therefore, additional conservation measures beyond the April 2017 Water Conservation plan issued by the District will not be considered.

c) why the proposed water withdrawal quantity is reasonable for the proposed use (Section 6.5);

   The proposal withdrawal quantity is 3 MGD and as stated above is intended as an offset to contaminated wells that will be taken offline, which in total will reduce capacity by 10 MGD.

d) why the proposed water conservation measures are environmentally sound and economically feasible (Section 6.1);

   The District fully supports water conservation measures. In April 2017, the District produced a Water Conservation plan, as part of the required annual submission to NYSDEC (Appendix E - Water Conservation Plan). The program includes source water inventory, water usage and metering, water supply auditing, leak detection and repair, and water use reduction. The District makes every effort to conserve water through their water conservation program. With the District consisting of mostly single-family homes, lawn and garden irrigation is a significant portion of the water use. The District proposes to continue with public education to allow property owners (and their landscapers) to irrigate with the proper amount of water and not over-irrigate, as well as continue to enforce odd-even sprinkling requirements.

   Stricter water conservation alone, however, would not be practical for offsetting degrading water quality. If the District were to take more supply wells off line due to poor quality,

conservation alone would not be adequate to meet peak demands.

e) whether the proposed water supply is adequate (Section 6.5);

The 3 MGD well is sized to replace a fraction of the capacity that will eventually be lost by taking the contaminated wells offline, without adding more system capacity, and will be part of an adequate supply until other wells are taken offline because of contamination.

f) whether the proposed project is just and equitable to other municipalities and their inhabitants regarding present and future needs for sources of potable water;

Yes. Understanding the general groundwater flow, the siting of this well within the boundaries of the Districts service area and its location adjacent to the Bethpage state park and Seaford Oysterbay - NY135, we are of the opinion that the well proposed is consistent with established usage of the sole source aquifer and will have no adverse affect on water suppliers adjacent to the Bethpage Water District.

g) whether the proposed withdrawal will result in no significant individual or cumulative adverse environmental impacts on the quantity or quality of the water source and water dependent natural resources (Section 4);

Our drawdown calculations indicate that there should be no adverse impact to the aquifer or nearby environmental features.

h) whether the proposed withdrawal will be consistent with all applicable municipal, state and federal laws as well as regional interstate and international agreements;

Yes. The well production is expected to be within all applicable municipal state and federal laws. The location of this well and its subsequent operation, will present no interstate or international interference.

New York State Department of Environmental Conservation

Water Withdrawal Application Supplement WW-1

Pursuant to 6 NYCRR Part 601

READ THE INSTRUCTIONS ON PAGE 2 BEFORE COMPLETING THIS FORM

May 2013

FOR DEPARTMENT USE ONLY
Application No.
WWA Number

1. APPLICANT NAME Bethpage Water District

2. FACILITY NAME New Well at BGD Plant

3. PROJECT TYPE
- [x] Water Withdrawal
- [ ] New Public Water Supply Service Area or Extension
- [ ] Land Acquisition for Public Water Supply
- [ ] Change in Use of Existing Water Withdrawal

4. WATER USE TYPE
- [x] Public Water Supply
- [ ] Bottled/Bulk Water
- [ ] Commercial
- [ ] Cooling
- [ ] Industrial
- [ ] Institutional
- [ ] Mine Dewatering
- [ ] Oil/Gas Production
- [ ] Power Production
- [ ] Recreational
- [ ] Other:

5. WITHDRAWAL TYPE [ ] Existing [x] New

If this is an existing public water supply, provide the most recent WSA or WWA Number:

If other than public water supply, list other existiing or pending related DEC permits (e.g., SPDES, Mining, Dam):

6. WATER WITHDRAWAL SOURCE
- [ ] Surface Water — Water Body Name(s):
- [x] Groundwater — Nearest Surface Water Body: Expressway Stormwater Basin — Distance From Well (in feet): 1,700

7. WATER SUPPLY TO OTHER STATES Does this project involve the transport of any fresh water of NYS through pipes, conduits, ditches or canals to any other state?

[x] No [ ] Yes, describe:

8. TRANSPORTATION OF WATER BY VESSEL Does this project involve the transport by vessel of more than 10,000 gallons per day of surface water? (Excludes ballast water necessary for normal vessel activity. A vessel is defined as any floating craft propelled by mechanical power.) [ ] Yes [x] No

9. WATER WITHDRAWAL AMOUNTS This project involves the withdrawal of up to: 3,000,000 gallons per day Source Name: Magothy Aquifer

Does the project include a MAJOR DRAINAGE BASIN TRANSFER of water? See map at http://www.dec.ny.gov/lands/56800.html [x] No [ ] Yes

If yes, [ ] Existing [ ] New From Basin: To Basin:

10. *REQUIRED EXHIBITS (6 NYCRR Part 601.10)* *Provide the names of the required exhibits applicable to this withdrawal:*

601.10(a) *PROJECT AUTHORIZATION FOR PUBLIC WATER SUPPLY SYSTEMS (e.g. Resolutions, Ordinances)*	N/A	***601.10(h)*** *ACQUISITION MAPS (Map of any lands to be acquired as part of project)*	N/A
601.10(b) *GENERAL MAP (e.g. Project Location, For Public Water Supplies - water service area boundary)*	Eng Report - Exhibit A	***601.10(i)*** *WATER ANALYSES (Public Water Supplies should submit chemical & bacterial analysis directly to NYSDOH)*	Eng Report - Appendix C
601.10(c) *WATERSHED MAPS (Topographic map with location of withdrawal and any return flow or interbasin diversions).*	Eng Report - Exhibit D	***601.10(j)*** *TREATMENT METHODS (Public Water Supplies - proposed methods to meet NYSDOH standards)*	Eng Report - Sec 2.1.2
601.10(d) *CONTRACT PLANS (Public Water Supplies should submit directly to NYSDOH for review and approval)*	Eng Report - Exhibit E	***601.10(k)*** *PROJECT JUSTIFICATION (Provide summary statement of answers to the eight justification questions)*	N/A
601.10(e) *ENGINEER'S REPORT (Signed by NYS PE, includes project description, water source yields and demands, etc.)*	Eng Report	***601.10(l)*** *CANAL WITHDRAWAL APPROVALS (If applicable, provide adequate proof of approval from Canal Authority)*	N/A
601.10(f) *WATER CONSERVATION PROGRAM (Completed Water Conservation Program Form)*	Eng Report - Appendix E	***601.10(m)*** *TRANSMITTAL LETTER (Include all contact information for applicant, attorney, engineer, etc.)*	Cover Letter
601.10(g) *ANNUAL REPORTING FORM FOR EXISTING WITHDRAWALS (Most recent submitted annual report)*	Eng Report - Table 2-5	***601.10(n)*** *GREAT LAKES-ST. LAWRENCE RIVER WATER RESOURCES COMPACT PROCESS REQUIREMENTS (Only applicable to Public Water Supply diversions from Great Lakes Basin - no other diversion types are allowed).*	N/A

Clear Form

Applicant Signature: Michael J. Boufis

Name: Michael J. Boufis

Title: Superintendent

Date: 7/23/18

NEW YORK STATE | Department of Environmental Conservation | Office of General Services | Department of State

US Army Corps of Engineers

JOINT APPLICATION FORM

For Permits for activities activities affecting streams, waterways, waterbodies, wetlands, coastal areas, sources of water, and endangered and threatened species.

You must separately apply for and obtain Permits from each involved agency before starting work. Please read all instructions.

1. **Applications To:**

>NYS Department of Environmental Conservation ☑ Check here to confirm you sent this form to NYSDEC.

Check all permits that apply:

- ☐ Stream Disturbance
- ☐ Excavation and Fill in Navigable Waters
- ☐ Docks, Moorings or Platforms
- ☐ Dams and Impoundment Structures
- ☐ 401 Water Quality Certification
- ☐ Freshwater Wetlands
- ☐ Tidal Wetlands
- ☐ Wild, Scenic and Recreational Rivers
- ☐ Coastal Erosion Management
- ☑ Water Withdrawal
- ☑ Long Island Well
- ☐ Incidental Take of Endangered / Threatened Species

>US Army Corps of Engineers ☐ Check here to confirm you sent this form to USACE.

Check all permits that apply: ☐ Section 404 Clean Water Act ☐ Section 10 Rivers and Harbors Act

Is the project Federally funded? ☐ Yes ☑ No

If yes, name of Federal Agency:

General Permit Type(s), if known:

Preconstruction Notification: ☐ Yes ☑ No

>NYS Office of General Services ☐ Check here to confirm you sent this form to NYSOGS.

Check all permits that apply:

- ☐ State Owned Lands Under Water
- ☐ Utility Easement (pipelines, conduits, cables, etc.)
- ☐ Docks, Moorings or Platforms

>NYS Department of State ☐ Check here to confirm you sent this form to NYSDOS.

Check if this applies: ☐ Coastal Consistency Concurrence

2. **Name of Applicant**

Bethpage Water District

Taxpayer ID (if applicant is NOT an individual)

N/A

Mailing Address: 25 Adams Avenue

Post Office / City: Bethpage

State: NY

Zip: 11714

Telephone: 516-931-0093

Email: mboufis@bethpagewater.com

Applicant Must be (check all that apply): ☑ Owner ☑ Operator ☐ Lessee

3. **Name of Property Owner (if different than Applicant)**

NYSOPRHP - Long Island Region

Mailing Address: P.O. Box 247 - Long Island Engineering Department

Post Office / City: Babylon

State: NY

Zip: 11704

Telephone: (631)669-1000

Email:

For Agency Use Only	Agency Application Number:

4. **Name of Contact / Agent**

James L. Neri

Mailing Address	Post Office / City	State	Zip
538 Broad Hollow Road 4th Floor East	Melville	NY	11747

Telephone 631-756-8000 Email jneri@h2m.com

5. **Project / Facility Name**

New Well at BGD Site

Property Tax Map Section / Block / Lot Number: 47/D/17H

Project Street Address, if applicable	Post Office / City	State	Zip
	Bethpage	NY	11714

Provide directions and distances to roads, intersections, bridges and bodies of water

Easement along Plainview Rd south of Charles Campagne Elementary School

☑ Town ☐ Village ☐ City

Town	County	Stream/Waterbody Name
Bethpage	Nassau	Magothy Aquifer

Project Location Coordinates: Enter Latitude and Longitude in degrees, minutes, seconds:

Latitude: 40 ° 45 ' 17 " Longitude: 73 ° 28 ' 24 "

6. **Project Description:** Provide the following information about your project. Continue each response and provide any additional information on other pages. **Attach plans on separate pages.**

a. Purpose of the proposed project:

Construct a new well capacity to partially replace the likely loss of capacity from five other wells currently experiencing contamination in the Bethpage Water District.

b. Description of current site conditions:

There is currently a well house and treatment building for the existing BGD-1 well on the property.

c. Proposed site changes:

Construction of a new 3 MGD (~2083 GPM) supply well located at the southern end of the BGD plant site off of Plainview Road. Site piping for connection to existing well house and distribution.

d. Type of structures and fill materials to be installed, and quantity of materials to be used (e.g., square feet of coverage, cubic yards of fill material, structures below ordinary/mean high water, etc.):

1,440 square feet for new 1-story well house and ~1,000 feet of new 12" water main to existing facilities and 450 cubic yds of DGA fill

e. Area of excavation or dredging, volume of material to be removed, location of dredged material placement:

~4,500 square feet of excavation for building and water main

f. Is tree cutting or clearing proposed? ☑ Yes If Yes, explain below. ☐ No

Timing of the proposed cutting or clearing (month/year): May through Oct 2019

Number of trees to be cut: 6 Acreage of trees to be cleared: <1

g. Work methods and type of equipment to be used:

Well: Drill a 680 foot deep well with a drill rig.
Excavation: Backhoe equipment
Structure: Construction with typical concrete/masonry equipment such as backhoe, concrete truck, and small tools.
Driveway: Asphalt Paver

h. Describe the planned sequence of activities:

Well: Drill test well; drill permanent well; install casing, well screen, riser,etc; develop well
Structure: Construct; install piping, perform electrical work; install well pump, final pump test; connect to water supply system
Site: Construct fence and driveway

i. Pollution control methods and other actions proposed to mitigate environmental impacts:

Erosion and sediment control

j. Erosion and silt control methods that will be used to prevent water quality impacts:

Silt fence, filters for all drainage structures.

k. Alternatives considered to avoid regulated areas. If no feasible alternatives exist, explain how the project will minimize impacts:

Water supply is necessary for the replacement water system. Impacts will be minimal since it is creation of a replacement water supply to replace an existing supply that does not meet NYSDOH requirements.

l. Proposed use: ☐ Private ☑ Public ☐ Commercial

m. Proposed Start Date: June 2019 Estimated Completion Date: June 2020

n. Has work begun on project? ☐ Yes If Yes, explain below. ☑ No

o. Will project occupy Federal, State, or Municipal Land? ☑ Yes If Yes, explain below. ☐ No

Well and facilities will be constructed on land leased from Bethpage State Park

p. List any previous DEC, USACE, OGS or DOS Permit / Application numbers for activities at this location:

q. Will this project require additional Federal, State, or Local authorizations, including zoning changes?

☐ Yes If Yes, list below. ☑ No

7. **Signatures.**
Applicant and Owner (If different) must sign the application.
Append additional pages of this Signature section if there are multiple Applicants, Owners or Contact/Agents.

I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief.

Permission to Inspect - I hereby consent to Agency inspection of the project site and adjacent property areas. Agency staff may enter the property without notice between 7:00 am and 7:00 pm, Monday - Friday. Inspection may occur without the owner, applicant or agent present. If the property is posted with "keep out" signs or fenced with an unlocked gate, Agency staff may still enter the property. Agency staff may take measurements, analyze site physical characteristics, take soil and vegetation samples, sketch and photograph the site. I understand that failure to give this consent may result in denial of the permit(s) sought by this application.

False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the NYS Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than $10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.

Signature of Applicant | Date: 7/23/18

Applicant Must be (check all that apply): ☑ Owner ☑ Operator ☐ Lessee

Printed Name: Michael J. Boufis | Title: Superintendent

Signature of Owner (if different than Applicant) | Date

Printed Name | Title

Signature of Contact / Agent | Date

James L. Neri

Digitally signed by James L. Neri
DN: cn=James L. Neri, o=H2M architects + engineers, ou=014000, email=jneri@h2m.com, c=US
Date: 2018.09.20 17:19:01 -04'00'

Printed Name: James L. Neri | Title: Division Director of Water

For Agency Use Only **DETERMINATION OF NO PERMIT REQUIRED**

Agency Application Number

(Agency Name) has determined that No Permit is required from this Agency for the project described in this application.

Agency Representative:

Printed Name | Title

Signature | Date

ENGINEERING REPORT

New Well at the BGD Plant

Bethpage Water District
Towns of Oyster and Hempstead
Nassau County, New York

H2M Project No.
BPWD 18-06

JULY 2018

Prepared for:

Bethpage Water District
25 Adams Avenue
Bethpage, New York 11714

Prepared by:

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, New York 11747

H 2 M architects + engineers

TABLE OF CONTENTS

Tables

Appendices

Exhibits

1 PURPOSE AND INTRODUCTION

1.1 PURPOSE

The purpose of this report is to satisfy the requirements of the New York State Department of Environmental Conservation (NYSDEC) to obtain approval for construction of a new water supply well at the B.G.D. Site leased by Bethpage Water District (BPWD) from NYS. The format of this report and well permit application is based on the NYSDEC memorandum "Division of Water, Technical and Operational Guidance Series (3.2.2), Engineer's Reports; Application for Water Supply and Long Island Well Permits" (Appendix A).

1.2 INTRODUCTION

Due to degrading water quality in the Bethpage Water District service area, the Board of Commissioners have authorized H2M architects + engineers, Inc. to prepare this Engineering Report for the construction of the new proposed well, BGD-2. This report will examine in detail the feasibility and potential influence of a new public supply well in the District.

2 DESCRIPTION OF PROPOSED ACTION

2.1 WATER SUPPLY SYSTEM DESCRIPTION

2.1.1 SERVICE AREA

The Bethpage Water District is a special improvement water district that services mostly areas in the Town of Oyster Bay with some service in the Town of Hempstead. The Bethpage Water District is administered by an elected Board of Water Commissioners. The Board is comprised

of three members who set policy and approve expenditures. Positions on the Board include Chairman, Secretary and Treasurer. The Water District also employs a Superintendent who oversees day-to-day operations, supervises district staff and reports to the Board of Commissioners. The District supplies water service primarily to the community of Bethpage, in addition to small areas of Levittown, Hicksville, South Farmingdale, Plainview and Old Bethpage.

The District is in the county of Nassau and covers approximately 5.5 square miles. It is bounded on the north by the Plainview Water District; on the west by the Hicksville and Levittown Water Districts; on the South by the South Farmingdale Water District; and on the east by the Bethpage State Park, Plainview Water District, South Farmingdale and the Incorporated Village of Farmingdale.

The approximate population served by the District is 33,000 through approximately 8,800 residential and commercial water services. Most of the land within the District is zoned for residential use. The District has practically reached its saturation point, with a minimal amount of vacant land remaining for development. The central section of the District includes a portion of Bethpage State Park to the east and the Northrop-Grumman corporation (commercial-industrial) property to the west. Exhibit A shows a map of the Bethpage Water District highlighting the proposed well site in relation to the District's other well sites and the Northrop-Grumman Corp. site.

2.1.2 WELL FACILITIES

The District obtains its entire water supply from one underground formation by means of nine (9) supply wells with a total authorized pumping capacity of 19.04 (MGD) (Table 2-1). All nine of the wells are screened within the Magothy formation.

Treatment methods employed by the District vary at each supply facility. Sodium hypochlorite for disinfection and sodium hydroxide (caustic soda) for pH adjustment is used at each well site.

Plant Nos. 4, 5 and 6 currently have air stripping treatment systems in place to treat for volatile organic compounds (VOCs); the three plants also utilize GAC filtration to provide additional VOC removal. Based on historical monitoring well data and data provided to the Water District by the remedial investigations performed by Northrop Grumman and the U.S. Navy, Plant Nos. 4, 5 and 6 have been adversely impacted by VOCs because of operations formally employed at the former Grumman site.

At Plant No. 1, Well Nos. 7 and 8 are currently impacted by nitrate and VOC contamination, as well as perchlorate. Well Nos. 7 and 8 at Plant No. 1 both utilize GAC filtration for the removal of VOCs and ion exchange technology for the removal of nitrate and perchlorate. Nitrate concentrations for 2017 at Well No. 7 were 8.0 mg/ℓ maximum and 6.8 mg/ℓ average. Nitrate concentrations at well No. 8 were slightly better at 4.8 mg/ℓ maximum and 4.3 mg/ℓ average, the nitrate concentrations at Well No. 7 of 8.0 mg/ℓ are approaching the MCL, 10.0 mg/ ℓ. Well No. 9 is located at Plant No. 1; this well has been out of service since 1991 and was ultimately abandoned in 2010 due to excessively poor water quality.

Well No. BGD-1 at Plant BGD includes a GAC filtration system for the removal of VOCs and an ion exchange resin filtration system for the removal of perchlorate. Perchlorate in untreated water from Well No. BGD-1 has been as high as 8.1 ug/ℓ during 2017. The current action level from the NYSDOH is 18.0 ug/ℓ. The New York State Department of Health (NYSDOH) provisional standard for perchlorate requires Public Notification when perchlorate is found at 18 ug/l, and requires large water suppliers to report findings in their Annual Drinking Water Quality Reports. Notification must be made to the Department when perchlorate is detected at 5 ug/ℓ. The Action Level reflects the known effects of perchlorate on the thyroid relating to its medical use. According to recent health studies, perchlorate at elevated concentrations may affect individuals with thyroid problems. The precise levels linked to these effects have not been determined now.

2.1.3 BOOSTER PUMP FACILITIES

Booster pumping facilities are located at Plants BGD, 4, 5 and 6. The booster pumps at Plants BGD and No. 4 pump water from their corresponding on-site ground storage facilities to the system. The booster pumps at Plant Nos. 5 and 6 transfer water from the air stripper tower clear well into the distribution system.

2.1.4 STORAGE FACILITIES

The Bethpage Water District has four (4) water storage tanks with a total volume of 6.25 million gallons (MG) (Table 2-2). There is a 1.25 MG elevated storage tank at Plant No. 1, a 1.5 MG ground storage tank and Plant No. 4, a 1.5 MG elevated storage tank at the Grumman Road Plant, and a 2.0 MG ground storage tank at Plant BGD.

2.1.5 INTERZONE FACILITIES

The elevations of the District range from approximately 75 to 145 feet above mean sea level (MSL). This range allows the District to run one pressure zone without experiencing excessive pressures in the low elevation areas and/or inadequate pressures in the high areas.

System pressure is normally maintained by two elevated storage tanks, which have an overflow elevation of 260 feet above MSL. In the event an elevated tank is temporarily removed from service, system pressure can be maintained by the other tank or by the ground storage tank booster pumps and the well pumps. All pumps can be controlled by system pressure controls rather than by the primary high-low tank level controls.

2.1.6 DISTRIBUTION SYSTEM

Over 116 miles of water main deliver potable supply throughout the District's service area; a summary of the distribution pipe diameters and lengths has been tabulated (Table 2-3), and a map of the District's distribution system has been provided (Exhibit B)

2.1.7 INTERCONNECTIONS

The Bethpage Water District maintains 15 interconnections with five (5) neighboring water suppliers. This includes five (5) interconnections with the South Farmingdale Water District, three (3) with the Plainview Water District, three (3) with the Hicksville Water District, three (3) with the Levittown Water District and one (1) with the Inc. Village of Farmingdale. The size and location of each interconnection and elevated tank high water level above mean sea level for each adjacent water supplier is listed in Table 2-4.

2.1.8 DESCRIPTION OF WATER SUPPLY SYSTEM NEEDS

The average day and maximum day pumpage for the Bethpage Water District has increased slightly over the last ten years; however, it is not expected to vary significantly from the trend of the past ten years in the near-term planning period. The District's annual pumpage averaged about 1,423 MG per year over the last decade while the average daily use was 3.90 MGD over the same period (Table 2-5).

The evaluation of the District's needs is primarily based on the maximum day demand on the system. The data presented (Table 2-5) shows the maximum day demands over a period of ten years. The generally flat trends in pumpage can be attributed to a relatively steady residential population and lack of commercial development within the District. This value can deviate from the norm as a function of weather conditions, such as extended heat waves without rain. When peak flows exceed the available pumping capacity, the deficit results in a decrease in storage tank levels and in turn a decrease of system pressure. Therefore, maximizing tank levels is necessary to provide normal water pressure throughout the distribution system. Most importantly, stored water is required to meet maximum fire flow demand, as established by the Insurance Services Office (ISO).

It is important to base water supply planning on estimates of overall water supply that will be consistently available. To determine the base water supply availability for the District, a combination of accepted guidelines is used. When considering a single plant or booster facility, which is the only one serving an area or pressure zone, a redundant, full capacity pump is required. One citation of this level of protection is contained in the "Recommended Standards for Water Works of the Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers", which is most often referred to as the "Ten States Standards."[2] The District must comply with the Ten States Standards since they are included in the New York State Sanitary Code Part 5, Drinking Water Standards.

Furthermore, the recommendations in the "Ten States Standards" [2] provide for a level of redundancy for supply wells and water storage capacity sufficient to meet maximum day plus fire flow with the largest facility out of service. This guideline is generally applicable to small water systems or to pressure zones within a water supplier's territory. However, when a system has more than two or three wells, other approaches are appropriate. The Bethpage system has been subject to computer simulation of distribution system, well supply, booster pumping and storage. Ten State Standards for fire flow duration, maximum daily and standby reserve were applied for operational scenarios to maintain a proper minimum residual pressure. An analysis of the District's data (Table 2-6) reveals the District presently has an adequate well supply capacity for the current average water demand. The District also maintains an available storage tank capacity of 6.25 MG. Based on these analyses, the District has sufficient well and storage capacity to meet near term growth in demand.

Currently, the District has been impacted by a degrading water quality trend at Plants 4, 5 and 6. The degradation is primarily due to past operation of the Northrop Grumman Naval Weapons Industrial Reserve Plant. The site is located on 635 acres within the District. Prior activities at the facility included research and development, testing operations and manufacturing operations

for the Navy and NASA. Over time, VOC contamination from the facility entered the groundwater through multiple sources including recharge basins, sumps, dry wells, spills, and hazardous waste storage areas. Contamination plumes have resulted in increasing VOC levels in most of the District's wells; Exhibit C depicts the extent of the area impacted by degraded water quality. A status of water quality for the District's supply wells is shown in Tables 2-7. The District is concerned with its treatment capabilities at its water producing plants. Recent investigations into the off-site groundwater contamination have discovered deep contamination upgradient of the District supply wells 4, 5, and 6, in excess of 10,000 mg/ℓ TVOC. Even with increased treatment capacity, the groundwater plume threatens the long-term vitality of existing District wells.

Both nitrates and VOCs have been detected at all eight of the District's in-service wells. Also, the District is aware that although there is currently no MCL for perchlorate, a State and possibly a Federal MCL for either or both is possible. Perchlorate has been detected in Well Nos. 5-1, 6-1, 6-2, 7, 8, SPD-1 and BGD-1.

The latest water quality data indicates increasing VOC contamination at Well Nos. 4-1, 4-2, 5-1, 6-1 and 6-2. The trend at 6-1 is decreasing concentrations, with shallower contamination having passed by. Deeper contamination is still increasing. Nitrate contamination at Well Nos. 7, 8, and BGD-1; perchlorate contamination at Well Nos. BGD-1, SPD-1, 6-1, 6-2, 7 and 8. Exceeding a regulatory MCL by any of these contaminants will require the impacted well to be removed from service until treatment can be provided. Therefore, the current capacity is at risk of being greatly impacted and subsequently reduced. As evidenced by the MCL exceedances for multiple VOCs at the raw wells of Plants 4, 5 and 6, the great extent of the VOC plume within the District service area threatens the short-term viability of wells 4-1, 4-2, 5-1, 6-1 and 6-2, and therefore, the District is required to obtain additional pumpage capacity from a source outside the plume.

2.1.9 MAJOR WATER USERS

Table 2-8 provides a summary of the top ten (10) largest water users by consumption within the District during 2017. These water users consumed 82,578,000 gallons of water during 2017 which accounts for 5.6 percent of the total pumpage. It is expected that consumption from these water users will remain relatively constant.

2.2 WATER QUALITY

The need to monitor and address water quality issues is one of the District's main focuses. The presence of nitrates, VOCs, and perchlorate is aggressively monitored and managed by the District. Accordingly, water quality samples are routinely taken for each District supply well. Raw water (based on 2017 data) from the supply wells within the District can generally be characterized as:

- Corrosive with a low pH, with averages ranging from 5.3 to 5.9. The water can be expected to be aggressive and generally will cause undesirable amounts of corrosion to ferrous (iron) and copper piping. If not properly treated, this can result in red or blue/green water complaints. The District presently uses caustic soda for pH adjustment (pH is a measure of hydrogen ion activity). If the pH is <7.0 the water is acidic; if the pH is >7.0 the water is alkaline; pH around 8.0 is necessary for optimal corrosion control.
- Low total hardness, which ranges from 6.7 to 30.9 mg/ℓ. This characterizes the water as moderately soft, making it excellent for laundering and most similar purposes, but also more corrosive or active toward piping and plumbing. The water is also low in total dissolved solids, between 26 and 59 mg/ℓ. The water is also low in chlorides, ranging from 4.2 to 19.8 mg/ℓ. These levels are typical for the Magothy aquifer and for a groundwater supply that has little potential for salt water intrusion.

- Containing very low levels of dissolved iron and manganese. The aesthetic secondary standard for iron and manganese is each established at 0.3 mg/ℓ, with 0.5 mg/ℓ the standard for the combination of both parameters. The oxidation of high levels of iron and manganese can result in "rusty" and "black" water consumer complaints, respectively. All wells except 4-1 and 4-2 exhibit iron concentrations at 0.2 mg/ℓ or less with 4-1 showing the highest concentration at 0.39 mg/ℓ. Wells BGD-1, 4-1, and 6-2 are the only wells to exhibit a detectable manganese level, with a concentration of 0.10 mg/ℓ in BGD-1.
- Moderate in nitrates. Nitrate concentrations throughout the District are considered moderate with six (6) of the wells above background levels. Well Nos. 7 and 8 at Plant No. 1 have had increasing nitrate concentration that will likely approach the drinking water standard of 10.0 mg/ℓ.

The most significant water quality issue which must be continually addressed by the District is VOCs. Based upon recent water quality monitoring data and trending, the potential exists for VOC contamination to continue to increase throughout the service area. This is due to the Northrop Grumman – Naval Weapons Industrial Reserve Plant contamination plume covering approximately 54 percent of the District service area (2.98 sq. miles out of the 5.56 sq. miles). The District presently utilizes wellhead treatment for VOC removal for eight of its nine operating wells. Well Nos. BGD-1, 4-1, 4-2, 5-1, 6-1, 6-2, 7 and 8 are treated with GAC filtration systems, and Well Nos. 4-1, 4-2, 5-1, 6-1 and 6-2 use air stripping for treatment. During 2017, all the District's nine active supply wells have shown detectable levels of VOCs (Table 2-7) in raw water samples; elevated VOC levels have been detected in Well Nos. 4-1, 4-2, 5-1, 6-1 and 6-2.

Trichloroethene (TCE) is the primary VOC detected in these wells. Plant No.4 showed elevated TCE detections as high as 275.0 µg/ℓ in 2017 (along with elevated levels of 1,1-Dichloroethane and cis-1,2-Dichloroethene) likely due to excessive VOC contamination located hydraulically

upgradient from the plant site, which the District addressed with the recent construction of a second air stripping tower and GAC polishing system. Recent raw water data from Plant No. 6 showed detections of TCE as high as 1,860.0 µg/ℓ and 1,1,2-Trichlorotrifluoroethane as high as 6.2 µg/ℓ. Plant No. 5 showed detections of TCE as high as 41.8 µg/ℓ and cis-1,2-Dichloroethene as high as 6.8 µg/ℓ in 2017; GAC filtration treatment was implemented in 2017 to address the rising VOC levels at Plant No. 5.

In accordance with the third Unregulated Contaminant Monitoring Rule (UCMR 3), the District's 2017 sampling program monitored the detection levels of 1,4-Dioxane, a synthetic organic compound. This emerging contaminant has been identified as a likely human carcinogen with detection hits located within several drinking water districts throughout Long Island. While 1,4-Dioxane was detected at all nine of the District's wells, none of the detection levels exceeded the maximum contamination level of 50 µg/ℓ. Plant Nos. 4, 5 and 6 showed slightly higher detection levels with maximum detections ranging from 9.4 µg/ℓ to 15.4 µg/ℓ, while Plant Nos. BGD, SPD and 1 showed lower detection levels with maximum detections ranging from 0.35 µg/ℓ to 1.2 µg/ℓ.

2.3 PROJECT DESCRIPTION

The District proposes to construct a new 2,000 GPM (2.88 MGD) supply well at the BGD plant site. The proposed location of the new plant site is approximately 275 ft. east of Plainview Drive on the west side of Bethpage State Park. The proposed well is approximately 1050 feet south of existing well BGD-1. BGD-1 is also approximately 1775 feet west-southwest of the SPD-1 well, which is approximately 2300 feet northeast of the proposed new well BGD-2.

Based on the proximity of the BGD-1 and SPD-1 wells screen interval depth, the BGD-2 well depth is estimated to be on the order of 700 feet below land surface (BLS), with a screened interval consisting of the bottom 100-150 feet, approximately. The water quality is very good at

this depth in the Magothy and production through the gravelly zones typically found at this depth in the area should provide the supply necessary.

The new supply well will lessen the impact on operation caused by deteriorating water quality at the District's other well sites and provide the necessary supplemental capacity to replace existing District supply wells threatened by increasing VOC contamination. This well is not proposed to increase aquifer withdrawal but is proposed for the District to manage its impacted supply well system. Based on a review of available USGS Hydrogeological maps, the proposed well depth will be set near the bottom of the Magothy formation. The following major design parameters will govern the design of the proposed well:

Depth:	685 feet minimum
Screened Interval:	580' to 680' with 5' sump
Riser and Screen Size:	16-inch nominal diameter
Casing Diameter:	24-inch
Pump Capacity:	2,000 GPM @ 350 feet TDH
Pump Motor:	250 HP

The new supply well will be housed in a new masonry structure, and will be equipped with a vertical turbine deep well pumping unit. Primary power will come from a vertical hollow shaft electric motor. In the event of a power failure, a stand-by diesel generator will power the pumping unit. Site piping will include a connection to the existing BGD plant. Electrical service at the well site will come from the existing distribution on Plainview Rd. Treatment for the raw water from new well will include sodium hydroxide for pH adjustment and calcium hypochlorite for disinfection.

Provisions for the protection of the wellhead include a 200-feet setback of the new well from the site property line and a 200-feet protective radius permitting no direct drainage possibly containing roadway runoff. A chain link fence will also be installed for security. This preliminary site plan as well as an outline of specifications require for construction of the proposed well may be viewed in Exhibit E.

The 2005 regulations of the New York State Department of Health on "Special Requirements for Wells Serving Public Water Systems", mandates specific separation distances between wells and potential discharges to the groundwater. Of concern is the discharge of storm water that may contain potentially deleterious materials (i.e., automotive oils, anti-freeze, gasoline, etc.) that could be introduced into the ground and impact a nearby well. Section 5-D.2a of the regulations states:

"Wells serving public water systems shall be located such that the owner of the water system possesses legal title to lands within 100 feet of the well and the owner controls by ownership, lease, easement or other legally enforceable arrangement, the land use activities with 200' of the well. Hydrogeologic evaluations and source water assessments should be used to determine appropriate separation from potential contamination sources."

The District currently has an easement of 7+/- acres of property at the Bethpage State Park. The grant of easement may be viewed in Appendix F.

Under the NYSDEC State Environmental Quality Review Act (SEQRA) as prescribed by 6 NYCRR Part 617, "Any project or action that would use ground or surface water in excess of 2,000,000 gallons per day (2.0 MGD)" is considered a Type I Action. With a proposed pumpage capacity of 2,000 GPM (3.0 MGD), the proposed well is considered Type I. Type I Actions are classified as an action that is more likely to have a significant adverse impact on the environment and require the submission of a Long Environmental Assessment Form (LEAF). No major

adverse impacts are foreseen with the construction of the new well. A completed version of the SEQRA LEAF is available in Appendix B of this report. The District plans to declare themselves Lead Agency and follow the guidelines of the SEQRA Handbook in the application and coordination of this review process.

Well construction will start immediately after the District obtains regulatory approval and satisfactory bids. A projected project schedule is summarized on Table 2-9. As summarized on Table 2-10, the estimated capital cost for this project is $4,500,000.00. This includes construction, contingencies, engineering, and legal fees. The final cost of the project will depend upon the economic conditions at the time of bidding.

As depicted on Exhibit E, the new well will be located approximately 200 feet off Plainview Rd. The Exhibit includes the new well, new building, site piping, and a driveway. Preliminarily, the well will be of partially double-cased construction consisting of 580 feet of 24-inch diameter outer casing, 100 feet of 16-inch diameter 50 slot screen and a 5' sump. A 100-foot 16-inch diameter riser will extend from the screen up into the 24-inch outer casing.

Prior to constructing the permanent well, a test hole with a minimum 10-inch diameter will be drilled to a terminal depth of no more than 700 feet below grade. Core samples will be taken every five feet starting at a depth of 400 feet. Gamma and electric logging of the test hole will also be undertaken. Pump testing of the selected screened zone will be performed based on the analysis of the core samples and logging results. It is anticipated that a 24-inch diameter steel outer casing will be installed to an approximate depth of 580 feet below grade and cement grouted outside the new casing. A 16-inch borehole will be drilled to the anticipated terminal depth of the permanent well. The area of the new screen setting will be under reamed to a 36-inch diameter to accommodate a 16-inch diameter screen and riser assembly. The proposed riser and screen assembly will be placed in a partially double cased configuration and will be gravel packed. The

16-inch 50 slot screen and riser assembly will have approximately 100 feet of stainless steel wire wrapped well screen.

The reverse rotary hydraulic method will drill the borehole to a depth of approximately 680 feet or the top of the Raritan clay. To obtain the final desired depth, the borehole will be backfilled. The expected bottom of the permanent well is approximately 685 feet from the finished floor of the new building. The water from the well development will be discharged to a local storm drain as required. The contractor performing the work will be required to obtain the appropriate permits for discharge of the development water.

2.4 ESTABLISHMENT OF NEED

2.4.1 NEW FACILITY TO EXPAND CAPACITY

A new facility to expand capacity is not the reason for this project. Pumpage may increase but not intentionally to expand capacity for the District.

2.4.2 NEW FACILITY TO REPLACE LOST CAPACITY

Although the District currently has adequate capacity, degrading water quality has become a concern and may jeopardize this capacity if wells need to be taken out of service. The proposed new well would provide capacity from a less impacted source which could result in a reduction in costs associated with treatment systems for contaminated wells.

2.4.3 ACQUISITION OF EXISTING WATER SUPPLY SYSTEM

An acquisition of new facilities is not part of this project.

3 ENVIRONMENTAL/HYDROGEOLOGIC SETTINGS

3.1 PROPOSED SCREENED INTERVAL

The proposed screened interval for BGD-2 Well will be a deep Magothy setting. The closest well to the proposed well site is Well No. BGD-1, located on the east side of Plainview Rd. Well BGD-1 was drilled to a depth of 682 feet below grade. The BGD-2 Well will be drilled to a depth of no more than 700 feet below grade (or until the Raritan clay is encountered), with a screened interval from 580 feet bls to 680 feet bls. Since the proximity of the well is within one mile (approximately 0.20 miles, 1,050 feet), the water quality and aquifer parameters can be expected to be similar.

3.2 INTERCONNECTIONS WITH OTHER WATER BEARING FORMATIONS

The geology of the Bethpage Water District area including the proposed well site is described as unconsolidated glacial deposits of the Pleistocene Epoch and Upper Cretaceous Period overlying crystalline bedrock. The bedrock is composed of metamorphic rocks formed between the Triassic and Carboniferous Periods, and slopes to the south at approximately 50 feet per mile. The bedrock has poor water-yielding potential in comparison to the overlying consolidated materials and therefore, no public supply wells are screened in this area. The bedrock located below the District is approximately 950 feet below sea level.

Directly on top of the bedrock lies the Lloyd sand member of the Raritan formation, consisting of beds of fine to coarse quartz, sand, and gravel, generally in a clay matrix and some interbedded sandy clay and clay. The thickness of this formation within the surrounding area of the well site is approximately 200 feet. The Lloyd is an artesian aquifer, overlain and confined by the Raritan clay.

This clay member of the Raritan reduces the potential for recharge of the Lloyd sand member and hydraulically confines the Lloyd aquifer, creating an artesian aquifer condition. The thickness of the clay member ranges from 70 to 180 feet. Because of the depth of the Lloyd formation and its relatively low hydraulic conductivity when compared to the Magothy formation, the Lloyd Aquifer has not been developed as a water supply source for the District. Therefore, no District wells are screened in this aquifer. In addition, use of the aquifer requires specific permission from NYSDEC.

The Magothy formation rests on top of the Raritan formation. The Magothy is approximately 700 feet thick beneath the BGD area. Upper portions of the Magothy consist of lenticular beds of very fine sand to medium sand, and beds of clay and sandy clay. In some locations, the Magothy becomes increasingly coarser with depth. These coarser areas of the Magothy form a second or intermediate aquifer. While the groundwater in the lower portions of the Magothy Aquifer is confined by the clay lenses in the upper part of the aquifer, it is believed that the Glacial and Upper Magothy Aquifers are hydraulically interconnected in several locations. The intermediate aquifer extends to approximately 800 feet below sea level. Beneath the District, the aquifer extends from 50 feet to 600 feet below MSL. The Magothy aquifer yields abundant quantities of generally high-quality water. However, in areas such as Bethpage where past industrial activity has impacted groundwater, the water quality in the Magothy aquifer has become marginal. All the District supply wells are screened in this aquifer.

The Glacial formation rests on top of the Magothy formation. The Glacial varies from approximately 90 to 120 feet thick beneath the District. Upper portions of the Glacial consist of glacial moraine deposits of sands and gravels, small boulders, silts, clay, and lake deposits. The Upper Glacial aquifer yields water of marginal quality, as it is most susceptible to contamination from surface sources, particularly nitrates and VOCs. No District wells are screened in this aquifer.

Exhibit D and Exhibit F show the hydrogeologic framework and cross sections of Long Island. Exhibit F shows the cross sections both east and west of the proposed well and shows the similarities in the hydrogeology.

Generally, the groundwater flow in the well site area is to the southwest direction for all three aquifers. The approximate horizontal rates of movement for groundwater in the three water-bearing units are summarized as follows (*Jensen and Soren 1974): the movement rate in the Upper Glacial aquifer is 0.5 feet per day, the movement rate in the Magothy aquifer is 0.2 feet per day, and the movement rate in the Lloyd aquifer is 0.1 feet per day.

These rates will increase dramatically to hundreds of feet per day near any pumping well screen.

3.3 Interconnections with Surface Water Bodies

There are no connections between the underlying aquifers and surface water bodies in the immediate vicinity of the site. However, the aquifers are ultimately connected to the Long Island Sound to the north and the south shore of Long Island to the south. Freshwater and tidal wetland maps were examined to determine impacts on wetland areas. Based on the desired location of the new supply well and radius of impact, there should be no impact on freshwater or tidal wetlands.

3.4 Proximity to Known or Suspected Contamination Sources

There are several locations both inside and adjacent to the District that have been sources of identified groundwater contamination. They include properties owned by Northrop-Grumman Corp., the United States Navy and Ruco Polymer Corp. These potential contamination sources are in or adjacent to the westerly and central portions of the District. Groundwater flow is in a south to southeasterly direction where Plant Nos. 4, 5 and 6 are directly in the path of the groundwater flow. A contamination plume has resulted in elevated levels of VOCs at these sites.

Supply wells in this area are equipped with treatment systems. The affected sites are in the south-west and central regions of the District. The proposed well is located away from the suspected plume in the north-east section of the District and should not be impacted by the plume. The map in Exhibit C shows the known District-wide contamination in relation to the current and proposed well sites. From the data used to create this map, we do not project the area leased for the proposed well being affected by the plume. The 2017 Annual Report for Groundwater Impacts at Naval Weapons Industrial Reserve Plant, Bethpage, NY indicates that an extensive plume of contamination of groundwater in the Magothy occurs to the west of the proposed well site. Using best available data, the new well location appears to fall about 2,200 feet outside of the eastern edge of the Navy Grumman Plume.

A Phase I Environmental Report was generated by Toxics Targeting, Inc. (Appendix D) investigating the known presences of several categories of government-reported toxic sites. Twenty-seven (27) toxic sites were identified in this investigation: two (2) NYSDEC inactive hazardous waste disposal sites, one (1) closed status tank failure, thirteen (13) closed status spills (unknown/other causes), six (6) closed status spills (miscellaneous causes), three (3) petroleum bulk storage sites, one (1) hazardous waste generator/ transporter, and one (1) chemical bulk storage facility. As shown here, there are five sites that are not inactive or closed; of these five sites, only two sites are not related to on-site operations of the existing BGD plant. Neither of these sites presents any imminent threat of contamination to the proposed well site.

A property owned by the New York State Department of Transportation has been identified as a hazardous waste generator/ transporter since 1994. The site is located at the intersection of the Seaford-Oyster Bay Expressway and Broadway in Bethpage NY, approximately 553 feet to the SSW of the proposed project site. According to the latest NYS DEC manifested waste summary for the site, the most recent waste quantities generated at the site are 7700 lbs of lead in 2009 and 1 cubic yard of lead in 1994.

Another site of concern is a property owned by the Bethpage Union Free School District, which is on the toxic site list for petroleum bulk storage. The site is located along Plainview Road at the Charles Campagne School in Bethpage NY, approximately 458 feet to the north of the proposed project site. The belowground storage tank has a 15,000-gallon capacity and contains fuel #2; it was installed in 1989 and is still in service at the school property.

3.5 PROXIMITY TO KNOWN OR SUSPECTED CONTAMINATED GROUNDWATER

Currently, the District has been impacted by contaminants leading to degraded water quality at certain plant sites. Eight of the District's nine wells have or will have treatment for nitrate and/or VOC removal. Well BGD-1, which is the closest well in proximity to the proposed location for Well BGD-2, has an ion exchange treatment system for the removal of perchlorate at levels ranging between 0 and 8.1 ug/ℓ. It is unknown whether water quality at the new well location is affected by contaminants of a similar nature. Furthermore, routine testing at Well BGD-1 does not show any imminent threat of an MCL exceedance for any regulated compounds of concern.

3.6 PROXIMITY TO OTHER SUPPLY WELLS

The nearest supply well to the proposed BGD-2 well is the BGD-1 well which is approximately 1,050 feet horizontal distance away to the north. Although the cones of depression for the wells may coincide at their closest separation from each other, the interference is expected to be negligible. Well calculations developed in Section 4.0 of this report found a common drawdown of 2.7 feet 1,178 feet from the proposed BGD-2 well and 657 feet from the BGD-1 well. Furthermore, the radius of impact does not consider District rainfall, which is anticipated to minimize interference effects. Using a rate of 50% infiltration[1] and an average annual rainfall of 44 inches, the District receives approximately 2.12 billion gallons per year of rainfall. Based on

[1] "Proceedings of the Conference on Water Quality on Long Island" sponsored by the Center for Regional Policy Studies and the Long Island Regional Planning Board. January 26, 1993.

this data and the pumpage data available in Table 2-3, the impact of a new 2,000 GPM supply well at the proposed site will be minimal or undetectable. This is especially true since the new well pumpage is intended to be replacement pumpage and not additional pumpage.

3.7 PROXIMITY TO SALTWATER INTERFACE

The location of the salt water interface is not precisely known but it is suspected to be some distance off shore both to the north and south. The new supply well will be a considerable distance from the suspected saltwater interface and therefore, will have little or no impact on the location of the interface.

3.8 RESULTS OF AQUIFER QUALITY TESTING

As previously discussed in Subsections 2.2 and 3.2, the water quality obtained from the deep Magothy formation at the nearby wells BGD-1 and SPD is generally of excellent quality. A complete set of laboratory results are presented in Appendix C.

3.9 PROJECTED WATER QUALITY AND YIELD

The screen depth proposed for the BGD-2 well is expected to encounter the strata as discussed earlier for the neighboring wells. The hydraulic properties of this strata can be presumably anticipated to facilitate relatively little variation from the test well characteristics to the fully developed production well.

As previously stated, water quality is expected to be excellent. Basic raw water treatment will include the addition of sodium hydroxide (caustic soda) for pH adjustment and sodium hypochlorite for disinfection.

The yield of the well at the proposed screened interval is expected to be excellent. The BGD-2 Well will be constructed with 100 feet of 16-inch diameter, 50-slot screen. Based on an anticipated

yield of 2,000 GPM, a conservative specific capacity of 20 GPM/ft of drawdown is expected. This corresponds to a drawdown of 100 feet. The open intake area of the screen will be 16,000 square inches[2] which results in an intake velocity of 0.040 feet per second for a flow of 2,000 GPM.

3.10 Driller's Log for Closest Well

In 2006 two test wells were installed on the proposed well sites as shown on Exhibit C – Site Plan & Survey. The test wells were installed approximately 15 feet apart. Well #1 was installed closest to BGD-2 to a depth of 700 feet with 60 feet of well screen. A 254 GPM pumping rate test resulted in a specific capacity of 5.9 GPM/ft-drawdown. Well #2 was installed furthest from BGD-2 to a depth of 570 feet with 60 feet of well screen. A 254 GPM pumping rate test resulted in a specific capacity of 9.4 GPM/ft-drawdown. However, the test wells were not designed to obtain hydraulic characteristics, but rather water quality information. The specific capacity for the permanent well is expected to be more closely related to that of BGD-1, which was last tested in March 2009 at a specific capacity of 45 GPM/ft. Therefore, the conservative estimate of 20 GPM/ft now is appropriate.

4 ENVIRONMENTAL/HYDROGEOLOGIC IMPACTS

4.1 Cone of Depression and Zone of Capture

The best available method to assess the characteristics of the proposed screen setting for the well is through the pumping of a test well. The construction of the BGD-2 well will include test pumping of the proposed screen areas based on core sampling and results of the test bore. Much

[2] "Groundwater & Wells – Third Edition". Johnson Screens. A Weatherford Company. Page 8.

information can be inferred from previous pump tests conducted on wells BGD-1 and SPD and general information for the Magothy aquifer.

The average hydraulic conductivity of the Magothy formation is 3,366 FT/D at an average thickness of 700 FT for the Central portion of Nassau County (McClymonds & Franke (1972)). It should be noted that these parameters may vary significantly between locations due to changes in the thickness of the aquifer. At the proposed new well location, it is assumed that the geology will be similar to the nearby BGD-1 and SPD wells.

An analysis of the estimated effects of pumping at the new well was made using the Theis approach for confined aquifers, as defined below.

Eq. 1: $$s = \frac{Q}{4\pi T} W(u)$$

Eq. 2: $$u = \frac{r^2 S}{4Tt}$$

Where:

- *s* is the drawdown (change in hydraulic head at a point since the beginning of the test),
- *u* is a dimensionless time parameter,
- *Q* is the discharge (pumping) rate of the well (volume divided by time, or m^3/s),
- *T* and *S* are the transmissivity and storativity of the aquifer around the well (m^2/s and unitless, respectively),
- *r* is the distance from the pumping well to the point where the drawdown was observed (m),
- *t* is the time since pumping began (seconds), and

- *W(u)* is the "Well function" (also known as the called the exponential integral, E1, in mathematics).

The well function is approximated by the infinite series:

Eq. 3: $$W(u) = -0.577216 - \ln(u) + u - \frac{u^2}{2x2!} + \frac{u^3}{3x3!} - \frac{u^4}{4x4!} + \cdots$$

In strict terms the Theis approach is based on the following assumptions:

(1) the flow in the aquifer can be adequately described by Darcy's law,

(2) the aquifer is homogeneous, isotropic, and confined,

(3) the well is fully penetrating,

(4) the well has no storage,

(5) the well has a constant pumping rate, Q,

(6) the head loss over the well screen is negligible,

(7) the aquifer is infinite in radial extent,

(8) the top and bottom boundaries of the aquifer are horizontal, flat, impermeable (non-leaky),

(9) the groundwater flow is horizontal, and

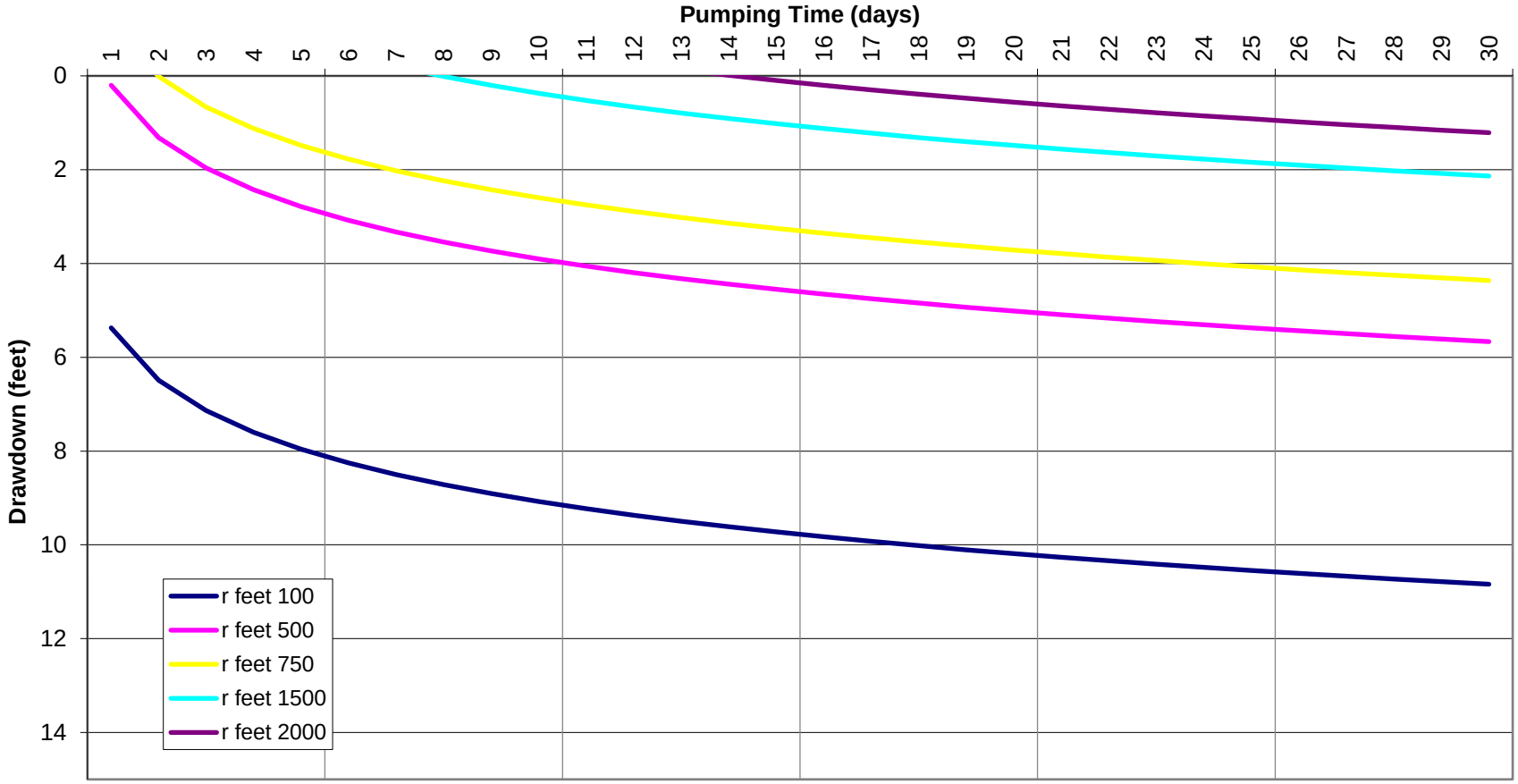
(10) all changes in the potentiometric surface are the result of the pumping well alone.

Rarely in practice are these assumptions fully met, yet the Theis equation still can yield excellent results for single pumping well analysis, if the governing assumptions are taken in context. Extrapolating the geological information from the nearby BGD-1 and SPD wells, all the above assumptions are reasonably met for the high permeability gravel zone we expect to encounter from approximately 580 feet bls to 680 feet bls. In terms of screen penetration, the well is planned to be screened through that entire interval. The above the gravel zone, a much less conductive sand exists, which for the purposes of these calculations is the confining layer.

Equations 1 through 3 were used to estimate the drawdown at the new well location, using the following parameter values: Q = 2,000 GPM, T = 18,700 FT^2/DAY, S = 0.2 (dimensionless), and t = 30 DAYS. The equations were solved for in an Excel spreadsheet originally developed at the Utah Division of Water Rights, by Matt Linden. Other similar spreadsheets are widely available and free, from the USGS and universities.

The results are shown in the plot below. For a pumping time of 30 days, at the maximum rate of 2000 GPM, the Theis approximation shows a predicted drawdown of approximately 11 feet from static levels at 100 feet from the pumping well. In the far field, at 2,000 feet from the pumping well, it is predicted that a drawdown of approximately 1 foot will occur, under the same conditions of pumping and time. Results for distances in between 100 and 2,000 feet from the well are also shown: specifically, for radii of 500 ft, 750 ft, and 1,500 ft, respectively. These drawdowns, in magnitude, fall in between the 100 ft and 2,000 ft curves.

The transmissivity (T) and/or hydraulic conductivities (K) for the sands and gravels comprising the portion of the Magothy proposed for the new well are well known from the literature. Based on the test well and installed well at SPD (completed in 2013), the performance characteristics and related hydrogeologic parameters were applied in the above calculations for the new well.



Estimated Drawdown at the New BGD-2 Well for Specified Distances Away from the Well. Pumping at 2000 GPM for 30 DAYS.

A conservative specific capacity of 20 GPM/ft of drawdown is assumed when estimating the drawdown of the proposed well screen setting. The design flow of 2,000 GPM and use of a 16-inch diameter screen will result in a drawdown of approximately 100 feet.

4.2 Impact on Water Bearing Formation

The water bearing formation which will be influenced by the project is the Magothy aquifer. The influence on the aquifer is expected to be minimal.

4.3 Impact on Surface Water

There are no surface water bodies in the District. The closest surface water body is the Long Island Sound. The project will have no impact on surface water bodies. Additionally, freshwater and tidal wetland maps were examined to determine impacts on surrounding wetland areas. Since there are no wetlands within several miles of the proposed location for the new supply well, no impacts on freshwater or tidal wetlands are anticipated.

4.4 Induced Migration of Contaminants

The best available data indicate that there will be no migration of contaminants induced by this project.

4.5 Induced Migration of Contaminated Groundwater

A plume of TCE groundwater contamination is known to exist to the west of the BGD site. The plume is comprised mostly of VOC's coming from the former Navy-Grumman plant in Bethpage. The nearest wells in the Navy-Grumman plume are shown in the table. Each well is between 1 and 2 miles away from the proposed new well.

Well ID:		1	3R	17	18	19
Measuring Point Elevation (ft msl)		116.78	115.28	104.10	110.00	108.70
Water Level Elevation (ft msl)		27.78	29.68	37.40	44.20	44.40
Screen [2] Interval	Top (ft msl)	Unavailable	Unavailable	-375	-353	-355
	Bottom (ft msl)	Unavailable	Unavailable	-458	-457	-507
Horizontal Distance to BGD-2 (ft) [3]		7724	7855	7794	6436	5608
Quarterly TCE Concentration (ug/l)		608	362	116	45	118
Quarterly TVOC Concentration (ug/l)		650	410	150	68	140

The best available data indicate that there will be no migration of contaminated groundwater induced by this project. The known elevations (above mean sea level) of the screened intervals of the nearest OU-2 wells are generally above the proposed new well screened interval (approximately -480 ft msl to -580 ft msl) and are also to the southwest and downgradient of proposed well.

4.6 Impact on Wells

The nearest supply well to the proposed well site is the District's BGD-1 well which is located 1,050 feet away. Well performance calculations were run for both wells. Although the cones of depression for the wells were found to coincide at their closest separation from each other, the interference is expected to be negligible. Well calculations predict approximately an additional 5 feet of drawdown at the BGD-1 well due to pumping at the new well. Furthermore, the radius of impact does not consider District rainfall, which is anticipated to minimize interference effects. The proposed well should have little impact upon the performance of BGD-1. The next closest well is located at SPD, over 2,300 feet distant where little impact is anticipated. There is no expected impact on any other wells in the surrounding area.

4.7 IMPACT ON SALTWATER INTERFACE

Due to an approximate ten (10+) mile distance of the assumed saltwater interface from the proposed well site, the project will not have an adverse impact on the flow regimen at the saltwater interface.

4.8 OTHER IMPACTS

No other environmental or hydrogeologic impacts are foreseen with the exception of short term construction impacts experienced during the approximately 6 months of construction of the facility.

5 UNAVOIDABLE NEGATIVE ENVIRONMENTAL & HYDROGEOLOGIC IMPACTS

In accordance with SEQR regulations 6 NYCRR Part 617, the proposed 2,000 GPM well was assessed and determined to be a Type I Action. According to Section 617.4 .6.ii, a project or action that would use ground or surface water in excess of 2,000,000 gallons per day is considered a Type I Action. Type I Actions are considered actions with a greater risk of adverse impacts on the environment and require an extensive assessment of the relevant concerns and impacts.

A Long Environmental Assessment Form (LEAF) was completed to identify potential negative impacts associated with the construction of the proposed BGD-2 well. It was determined that because of the nature of this project and the location chosen, there are no risks for major environmental impacts. This includes social and economic impacts. Appendix B contains the completed LEAF form which shows the minimal short-term construction and other minimal impacts that may result from this project.

6 ALTERNATIVES TO PROPOSED ACTION

6.1 WATER CONSERVATION

The District fully supports water conservation measures. In April 2017, the District produced a Water Conservation plan, as part of the required annual submission to NYSDEC (Appendix E - Water Conservation Plan). The program includes source water inventory, water usage and metering, water supply auditing, leak detection and repair, and water use reduction. The District makes every effort to conserve water through their water conservation program. With the District consisting of mostly single-family homes, lawn and garden irrigation is a significant portion of the water use. The District proposes to continue with public education to allow property owners (and their landscapers) to irrigate with the proper amount of water and not over-irrigate, as well as continue to enforce odd-even sprinkling requirements.

Stricter water conservation alone, however, would not be practical for offsetting degrading water quality. If the District were to take more supply wells off line due to poor quality, conservation alone would not be adequate to meet peak demands.

6.2 WATER IMPORTATION

Water importation is not considered a feasible alternative for the District. Interconnections to adjacent water suppliers are for emergency purposes only. If trends in elevated contamination continue at existing sites, additional wells may need to be taken off-line, resulting in the needed capacity for the proposed well. The surrounding interconnected water suppliers would not be able to adequately supply water to the District at the same capacity of the proposed supply well.

6.3 INCREASED STORAGE

Increased storage facilities do not address water quality concerns. The District currently has adequate available water supply capability from wells and storage to meet demand on peak days and thus, increased storage is not an adequate alternative for the District.

6.4 WATER TREATMENT

District Well No. 9 was abandoned due to poor water quality. The well was a shallow well and was taken out of service in 1991 due to continually experiencing excessive levels of nitrates beyond the MCL. Plants 4, 5 and 6 are also threatened by very high levels of contaminants. Additional treatment may not be sufficient should increasing contamination levels persist. The District is at risk of losing a supply capacity of 4.0 MGD at Plant 4, 2.0 MGD at Plant 5, and 4.0 MGD at Plant 6. Since the other four wells are currently in operation, water treatment of out of service existing wells is not an option.

6.5 ALTERNATIVE LOCATIONS

A new well site study is being prepared to identify land that is outside the plume and available. Since this land meets the requirements and is available to mitigate the 10 MGD of potentially lost capacity the District is desirous of proceeding with this location post haste. The proposed site is deemed the most viable location for producing high water quality. Much of the District is affected by the Navy/Northrop Grumman contamination plume, therefore, land in these areas would not provide quality water without costly treatment systems. The location of the proposed well (Exhibit E) appears to outside of and to the east of the boundary of the Navy/Northrop Grumman plume, and therefore, is anticipated to provide quality water in the future.

6.6 SHALLOWER SCREENED INTERVALS

The best available data indicates that the Magothy formation in this location will provide high water quality. All eight of the District's active wells are screened in the Magothy formation at depths over 500 feet, as that interval has in the past provided the best water available to the District. The District's shallowest well, Well No. 9, was abandoned due to excessively poor water quality. Due to contamination concerns and poor water quality, the District does not consider it appropriate to propose a well screened at a shallow interval.

7 MITIGATING MEASURES TO MINIMIZE ENVIRONMENTAL EFFECTS

7.1 MONITORING PLAN PROPOSAL

The BGD-1 well and the SPD well are within approximately 1000 feet and 2300 feet of the proposed new well, respectively. BGD-1 was installed in 1980, was 682 feet deep, and was screened through 2 intervals totaling 55 feet from 616 feet bls to 677 feet bls. The SPD well was completed in 2013 and is 660 feet deep. SPD has 60 feet of screen, starting at 590 feet bls. The land surface elevation between the BGD site and the SPD site is approximately the same, so it is reasonable to assume that the geology at depth in the new well's proposed location will be of similar quality and quantity as the BGD-1 and SPD wells. Both of these wells demonstrated quality water results in 2017 (Table 2-7), with no compounds detected above MCL's.

Upon the completion of construction, the new BGD well will be sampled in accordance with the New York State and Nassau County Department of Health requirements for pesticides, herbicides, organic contaminants, inorganics, radionuclide and bacteria. All results will be

reported to the Health Department and approval obtained before placing the well into operation on the system.

7.2 Balance of Pumping

The District will endeavor to minimize pumpage from all its wells through continued water conservation measures. This will balance aquifer demands throughout the system as well as allow for a greater pumpage from quality water yielding wells versus wells being treated for contamination. It is expected that the wells would run simultaneously only during peak demand periods of the summer or when a high capacity well is out of service. Due to the larger capacity of the proposed well and its expected economic benefits in operating costs, it is anticipated that this well will run at full capacity most of the year with minimized pumpage from wells treated for contamination.

7.3 Water Conservation Program

The District strongly supports water conservation. Water conservation alone is not considered practical for addressing the concerns of degraded water quality. If the District were to shut off additional wells due to poor water quality, water conservation alone would not be sufficient to meet the peak demands of the District. The District will maintain its water conservation plan by continuing public education, metering and following the 2017 Water Conservation Plan submitted by the District to NYDEC. Newsletters and flyers will still be sent out several times during the year to suggest water conservation, especially for irrigation. In addition, the District will continue to enforce odd-even irrigation restrictions.

8 GROWTH INDUCING ASPECTS

The scope of this project includes construction of a new supply well facility to address water quality and operational issues due to contamination at five of the District's nine active supply wells. The groundwater withdrawal quantities will continue to meet the needs of the existing population and commercial service connections and not future service connections, so aquifer withdrawal is expected to be unchanged. As documented in the District Master Plan dated 2004, the District's residential and commercial zoned land is nearly fully developed. The intent of new supply well construction does not anticipate induced growth in the residential or commercial sectors. The project will not exhibit a growth inducing influence since the service area is already well developed.

9 LIST OF RELATED STUDIES, REPORTS, DATA, ETC.

1) Driscoll, FG, "Groundwater and Wells." Johnson Filtration Systems, Inc., St. Paul, Minnesota, 1986.
2) Gray. "Principles of Hydrology." Water Information Center.1979.
3) Holzmacher, McLendon, & Murrell, P.C., "Annual Water Supply." Bethpage Water District, January 2017.
4) Holzmacher, McLendon, & Murrell, P.C., "2015 Capital Improvements Plan". Bethpage Water District, October 2015.
5) Holzmacher, McLendon, & Murrell, P.C., "Engineering Report: Master Water Plan". Bethpage Water District, December 2004.
6) Jensen, H.M. and Soren, Julian. "Hydrogeology of Suffolk County, Long Island, New York." United States Geological Survey Hydrologic Atlas. United States Department of the Interior, 1974.

7) McClymonds N.E., O.L. Franke, “Water Transmitting Properties of Aquifers on Long Island, New York.” United States Geological Survey Professional Paper 627-E. United States Government Printing Office, Washington D.C., 1972.

8) McClymonds N.E., O.L. Franke, “Summary of the Hydrogeologic Situation of Long Island, New York as a Guide to Water Management Alternatives.” United States Geological Survey Professional Paper 627-F. United States Government Printing Office, Washington D.C., 1972.

9) New York State Department of Environmental Conservation, “Chapter 5 -Resources Management Services Part 602: Application for Long Island Wells”. Department of Conservation, Albany, NY, 1996.

10) New York State Department of Environmental Conservation, “6 NYCRR 617: State Environmental Quality Review”. Environmental Impact Assessment of New York State. Department of Conservation, Albany, NY, 1996.

11) New York State Department of Health. “Part 5 – Drinking Water Supplies. Statutory Authority: Public Health Law, Section 225.” State Sanitary Code (NYCRR Title 10). Bureau of Public Water Supply Protection, Troy, NY, 2004.

12) Smolensky, D.A., Buxton and Shernoff. “Hydrogeologic Framework of Long Island, New York.” United States Geological Survey. United States Department of the Interior, 1989.

10 CONCLUSIONS AND RECOMMENDATIONS

- The new well construction is currently the only viable alternative that can be completed within an acceptable time. The construction of the well must proceed as soon as possible in order to provide quality water devoid of Navy-Grumman plume constituents prior to any potential loss of existing well capacity.

- Water quality at the proposed plant site is expected to be excellent, as the proposed location does not fall within the known extent of the Grumman Plume.
- No contamination migration is expected to be induced by the well construction.
- No negative impacts are foreseen from the construction of the BGD-2 well.

In accordance with the conclusions stated above, we recommend the following:

It is recommended that copies of this report along with the Well Permit Application be forwarded to the New York State Department of Environmental Conservation and Nassau County Health Department for their concurrent review as soon as possible.

- The State Environmental Quality Review (SEQR) Long Environmental Assessment Form (LEAF) has also been submitted to address concerns associated with a Type I Action. The District does not foresee any major environmental impacts associated with this construction and plans to nominate themselves as the Lead Agency for this project.
- The District should direct counsel to begin the process of obtaining a modified/extended easement agreement from New York State.
- It is recommended plans and specifications be prepared for the well construction concurrent with the New York State Department of Environmental Conservation review period.

TABLES

TABLE 2-1 SUMMARY OF SUPPLY WELL FACILITIES

Table 2-1

Bethpage Water District
Summary of Supply Well Facilities

Water District Well No.	Year Placed in Service	NYSDEC No.	Plant Location	Plant Coordinates (GIS)		Formation	Terminal Depth (Feet)	Authorized Capacity (GPM)	Authorized Capacity (MGD)	Actual Capacity (MGD)
				X	Y					
BGD-1	1979	N-9591	Plainview Road	40.7566	-73.4735	Magothy	607	1,400	2.02	1.73
SPD-1	2014	N-14110	South Park Drive	40.7589	-73.4675	Magothy	705	2,000	2.88	2.88
4-1	1969	N-6915	Sophia Street	40.7337	-73.4750	Magothy	608	1,400	2.02	2.02
4-2	1971	N-6916	Sophia Street	40.7332	-73.4750	Magothy	611	1,400	2.02	1.76
5-1	1965	N-8004	Broadway	40.7289	-73.4774	Magothy	740	1,400	2.02	1.77
6-1	1951	N-3876	Park Lane	40.7314	-73.4862	Magothy	386	1,400	2.02	2.02
6-2	1972	N-8942	Park Lane	40.7315	-73.4857	Magothy	775	1,400	2.02	1.7
7	1971	N-8767	Adams Avenue	40.7589	-73.4800	Magothy	655	1,400	2.02	1.76
8	1971	N-8768	Adams Avenue	40.7593	-73.4796	Magothy	682	1,400	2.02	1.66
9	1956	N-6078	Adams Avenue	40.7598	-73.4797	Magothy	280	N/A	N/A	0*

Notes:
1. GPM - Gallons per Minute
2. MGD - Million Gallons per Day
3. * - Well No. 9 was abandoned in 2010

TABLE 2-2 SUMMARY OF STORAGE FACILITIES

Table 2-2

Bethpage Water District
Summary of Storage Facilities

Tank No.	Plant No.	Plant Location	Style	Capacity (MG)
1	Plant No. 1	Adams Avenue	Elevated Steel	1.25
2	Plant No. 4	Sophia Street	Pre-stressed Concrete Ground	1.5
3	Grumman Road Plant	Grumman Road	Elevated Steel	1.5
4	Plant BGD	Plainview Road	Pre-stressed Concrete Ground	2
			TOTAL	6.25

Notes:
1. MG - Million Gallons

TABLE 2-3 SUMMARY OF WATER MAIN SIZES AND LENGTHS

Table 2-3

Bethpage Water District
Summary of Water Main Sizes and Lengths

Main Size	Footage	Miles
4" or under	1,092	0.21
6"	406,324	76.96
8"	105,567	19.99
10"	14,175	2.68
12"	42,450	8.04
14"	5,707	1.08
16"	36,421	6.90
20"	3,872	0.73
TOTAL	615,608	116.59

TABLE 2-4 SUMMARY OF INTERCONNECTIONS

Table 2-4

Bethpage Water District
Summary of Interconnections

Supplier	High Water Level (ft)	Location	Size (in x in)
South Farmingdale Water District	205	Stewart Avenue	6 x 6
		Plainedge Drive	6 x 6
		Shelly Lane	6 x 6
		Frey Road	6 x 6
		Bernhard Street	6 x 6
Plainview Water District	315	South Park Drive	6 x 6
		Harold Court & Gerhard Road	6 x 6
		Stewart Avenue & Belmont Avenue	6 x 6
Hicksville Water District	307	South Oyster Bay Road & Stewart Avenue	6 x 6
		Hicksville Road	6 x 6
		Grumman Road	6 x 6
Levittown Water District	236	Universe Drive & Celestial Lane	6 x 6
		North Wantagh Avenue & Mallard Road	6 x 6
		Berger Avenue	6 x 6
Inc. Village of Farmingdale	220	Hampshire Drive	6 x 6

TABLE 2-5 SUMMARY OF RECENT WITHDRAWAL DATA

Table 2-5

Bethpage Water District
Summary of Recent Withdrawal Data

Date	Yearly Pumpage (MG)	Average Day (MGD)	Maximum Day (MGD)	Maximum Day to Average Day Ratio	Maximum Day + 3,500 GPM Fire Flow (MGD)
2007	1,250.92	3.43	7.49	2.18	8.75
2008	1,196.20	3.28	7.83	2.39	9.09
2009	1,225.77	3.36	6.70	1.99	7.96
2010	1,581.14	4.33	9.59	2.21	10.85
2011	1,392.28	3.81	9.57	2.51	10.83
2012	1,430.24	3.92	8.07	2.06	9.33
2013	1,507.66	4.13	8.40	2.03	9.66
2014	1,503.11	4.12	7.97	1.94	9.23
2015	1,532.62	4.20	7.94	1.89	9.20
2016	1,561.02	4.28	8.47	1.98	9.73
2017	1,468.27	4.02	8.56	2.13	9.82

Notes:
1. MG - Million Gallons
2. MGD - Million Gallons Per Day
3. Based on fire flow duration of six (6) hours (1.26 MG)

TABLE 2-6 ANALYSIS OF WATER NEEDS

Table 2-6

Bethpage Water District
Analysis of Water Needs

1. Maximum System Demand for Maximum Day Between 2007-2017 **= 9.59 MGD**

2. Authorized Well Capacity (2017) **= 13,200 GPM**
= 19.04 MGD

Assume: 100% Available to Meet Demand
100% Utilization

3. Available Capacity Calculations for Typical Water Supply System: 80% utilization and assume largest plant (Plant 4 at Sophia Street) out of service (2,800 GPM)

	13,200 GPM			
-	**2,800 GPM**	(minus largest unit)		
	10,400 GPM			
x	80%	(80% utilization)		
	8,320 GPM		**=**	**11.98 MGD**

Effective Capacity	**=**	**11.98 MGD**
Maximum Day Demand	**=**	**9.59 MGD**
Current Available Capacity	**=**	**2.39 MGD**

4. Plants 4, 5 and 6 will likely be rendered unusable due to contamination; recalculate available capacity with wells 4-1, 4-2, 5-1, 6-1 and 6-2 offline (7,000 GPM total), 80% utilization and largest plant (SPD Plant) out of service (2,000 GPM)

	6,200 GPM			
-	**2,000 GPM**	(minus largest unit)		
	4,200 GPM			
x	80%	(80% utilization)		
	3,360 GPM		**=**	**4.84 MGD**

Effective Capacity	**=**	**4.84 MGD**
Maximum Day Demand	**=**	**9.59 MGD**
Future Available Capacity	**=**	**- 4.75 MGD**

Note:
1. GPM – Gallons per Minute
2. MGD – Million Gallons per Day
3. Storage capacity and fire flow requirements not utilized in deficit calculation for source water supply

TABLE 2-7 2017 RAW WATER QUALITY RESULTS

Table 2-7

Bethpage Water District
2017 Raw Water Quality Results

2017 Inorganic Water Quality Data

	MCL	DL	BGD-1	SPD-1	4-1	4-2	5-1	6-1	6-2	7	8	9
pH*	-	-	5.9	5.9	5.3	5.5	5.5	5.5	5.8	5.7	5.7	-
Chloride (mg/L)	250.0	1.0	9.5	4.2	19.8	11.5	4.4	11.3	6.1	13.5	9.5	-
Copper* (mg/L)	1.30	0.02	0.07	0.00	0.09		0.02	0.05	0.01	0.02	0.01	-
Iron (mg/L)	0.30	0.02		0.03	**0.39**	0.27	0.05	0.08	0.09	0.03		-
Total Hardness (mg/L)	-	1.0	21.5	10.8	17.4	14.5	6.7	12.6	10.4	30.9	19.7	-
Manganese (mg/L)	0.30	0.01	0.10		0.01				0.02			-
Nitrate (mg/L)	10.0	0.1	6.1	4.7	4.1	4.0	1.3	4.4	3.2	8.0	4.8	-
Lead** (ug/L)	15.0	1.0	6.5		2.8			5.3		1.0		-
Total Dissolved Solids (mg/L)	-	5.0	50.0	26.0	59.0	47.0	27.0	63.0	27.0	58.0	34.0	-
Perchlorate (ug/L)	18.0	1.0	8.1	6.8			2.0	4.4	3.3	7.2	6.5	-

Notes:
1. MCL - Maximum Contamination Level
2. DL - Detection Limit
3. ⧅ - Not Detected
4. **BOLD** - MCL Exceedance
5. No data collected at offline Well No 9

* reports average pH level for raw water

Table 2-7 (Cont'd)

Bethpage Water District
2017 Raw Water Quality Results

2017 Volatile Organic Compound and Pesticide Water Quality Data

	MCL	DL	BGD-1	SPD-1	4-1	4-2	5-1	6-1	6-2	7	8	9
1,1-Dichloroethene (ug/l)	5.0	0.5	0.5		4.2	2.9			3.7			-
1,1-Dichloroethane (ug/l)	5.0	0.5	2.0	0.6	**6.1**	3.9			1.8	1.1	0.7	-
cis-1,2-Dichloroethene (ug/l)	5.0	0.5			**53.3**	**38.8**	**6.8**		2.6			-
1,1,1-Trichloroethane (ug/l)	5.0	0.5			2.2	1.2		0.6				-
Carbon Tetrachloride (ug/l)	5.0	0.5				0.9			1.5			-
1,2-Dichloroethane (ug/l)	5.0	0.5			1.9	2.7	0.5					-
Trichloroethene (ug/l)	5.0	0.5			**183.0**	**275.0**	**41.8**	**38.1**	**1860.0**	0.6		-
1,1,2-Trichloroethane (ug/l)	5.0	0.5							0.7			-
1,1,2-Trichlorotrifluoroethane (ug/l)	5.0	0.5						0.9	**6.2**			-
Tetrachloroethene (ug/l)	5.0	0.5						3.8	2.2			-
1,4 Dioxane (ug/l)	50.0	0.7	1.7	0.4	11.7	15.4	9.4	13.6	11.1	0.7	0.4	-

Notes:
1. MCL - Maximum Contamination Level
2. DL - Detection Limit
3. [ ] - Not Detected
4. **BOLD** - MCL Exceedance
5. No data collected at offline Well No 9
6. Samples not tested for pesticides

TABLE 2-8 2017 TOP TEN WATER USERS

Table 2-8

Bethpage Water District
2017 Top Ten Water Users

Name	Service Address	Annual Consumption (x-1000 gal)	Use
1. St. Joseph Hospital	4295 Hempstead Turnpike	26,415	Hospital
2. Cablevision	1111 Stewart Avenue	7,581	Office
3. Bethpage Community Park	1001 Stewart Avenue	7,233	Recreation
4. Bethpage Schools	10 Cherry Avenue	7,091	Education
5. Sterling Equities	999 Stewart Avenue	6,822	Office
6. Steel Los III	700 Hicksville Road	6,302	Manufacturing
7. Nassau Steel LLC	999 S. Oyster Bay Road	6,188	Manufacturing
8. Bethpage State Park	99 Quaker Meeting House Road	5,891	Recreation
9. Cablevision	1111 Stewart Avenue	4,953	Office
10. Bethpage Federal Credit Union	899 S. Oyster Bay Road	4,102	Office

Source: Bethpage Water District

TABLE 2-9 PROPOSED PROJECT SCHEDULE

Table 2-9

Bethpage Water District
Proposed Project Schedule

Task	Tentative Date
A) Submission of new supply well application for regultory review	July 2018
B) Submit design plans and specifications for regulatory review	October 2018
C) Receive regulatory comments for approval on application and design documents	February 2019
D) Procure bids for construction of new well facility	April 2019
E) Commence construction	June 2019
F) Complete construction	June 2020

TABLE 2-10 PRELIMINARY COST SCHEDULE

Table 2-10

Bethpage Water District
Preliminary Cost Schedule - BGD-2 Well

Item No.	Description	Total Price
Construction Costs		
1	Bonds and insurances	$100,000.00
2	General conditions	$20,000.00
3	Construction of new water supply well	$750,000.00
4	Excavation, sub-grad preparation, grading, restoration	$50,000.00
5	Drainage piping / blow-off system	$100,000.00
6	Paving, sidewalks, aprons and curbs	$75,000.00
7	Site watermain (pipe, valves, fittings)	$150,000.00
8	Concrete (foundations)	$200,000.00
9	Masonry treatment building (1,600 sf at $325. / sf)	$520,000.00
10	Well pump	$100,000.00
11	Installation of chemical treatment systems	$150,000.00
12	Large piping, valves , and appurtenances	$100,000.00
13	Small piping, valves, and appurtenances	$30,000.00
14	New motor control centers for well starter*	$400,000.00
15	Electrical controls and instrumentation	$250,000.00
16	New generator	$400,000.00
17	New electrical service	$200,000.00
	CONSTRUCTION TOTAL:	**$3,595,000.00**
Non-Construction Costs		
1	Engineering, Permits, Design & Construction Administration and Construction Inspection (15%)	$539,250.00
2	Legal (2%)	$71,900.00
3	Contingencies (10%)	$359,500.00
	NON-CONSTRUCTION TOTAL:	**$970,650.00**

PROJECT TOTAL:	**$4,565,650.00**

*Treatment is planned at existing BGD plant

TABLE 2-11 ANALYSIS OF ACCOUNTED FOR WATER

Table 2-11

Bethpage Water District
Accounted for Water Analysis

Date (Year)	Gallons Billed (thousands of gal)	Gallons Pumped (thousands of gal)	% Accounted for Water
2017	1,278,054	1,462,702	87.4
2016	1,396,648	1,561,018	89.5
2015	1,361,663	1,532,619	88.8
2014	1,443,564	1,503,111	96.0
2013	1,226,072	1,507,661	81.3
2012	1,254,654	1,430,238	87.7
2011	1,308,654	1,392,280	94.0
2010	1,400,730	1,581,140	88.6
2009	1,135,155	1,225,774	92.6
2008	1,237,197	1,196,200	103.4

Notes:

Formula: $$\%\ Accounted\ for\ Water = \frac{Gallons\ Billed}{Gallons\ Pumped}$$

APPENDICES

APPENDIX A DIVISION OF WATER, TECHNICAL, AND OPERATION GUIDANCE SERIES (3.2.2)

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-3500

Thomas C. Jorling
Commissioner

August 13, 1990

MEMORANDUM

TO: Regional Water Engineers, Bureau Directors, Section Chiefs

SUBJECT: Division of Water Technical and Operational Guidance Series (3.2.2) ENGINEER'S REPORTS: APPLICATIONS FOR WATER SUPPLY AND LONG ISLAND WELL PERMITS (Originator: Phil Barbato, P.E.)

I. Purpose

The purpose of this memorandum is to establish the minimum information which will be required in engineer's reports submitted by applicants for Water Supply (well) and Long Island Well permits, and to set forth an acceptable format for organizing the information in these reports.

II. Discussion

Long Island's groundwater is a limited resource which must be carefully managed. Decisions concerning use of the resource must consider prevention of saltwater intrusion, prevention of contaminant migration between and within aquifer(s), protection of surface water resources, and continued availability of groundwater for future use.

Authority for regulating withdrawals is based in Article 15, Title 15 of the Environmental Conservation Law, and administered through 6NYCRR Part 601 (Water Supply Applications) and Part 602 (Long Island Wells). NYSDEC is responsible for the quantity and quality aspects of groundwater (in the environment), while NYSDOH is responsible for quantity and quality aspects of water from the well casing, through the treatment and distribution system, to the consumer's tap. Withdrawal applications for public supply wells are reviewed jointly by both departments for public necessity, alternate sources, proper and safe construction, sanitary control, watershed protection, and adequacy of supply.

Authority for requiring an engineer's report for Long Island well applications is based specifically in 6NYCRR Part 602.3(d) (3), and for water supply well applications in 6NYCRR Part 601.5(f).

The regulated community on Long Island often requests guidance as to the information and organization of engineer's reports required by NYSDEC. This guidance is intended to clarify engineer's report requirements and avoid submission of reports in which significant issues are overlooked.

NYSDEC review of water supply well and Long Island well applications is performed in a more efficient and timely way when accompanying engineer's reports are complete on first submittal, and organized properly. The regulated community desires timely response from the department, and seeks any guidance which the agency can provide which would facilitate this timely response.

III. **Guidance**

The attached outline sets forth the minimum information which will be required for engineer's reports submitted by applicants for water supply well and Long Island well permits. This guidance will be used by department personnel as a checklist in assuring that engineer's reports are complete.

Content: The information (issues) to be included in the engineer's report are taken from 6NYCRR, Part 601.5(f), 601.5(h), 601.5(i), 601.5(j) and 601.5(k). Preparation of the engineer's report in accordance with this guidance, however, does not relieve applicant of any provisions of 6NYCRR Parts 601 and 602.

Organization: The suggested organization (format) of the engineer's report shall be similar to that of an environmental impact statement; adapted to water resources issues. This organizational structure, which, after describing the project, moves smoothly through the important issues of establishing need, addressing impacts, evaluating alternatives, and developing mitigation, is a proven one, familiar to both the regulated community and the consulting community.

Salvatore Pagano, P.E.
Director
Division of Water

Attach.
cc: Dr. Banks; Mr. Campbell; Ms. Chrimes; Mr. Breuning; Regional Engineers for Environmental Quality

Engineer's Reports: Applications for Water Supply and Long Island Well Permits

A. Description of Proposed Action

1. Water supply system description
   a. generalized water supply system map; show existing facility locations and neighboring systems
   b. detailed water supply system map; proposed well location, all system facilities, and other features referred to in the engineer's report
   c. water supply system history
   d. population served; per capita use
   e. past pumpage/demand trends/population trends/industrial use trends
   f. projected demand (include basis of projection)
   g. existing facilities (production, storage, treatment, distribution, interconnections with other water supply systems
   h. projected service life of existing facilities
   i. existing water quality in water supply system wells
   j. largest water users in system (top ten)

2. Project description
   a. well size, depth, screened interval, capacity, location, appurtenances
   b. proposed treatment, distribution, storage
   c. integration with existing system facilities
   d. existing facilities to be modified
   e. existing facilities to be removed from service
   f. provisions for protection of the water supply and watershed from contamination
   g. 200 ft. radius map; method of control of surface contaminant sources within 200 feet of well.
   h. project schedule/cost
   i. preliminary plans and specifications for proposed well and plant

3. Establishment of need
   a. new facility to expand capacity
      i. population increase
      ii. seasonal peak demand
      iii. fire flows (including criteria established by the Insurance Services Office of New York)
      iv. other

   b. new facility to replace lost capacity
      i. quality problems (provide substantiating data)
      ii. equipment failure
      iii. other

   c. new facility to serve area not previously served

      i. projected demand

ii. basis of calculating projected demand

d. acquisition of existing water supply system (or facility) by new owner.

B. Environmental/Hydrogeologic Setting

1. Proposed screened interval; aquifer identification & characteristics
2. Interconnection with other water-bearing formations
3. Interconnection with surface water bodies
4. Proximity to known or suspected contamination sources (1 mile radius)
5. Proximity to known or suspected contaminated groundwater (1 mile radius)
6. Proximity to public water supply wells, private wells, agricultural wells, industrial wells (1 mile radius)
7. Proximity to salt water interface (if applicable)
8. Results of aquifer pump testing, potentiometric monitoring, etc. (if available)
9. Results of aquifer quality testing; chemical & bacteriological
10. Projected water quality and yield; basis for projections
11. Drillers logs for on-site or nearby wells.

C. Environmental/Hydrogeologic Impacts

1. Cone of depression
2. Zone of capture (contributing area)
3. Impact on water bearing formations identified in "B" above.
4. Impact on surface water bodies identified in "B" above.
5. Induced migration of contaminants from known or suspected contamination sources identified in "B" above.
6. Induced migration of contaminated groundwater from known or suspected sources identified in "B" above.
7. Impact on public water supply wells, private wells, agricultural wells, and industrial wells identified in "B" above.
8. Impact on salt water interface (if applicable)
9. Other impacts

D. Unavoidable Negative Environmental/Hydrogeologic Impacts (Explain why any negative impacts identified in "C" above cannot be avoided).

E. Alternatives to Proposed Action

1. Water conservation program for water supply system
   a. pricing/rate structure
   b. regulate/use restrictions
   c. educate/public information
   d. metering
   e. leak detection/repair

f. pressure reduction

2. Water importation
3. Increase storage
4. Water treatment
   a. well head treatment
   b. blending
   c. aquifer restoration
5. Alternative locations
6. Shallower screened interval

F. Mitigating measures proposed to minimize environmental impacts

1. Monitoring plan proposal
   a. monitor well locations
   b. analytes, sampling frequency, reporting requirements
   c. potentiometric monitoring
   d. action levels

2. Balance of pumping (control hydraulic gradients between production zones)
3. Water conservation program (see E.1, above)
4. Other

G. Growth Inducing Aspects (if applicable)

1. industrial expansion
2. residential areas expansion
3. enhanced fire protection
4. other

H. List of Related Studies, Reports, Data, etc.

1. water supply system master plan
2. regional master plan
3. local health department
4. USGS
5. other

APPENDIX B SEQRA LONG ENVIRONMENTAL ASSESSMENT FORM

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project: Construction of a New Well at the BGD Plant Site		
Project Location (describe, and attach a general location map): Bethpage Water District - B.G.D. Plant; Plainview Road, Bethpage, NY. East side of Seaford-Oyster Bay Expressway at interchange with Plainview Road.		
Brief Description of Proposed Action (include purpose or need): Construction of a new 3 MGD (~2083 GPM) supply well located at the southern end of the BGD Plant site off of Plainview Rd. Site piping for connections to existing well house and distribution. New well capacity will partially replace the likely loss of capacity from five other wells currently experiencing contamination in the Bethpage Water District. The Bethpage Water District's B.G.D. Plant is on land owned by New York State, used under a permanent easement agreement granted in 1979.		
Name of Applicant/Sponsor: Bethpage Water District - Superintendent Michael J. Boufis	Telephone: 516-931-0093 E-Mail: mikebwd@optonline.net	
Address: 25 Adams Ave.		
City/PO: Bethpage	State: NY	Zip Code: 11714
Project Contact (if not same as sponsor; give name and title/role): James L. Neri - Division Director of Water	Telephone: 631-756-8000 x1486 E-Mail: jneri@h2m.com	
Address: H2M architects + engineers, 538 Broad Hollow Road, 4th Floor East		
City/PO: Melville	State: NY	Zip Code: 11747
Property Owner (if not same as sponsor): New York State Office of Parks, Recreation & Historic Preservation	Telephone: E-Mail:	
Address: P.O. Box 247 - Long Island Engineering Department		
City/PO: Babylon	State: NY	Zip Code: 11702

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☐Yes ☑No		
c. City Council, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	Nassau County Health Department	
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSDEC has well permit approval and caustic tank permit, NYS parks easement modification	
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☐Yes ☑No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
R1-1A: One-Family Residence

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Bethpage Union Free School District

b. What police or other public protection forces serve the project site?
Nassau County Police Department; NYS Park Police

c. Which fire protection and emergency medical services serve the project site?
Bethpage Fire District; Nassau County Police Department

d. What parks serve the project site?
Bethpage State Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?
municipal water supply

b. a. Total acreage of the site of the proposed action? 7.85 acres
b. Total acreage to be physically disturbed? .9 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 7.85 acres

c. Is the proposed action an expansion of an existing project or use? ☑ Yes ☐ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % 110 Units: square feet

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
_____
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 3 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐ Yes ☑ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes,

i. Total number of structures 1

ii. Dimensions (in feet) of largest proposed structure: 10 height; 30 width; and 48 length

iii. Approximate extent of building space to be heated or cooled: 1440 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No

If Yes,

i. Purpose of the impoundment:

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify:

iii. If other than water, identify the type of impounded/contained liquids and their source.

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☑ Yes ☐ No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging? well borehole

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): a small amount of soil will be generated by the drilling
- Over what duration of time? 1 month

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

excavated soil from well borehole construction will be classified and logged by driller to characterize aquifers at well site

iv. Will there be onsite dewatering or processing of excavated materials? ☑ Yes ☐ No

If yes, describe. prepare sample cores for analysis/storage

v. What is the total area to be dredged or excavated? 0.00007 acres

vi. What is the maximum area to be worked at any one time? 0.00007 acres

vii. What would be the maximum depth of excavation or dredging? 680 feet

viii. Will the excavation require blasting? ☐ Yes ☑ No

ix. Summarize site reclamation goals and plan:

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description):

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No

If Yes, describe: _____

iv. Will proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐ No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐ Yes ☑ No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐ Yes ☑ No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No
- Do existing lines serve the project site? ☐ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑ No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

this project is a new supply source

vi. If water supply will be from wells (public or private), maximum pumping capacity: 2083 gallons/minute.

d. Will the proposed action generate liquid wastes? ☐ Yes ☑ No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☑ No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will line extension within an existing district be necessary to serve the project? ☐Yes ☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge, or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

_____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes ☑No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

_____

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

construction vehicles, delivery vehicles during construction. no mobile sources during project operations

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

fuel-powered generators

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

fuel-powered generator only to be used as back-up power

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend

☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of semi-trailer truck trips/day: _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

_____

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

309 KVA, estimated

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

PSEG. Electrical demand will also be shifted from other existing well locations.

iii. Will the proposed action require a new, or an upgrade to, an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 8 am - 5 pm
- Saturday: _____
- Sunday: _____
- Holidays: _____

ii. During Operations:

- Monday - Friday: 24 hrs
- Saturday: 24 hrs
- Sunday: 24 hrs
- Holidays: 24 hrs

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

construction-related noises between hours of operation listed in item "i" above

ii. Will proposed action remove existing natural barriers that could act as a noise barrier or screen? ☑ Yes ☐ No

Describe: some site clearing and tree removal is necessary to construct the project

n.. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

wall-mounted exterior light above doors to new well house, lighting will be "dark sky" compliant, 600 feet to nearest residence

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☑ Yes ☐ No

Describe: some site clearing and tree removal is necessary to construct project

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☑ Yes ☐ No

If Yes:

i. Product(s) to be stored Caustic and chlorine

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally describe proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: debris tons per TBD (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: minimal construction-related debris will be generated
- Operation: _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Minimal amounts of packaging and incidental trash will be contracted to be removed and transferred to permitted landfills.
- Operation: _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

no hazardous wastes will be generated as part of this project

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): municipal water supply, parkland

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0.6	1.5	+0.9
• Forested	1.7	1.4	-0.3
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	5.6	5.0	-0.6
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: **Bethpage Water District has a permanent easement to the property, but evidence of hiking trails exists

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No

If Yes,

i. Identify Facilities:

Charles Campagne Elementary School - Bethpage Union Free School District

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No

☐ Yes – Spills Incidents database Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☐ No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

v. Is the project site subject to an institutional control limiting property uses? ☑ Yes ☐ No

- If yes, DEC site ID number: n/a
- Describe the type of institutional control (e.g., deed restriction or easement): easement from New York state
- Describe any use limitations: public water supply infrastructure
- Describe any engineering controls: n/a
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☑ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 950 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site: riverhead sandy loam 0-8 %
_____ _____%
_____ _____%

d. What is the average depth to the water table on the project site? Average: 50 feet

e. Drainage status of project site soils:
☑ Well Drained: 100 % of site
☐ Moderately Well Drained: _____% of site
☐ Poorly Drained _____% of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 100 % of site
☐ 10-15%: _____% of site
☐ 15% or greater: _____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☐ Yes ☑ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☐ Yes ☑ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100 year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500 year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Sole Source Aquifer Names:Nassau-Suffolk SSA

m. Identify the predominant wildlife species that occupy or use the project site:
small birds
small mammals

n. Does the project site contain a designated significant natural community? ☐ Yes ☐ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): Pitch Pine-Oak Forest, Coastal Oak-Health Forest
ii. Source(s) of description or evaluation:
iii. Extent of community/habitat:
- Currently: 45.75, 140.14 acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use:

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number:

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site?
ii. Source(s) of soil rating(s):

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent:

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name:
ii. Basis for designation:
iii. Designating agency and date:

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☐ Yes ☑ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Bethpage State Park and Bethpage State Parkway

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): state park and scenic byway

iii. Distance between project and resource: 0 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Michael J. Boufis Date _____

Signature _____ Title Superintendent

PRINT FORM

Agency Use Only [If applicable]

Project :

Date :

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes"** to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No"** to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land
Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1)
If "Yes", answer questions a - j. If "No", move on to Section 2.

☐ NO ☑ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☑	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☑	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☑	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☑	☐
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☑	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☑	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☑	☐
h. Other impacts: _____ _____		☐	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g)

☑ NO ☐ YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____ _____	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	☐	☐
c. Other impacts: _____ _____		☐	☐

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h)

☑ NO ☐ YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	☐	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☐	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☐	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☐	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☐	☐
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☐	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☐	☐
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☐	☐
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☐	☐
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☐	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☐	☐

l. Other impacts: _____ _____		☐	☐

4. Impact on groundwater

The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. (See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t)

☐ NO ☑ YES

If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☑	☐
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: sized similar to nearby wells	D2c	☑	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☑	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☑	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☐	☑
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☑	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☑	☐
h. Other impacts: _____ _____		☐	☐

5. Impact on Flooding

The proposed action may result in development on lands subject to flooding. (See Part 1. E.2)

☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☐	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☐	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☐	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☐	☐
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☐	☐
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☐	☐

g. Other impacts: _____ _____		☐	☐

6. Impacts on Air

The proposed action may include a state regulated air emission source. ☑ NO ☐ YES
(See Part 1. D.2.f., D,2,h, D.2.g)
If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☐	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☐	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☐	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☐	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☐	☐
vi. 43 tons/year or more of methane	D2h	☐	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☐	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☐	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☐	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☐	☐
f. Other impacts: _____ _____		☐	☐

7. Impact on Plants and Animals

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☑ NO ☐ YES
If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☐	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☐	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☐	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	□	□
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	□	□
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	□	□
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	□	□
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	□	□
j. Other impacts: _____ _____		□	□

8. Impact on Agricultural Resources

The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	□	□
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, Elb	□	□
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	□	□
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	□	□
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	El a, E1b	□	□
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	□	□
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	□	□
h. Other impacts: _____		□	□

9. Impact on Aesthetic Resources

The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.)

☐ NO ☑ YES

If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☑	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☑	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	☑ ☑	☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	☑ ☑	☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☑	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☐	☑
g. Other impacts: _____ _____		☐	☐

10. Impact on Historic and Archeological Resources

The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.)

☑ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on or has been nominated by the NYS Board of Historic Preservation for inclusion on the State or National Register of Historic Places.	E3e	□	□
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	□	□
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	□	□

d. Other impacts: _____ _____		☐	☐
e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☐	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☐	☐
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☐	☐

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

☐ NO ☑ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☑	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☑	☐
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☑	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☑	☐
e. Other impacts: _____ _____		☐	☐

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: _____ _____		☐	☐

13. Impact on Transportation

The proposed action may result in a change to existing transportation systems. ☑ NO ☐ YES
(See Part 1. D.2.j)
If "Yes", answer questions a - f. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☐
c. The proposed action will degrade existing transit access.	D2j	☐	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☐	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☐	☐
f. Other impacts: _____ _____		☐	☐

14. Impact on Energy

The proposed action may cause an increase in the use of any form of energy. ☐ NO ☑ YES
(See Part 1. D.2.k)
If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☐	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☑	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☐	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☑	☐
e. Other Impacts: _____ _____		☐	☐

15. Impact on Noise, Odor, and Light

The proposed action may result in an increase in noise, odors, or outdoor lighting. ☐ NO ☑ YES
(See Part 1. D.2.m., n., and o.)
If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☑	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☑	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☑	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☑	☐
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☑	☐
f. Other impacts: _____ _____		☐	☐

16. Impact on Human Health

The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☑ NO ☐ YES

If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may cccur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: _____ _____			

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. (See Part 1. C.1, C.2. and C.3.) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☐	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☐	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, Elb	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☐	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: _____ _____		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. (See Part 1. C.2, C.3, D.2, E.3) ☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☐	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☐	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☐	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☐	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☐	☐
g. Other impacts: _____ _____		☐	☐

PRINT FULL FORM

APPENDIX C BETHPAGE WELL WATER QUALITY LABORATORY RESULTS

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA

PARAMETERS (mg/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. BGD-1 N-09591[2] MAX. RESULT (Raw/Treat)	WELL NO. BGD-1 N-09591[2] AVG. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915[2] MAX. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915[2] AVG. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916[2] MAX. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916[2] AVG. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004[1] MAX. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004[1] AVG. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876[2] MAX. RESULT (Raw/Treated)	WELL NO. 6-1 N-03876[2] AVG. RESULT (Raw/Treated)
INORGANIC												
ARSENIC	10.0 ug/l	3.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BARIUM	2.0 mg/l	0.2 mg/l	0.0036/0.0035	0.0036/0.0035	0.0061/0.0061	0.0061/0.0061	0.0058/0.0061	0.0058/0.0061	ND	ND	0.0082/0.0055	0.0082/0.0055
CADMIUM	5.0 ug/l	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHROMIUM	0.10 mg/l	0.01 mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
COPPER	[1.3] mg/l	0.02 mg/l	0.065/ND	0.065/ND	0.087/0.014	0.087/0.014	ND	ND	0.017	0.017	0.053/0.0035	0.053/0.0035
FLUORIDE	2.2 mg/l	0.1 mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	[15.0] ug/l	1.0 ug/l	6.5/ND	6.5/ND	2.8/ND	2.8/ND	ND	ND	ND	ND	5.3/ND	5.3/ND
MERCURY	2.0 ug/l	0.2 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LANGLIER SATURATION INDEX	None	None	-3.26/-5.16	-3.26/-5.16	-6.25/-4.14	-6.25/-4.14	-6.02/-4.14	-6.02/-4.14	-5.93	-5.93	-5.99/-4.33	-5.99/-4.33
SELENIUM	50 ug/l	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SILVER	0.1 mg/l	0.01 mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SODIUM	**20/270 mg/l	0.2 mg/l	7.8/7.7	7.8/7.7	15.3/10.6	15.3/10.6	10.6/10.6	10.6/10.6	5.1	5.1	13.2/13.7	13.2/13.7
ZINC	5.0 mg/l	0.02 mg/l	0.069/ND	0.069/ND	0.027/0.041	0.027/0.041	0.041/ND	0.041/ND	ND	ND	0.035/ND	0.035/ND
COLOR	15 Units	5 Units	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TURBIDITY	5 Units	1 Unit	2.9/ND	2.9/ND	ND	ND	ND	ND	ND	ND	ND	ND
ODOR	3 Units	0 Units	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
IRON	0.3 mg/l	0.02 mg/l	ND	ND	***0.39/ND	***0.39/ND	0.27/ND	0.27/ND	0.053	0.053	0.080/ND	0.080/ND
MANGANESE	0.3 mg/l	0.01 mg/l	0.095/ND	0.095/ND	0.014/ND	0.014/ND	ND	ND	ND	ND	ND	ND
AMMONIA	None	0.1 mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NITRITE	1.0 mg/l	0.1 mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NITRATE	10.0 mg/l	0.1 mg/l	6.1[26]/7.6[16]	5.7/6.0	4.1[26]/3.7[26]	3.6/3.4	4.0[26]/3.7[26]	3.4/3.4	1.3[26]/1.2[2]	1.2/1.2	4.4[26]/4.5[26]	4.0/3.6
CHLORIDE	250 mg/l	1.0 mg/l	9.5/9.1	9.5/9.1	19.8/11.7	19.8/11.7	11.5/11.7	11.5/11.7	4.4	4.4	11.3/11.6	11.3/11.6
TOTAL HARDNESS	None	1.0 mg/l	21.5/21.4	21.5/21.4	17.4/14.4	17.4/14.4	14.5/14.4	14.5/14.4	6.7	6.7	12.6/11.4	12.6/11.4
TOTAL ALKALINITY	None	0 mg/l	60.4/2.4	60.4/2.4	ND	ND	ND	ND	2.2	2.2	ND	ND
pH (BEFORE TREATMENT)	None	None	6.0[2]/6.0[2]	5.9/5.6	6.0[2]/6.8[2]	5.3/6.4	6.0[2]/6.8[2]	5.5/6.4	6.0[2]	5.5	6.0[2]/6.7[2]	5.5/6.4
TOTAL DISSOLVED SOLIDS	None	5.0 mg/l	50.0/44.0	50.0/44.0	59.0/49.0	59.0/49.0	47.0/49.0	47.0/49.0	27.0	27.0	63.0/62.0	63.0/62.0
DETERGENTS (MBAS)	None	0.08 mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SULFATE	250 mg/l	5.0 mg/l	ND	ND	7.0/5.1	7.0/5.1	5.0/5.1	5.0/5.1	ND	ND	8.0/7.5	8.0/7.5
FREE CYANIDE	200 ug/l	10.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ANTIMONY	6.0 ug/l	5.9 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BERYLLIUM	4.0 ug/l	3.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CALCIUM	None	1.0 mg/l	5.5/5.4	5.5/5.4	4.3/3.5	4.3/3.5	3.6/3.5	3.6/3.5	1.6	1.6	3.1/2.8	3.1/2.8
MAGNESIUM	None	1.0 mg/l	1.9/1.9	1.9/1.9	1.6/1.4	1.6/1.4	1.4/1.4	1.4/1.4	0.68	0.68	1.2/1.1	1.2/1.1
NICKEL	0.1 mg/l	0.0005 mg/l	0.032/0.0023	0.0032/0.0023	0.0052/0.0038	0.0052/0.0038	0.0034/0.0038	0.0034/0.0038	0.002	0.002	0.0023/0.0026	0.0023/0.0026
THALLIUM	2.0 ug/l	0.3 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERCHLORATE	18 ug/l	1.0 ug/l	8.1[12]/1.0[7]	5.8/0.2	ND/6.3[12]	ND/0.53	ND/6.3[12]	ND/0.53	2.0[12]/1.9[1]	1.5/0.9	4.4[12]/2.9[12]	3.0/1.4

CONT. - CONTAMINANT
ND - NOT DETECTED
NA - NOT ANALYZED
** - 20 mg/l IS THE LIMIT FOR PEOPLE ON HIGHLY RESTRICTED SODIUM DIETS AND 270 mg/l FOR THOSE ON MODERATELY RESTRICTED SODIUM DIETS
*** - EXCEEDS NEW YORK STATE/USEPA LIMITS FOR POTABLE WATER
[ ] - USEPA/NYSDH ACTION LEVEL
WELL BGD-1 IS TREATED FOR PERCHLORATE
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (mg/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. 6-2 N-08941[6] MAX. RESULT (Raw/Treated)	WELL NO. 6-2 N-08941[6] AVG. RESULT (Raw/Treated)	WELL NO. 7A N-08767 [2] MAX. RESULT (Raw/Treated)	WELL NO. 7A N-08767 [2] AVG. RESULT (Raw/Treated)	WELL NO. 8A N-08768[2] MAX. RESULT (Raw/Treated)	WELL NO. 8A N-08768[2] AVG. RESULT (Raw/Treated)	WELL NO. SPD-1 N-14110[1] MAX. RESULT	WELL NO. SPD-1 N-14110[1] AVG. RESULT
INORGANIC										
ARSENIC	10.0 ug/l	3.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
BARIUM	2.0 mg/l	0.2 mg/l	ND/0.0055	ND/0.0055	0.0097/0.0037	0.0097/0.0037	0.004/0.0037	0.004/0.0037	0.0021	0.0021
CADMIUM	5.0 ug/l	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHROMIUM	0.10 mg/l	0.01 mg/l	ND	ND	ND	ND	ND	ND	ND	ND
COPPER	[1.3] mg/l	0.02 mg/l	0.010/0.0035	0.010/0.0035	0.016/0.0026	0.016/0.0026	0.011/0.0026	0.011/0.0026	0.0027	0.0027
FLUORIDE	2.2 mg/l	0.1 mg/l	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	[15.0] ug/l	1.0 ug/l	ND	ND	1.0/ND	1.0/ND	ND	ND	ND	ND
MERCURY	2.0 ug/l	0.2 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
LANGLIER SATURATION INDEX	None	None	-5.08/-4.33	-5.08/-4.33	-5.10/-3.47	-5.10/-3.47	-4.87/-3.47	-4.87/-3.47	-5.18	-5.18
SELENIUM	50 ug/l	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
SILVER	0.1 mg/l	0.01 mg/l	ND	ND	ND	ND	ND	ND	ND	ND
SODIUM	**20/270 mg/l	0.2 mg/l	7.0/13.7	7.0/13.7	9.7/7.5	9.7/7.5	7.2/7.5	7.2/7.5	5.4	5.4
ZINC	5.0 mg/l	0.02 mg/l	ND	ND	0.049/0.020	0.049/0.020	ND/0.02	ND/0.02	ND	ND
COLOR	15 Units	5 Units	ND	ND	ND	ND	ND	ND	ND	ND
TURBIDITY	5 Units	1 Unit	ND	ND	ND	ND	ND	ND	ND	ND
ODOR	3 Units	0 Units	ND	ND	ND	ND	ND	ND	ND	ND
IRON	0.3 mg/l	0.02 mg/l	0.093/ND	0.093/ND	0.027/ND	0.027/ND	ND	ND	0.034	0.034
MANGANESE	0.3 mg/l	0.01 mg/l	0.019/ND	0.019/ND	ND	ND	ND	ND	ND	ND
AMMONIA	None	0.1 mg/l	ND	ND	ND	ND	ND	ND	ND	ND
NITRITE	1.0 mg/l	0.1 mg/l	ND	ND	ND	ND	ND	ND	ND	ND
NITRATE	10.0 mg/l	0.1 mg/l	3.2[26]/4.5[26]	3.0/3.6	8.0[26]/5.3[26]	6.8/4.4	4.8[26]/5.3[26]	4.3/4.4	4.7[26]	2.5
CHLORIDE	250 mg/l	1.0 mg/l	6.1/11.6	6.1/11.6	13.5/9.8	13.5/9.8	9.5/9.8	9.5/9.8	4.2	4.2
TOTAL HARDNESS	None	1.0 mg/l	10.4/11.4	10.4/11.4	30.9/19.6	30.9/19.6	19.7/19.6	19.7/19.6	10.8	10.8
TOTAL ALKALINITY	None	0 mg/l	3.2/ND	3.2/ND	1.5/80.3	1.5/80.3	3.2/80.3	3.2/80.3	1.2	1.2
pH (BEFORE TREATMENT)	None	None	6.0[2]/6.7[2]	5.8/6.4	6.0[2]/6.0[2]	5.7/5.7	6.0[2]/6.0[2]	5.7/5.7	6.0[2]	5.9
TOTAL DISSOLVED SOLIDS	None	5.0 mg/l	27.0/62.0	27.0/62.0	58.0/39.0	58.0/29.0	34.0/39.0	34.0/39.0	26.0	26.0
DETERGENTS (MBAS)	None	0.08 mg/l	ND	ND	ND	ND	ND	ND	ND	ND
SULFATE	250 mg/l	5.0 mg/l	ND/7.5	ND/7.5	ND	ND	ND	ND	ND	ND
FREE CYANIDE	200 ug/l	10.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ANTIMONY	6.0 ug/l	5.9 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
BERYLLIUM	4.0 ug/l	3.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CALCIUM	None	1.0 mg/l	2.4/2.8	2.4/2.8	8.0/5.0	8.0/5.0	4.9/5.0	4.9/5.0	2.6	2.6
MAGNESIUM	None	1.0 mg/l	1.1/1.1	1.1/1.1	2.7/1.8	2.7/1.8	1.8/1.8	1.8/1.8	1.0	1.0
NICKEL	0.1 mg/l	0.0005 mg/l	0.0029/0.0026	0.0029/0.0026	0.0039/0.0016	0.0039/0.0016	0.0019/0.0016	0.0019/0.0016	0.0012	0.0012
THALLIUM	2.0 ug/l	0.3 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
PERCHLORATE	18 ug/l	1.0 ug/l	3.3[12]/2.9[12]	2.4/1.4	7.2[12]/6.4[12]	5.5/2.9	6.5[12]/6.4[12]	4.5/2.9	6.8[11]	5.4

CONT. - CONTAMINANT
ND - NOT DETECTED
NA - NOT ANALYZED
** - 20 mg/l IS THE LIMIT FOR PEOPLE ON HIGHLY RESTRICTED SODIUM DIETS AND 270 mg/l FOR THOSE ON MODERATELY RESTRICTED SODIUM DIETS
[ ] - USEPA/NYSDH ACTION LEVEL
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. BGD-1 N-09591 MAX. RESULT	WELL NO. BGD-1 N-09591 AVG. RESULT	WELL NO. 4-1 N-06915 MAX. RESULT	WELL NO. 4-1 N-06915 AVG. RESULT	WELL NO. 4-2 N-06916 MAX. RESULT	WELL NO. 4-2 N-06916 AVG. RESULT	WELL NO. 5-1 N-08004 MAX. RESULT	WELL NO. 5-1 N-08004 AVG. RESULT	WELL NO. 6-1 N-03876 MAX. RESULT	WELL NO. 6-1 N-03876 AVG. RESULT
SYNTHETIC ORGANICS CONTAMINANTS (SOC)												
LINDANE	0.2 ug/l	0.025 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
HEPTACHLOR	0.4 ug/l	0.025 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ALDRIN	5.0 ug/l	0.025 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
HEPTACHLOR EPOXIDE	0.2 ug/l	0.025 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DIELDRIN	2.0 ug/l	0.05 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ENDRIN	2.0 ug/l	0.05 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
METHOXYCHLOR	40.0 ug/l	0.25 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
TOXAPHENE	3.0 ug/l	2.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
CHLORDANE	2.0 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
TOTAL PCBs	0.5 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
PROPACHLOR	50.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ALACHLOR	2.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
SIMAZINE	4.0 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ATRAZINE	3.0 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
METOLACHLOR	50.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
METRIBUZIN	50.0 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
BUTACHLOR	50.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**

CONT. - CONTAMINANT

ND - NOT DETECTED

( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. 6-2 N-08941 MAX. RESULT	WELL NO. 6-2 N-08941 AVG. RESULT	WELL NO. 7A N-08767 MAX. RESULT	WELL NO. 7A N-08767 AVG. RESULT	WELL NO. 8A N-08768 MAX. RESULT	WELL NO. 8A N-08768 AVG. RESULT	WELL NO. SPD-1 N-14110 MAX. RESULT	WELL NO. SPD-1 N-14110 AVG. RESULT
SYNTHETIC ORGANICS CONTAMINANTS (SOC)										
LINDANE	0.2 ug/l	0.025 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
HEPTACHLOR	0.4 ug/l	0.025 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ALDRIN	5.0 ug/l	0.025 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
HEPTACHLOR EPOXIDE	0.2 ug/l	0.025 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DIELDRIN	2.0 ug/l	0.05 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ENDRIN	2.0 ug/l	0.05 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
METHOXYCHLOR	40.0 ug/l	0.25 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
TOXAPHENE	3.0 ug/l	2.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
CHLORDANE	2.0 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
TOTAL PCBs	0.5 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
PROPACHLOR	50.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ALACHLOR	2.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
SIMAZINE	4.0 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ATRAZINE	3.0 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
METOLACHLOR	50.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
METRIBUZIN	50.0 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
BUTACHLOR	50.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**

CONT. - CONTAMINANT

ND - NOT DETECTED

( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. BGD-1 N-09591 MAX. RESULT	WELL NO. BGD-1 N-09591 AVG. RESULT	WELL NO. 4-1 N-06915 MAX. RESULT	WELL NO. 4-1 N-06915 AVG. RESULT	WELL NO. 4-2 N-06916 MAX. RESULT	WELL NO. 4-2 N-06916 AVG. RESULT	WELL NO. 5-1 N-08004 MAX. RESULT	WELL NO. 5-1 N-08004 AVG. RESULT	WELL NO. 6-1 N-03876 MAX. RESULT	WELL NO. 6-1 N-03876 AVG. RESULT
SYNTHETIC ORGANICS CONTAMINANTS (SOC) (CONT'D.)												
2,4-D	50.0 ug/l	0.25 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
2,4,5-TP (SILVEX)	10.0 ug/l	0.13 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DINOSEB	7.0 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DALAPON	200 ug/l	0.7 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
PICLORAM	500 ug/l	0.6 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DICAMBA	50.0 ug/l	0.08 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
PENTACHLOROPHENOL	1.0 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
HEXACHLOROCYCLOPENTADIENE	50.0 ug/l	0.64 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
bis(2-ETHYLHEXYL)ADIPATE	400 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
bis(2-ETHYLHEXYL)PHTHALATE	6.0 ug/l	3.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
HEXACHLOROBENZENE	1.0 ug/l	0.25 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
BENZO(A)PYRENE	0.2 ug/l	0.1 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ALDICARB SULFONE	2.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ALDICARBSULFOXIDE	4.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ALDICARB	3.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
TOTAL ALDICARBS	7.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
OXAMYL	200 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
METHOMYL	50.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
3-HYDROXYCARBOFURAN	50.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
CARBOFURAN	40.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
CARBARYL	50.0 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
GLYPHOSATE	700 ug/l	10.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DIQUAT	20 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ENDOTHALL	100 ug/l	50.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
1,2-DIBROMOETHANE (EDB)	0.05 ug/l	0.02 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
1,2-DIBROMO-3-CHL.PROPANE	0.2 ug/l	0.02 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DIOXIN	30 Pg/L	5.0 Pg/L	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**

CONT. - CONTAMINANT
ND - NOT DETECTED
Pg/L - PICOGRAMS PER LITER
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. 6-2 N-08941 MAX. RESULT	WELL NO. 6-2 N-08941 AVG. RESULT	WELL NO. 7A N-08767 MAX. RESULT	WELL NO. 7A N-08767 AVG. RESULT	WELL NO. 8A N-08768 MAX. RESULT	WELL NO. 8A N-08768 AVG. RESULT	WELL NO. SPD-1 N-14110 MAX. RESULT	WELL NO. SPD-1 N-14110 AVG. RESULT
SYNTHETIC ORGANICS CONTAMINANTS (SOC) (CONT'D.)										
2,4-D	50.0 ug/l	0.25 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
2,4,5-TP (SILVEX)	10.0 ug/l	0.13 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
DINOSEB	7.0 ug/l	0.2 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
DALAPON	200 ug/l	0.7 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
PICLORAM	500 ug/l	0.6 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
DICAMBA	50.0 ug/l	0.08 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
PENTACHLOROPHENOL	1.0 ug/l	0.2 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
HEXACHLOROCYCLOPENTADIENE	50.0 ug/l	0.64 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
bis(2-ETHYLHEXYL)ADIPATE	400 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
bis(2-ETHYLHEXYL)PHTHALATE	6.0 ug/l	3.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
HEXACHLOROBENZENE	1.0 ug/l	0.25 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
BENZO(A)PYRENE	0.2 ug/l	0.1 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
ALDICARB SULFONE	2.0 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
ALDICARBSULFOXIDE	4.0 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
ALDICARB	3.0 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
TOTAL ALDICARBS	7.0 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
OXAMYL	200 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
METHOMYL	50.0 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
3-HYDROXYCARBOFURAN	50.0 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
CARBOFURAN	40.0 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
CARBARYL	50.0 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
GLYPHOSATE	700 ug/l	10.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
DIQUAT	20 ug/l	1.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
ENDOTHALL	100 ug/l	50.0 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
1,2-DIBROMOETHANE (EDB)	0.05 ug/l	0.02 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
1,2-DIBROMO-3-CHL.PROPANE	0.2 ug/l	0.02 ug/l	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED
DIOXIN	30 Pg/L	5.0 Pg/L	NOT	TESTED	NOT	TESTED	NOT	TESTED	NOT	TESTED

CONT. - CONTAMINANT
ND - NOT DETECTED
Pg/L - PICOGRAMS PER LITER
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. BGD-1 N-09591 MAX. RESULT	WELL NO. BGD-1 N-09591 AVG. RESULT	WELL NO. 4-1 N-06915 MAX. RESULT	WELL NO. 4-1 N-06915 AVG. RESULT	WELL NO. 4-2 N-06916 MAX. RESULT	WELL NO. 4-2 N-06916 AVG. RESULT	WELL NO. 5-1 N-08004 MAX. RESULT	WELL NO. 5-1 N-08004 AVG. RESULT	WELL NO. 6-1 N-03876 MAX. RESULT	WELL NO. 6-1 N-03876 AVG. RESULT
ADDITIONAL HERBICIDE/PESTICIDE TESTING												
DICHLORVOS	50 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ACEPHATE	50 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DIAZIONON	50 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
CHLORPYRIFOS	50 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
TRIFLUTALIN	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
BENEFIN	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
PROWL	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
PERMETHRIN	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
FLUVALINATE	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**

CONT. - CONTAMINANT
ND - NOT DETECTED

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. 6-2 N-08941 MAX. RESULT	WELL NO. 6-2 N-08941 AVG. RESULT	WELL NO. 7 N-08767 8.8/7.9 RESULT	WELL NO. 7 N-08767 8.8/7.9 RESULT	WELL NO. 8A N-08768 MAX. RESULT	WELL NO. 8A N-08768 AVG. RESULT	WELL NO. SPD-1 N-14110 MAX. RESULT	WELL NO. SPD-1 N-14110 AVG. RESULT
ADDITIONAL HERBICIDE/PESTICIDE TESTING										
DICHLORVOS	50 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
ACEPHATE	50 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DIAZIONON	50 ug/l	1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
CHLORPYRIFOS	50 ug/l	0.5 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
TRIFLUTALIN	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
BENEFIN	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
PROWL	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
PERMETHRIN	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
FLUVALINATE	50 ug/l	0.2 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**

CONT. - CONTAMINANT
ND - NOT DETECTED

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. BGD-1 N-09591[19] MAX. RESULT (Raw/Treat)	WELL NO. BGD-1 N-09591[19] AVG. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915[24] MAX. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915[24] AVG. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916[24] MAX. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916[24] AVG. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004[24] MAX. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004[24] AVG. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876[24] MAX. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876[24] AVG. RESULT (Raw/Treat)
TRIHALOMETHANES AND HALOACETIC ACIDS												
CHLOROACETIC ACID	---	< 2.0 ug/l	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
BROMOACETIC ACID	---	< 1.0 ug/l	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
DICHLOROACETIC ACID	---	< 1.0 ug/l	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
TRICHLOROACETIC ACID	---	< 1.0 ug/l	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
DIBROMOACETIC ACID	---	< 2.0 ug/l	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
TOTAL HALOACETIC ACID	60 ug/l	< 2.0 ug/l	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
CHLOROFORM	50 ug/l	< 0.5 ug/l	0.8/ND	0.1/ND	1.2/ND	0.9/ND	3.9/ND	2.8/ND	2.6/ND	2.0/ND	ND	ND
BROMODICHLOROMETHANE	50 ug/l	< 0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	50 ug/l	< 0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMOFORM	50 ug/l	< 0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL TRIHALOMETHANES	80 ug/l	< 1.0 ug/l	0.8/ND	0.1/ND	1.2/ND	0.9/ND	3.9/ND	2.8/ND	2.6/ND	2.0/ND	ND	ND
RADIONUCLIDES												
GROSS ALPHA	15 pCi/L	< 3 pCi/L	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
GROSS BETA	50 pCi/L	< 3 pCi/L	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
RADIUM 226 & 228	5 pCi/L	< 3 pCi/L	**NOT TESTED**		4.90[24]/2.81[24]	2.5/1.8	4.90[24]/2.81[24]	2.5/1.8	**NOT TESTED**		**NOT TESTED**	
URANIUM 234	30 ug/l	< 3.0 ug/l	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
URANIUM 235	30 ug/l	< 3.0 ug/l	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	
URANIUM 238	30 ug/l	< 3.0 ug/l	**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**		**NOT TESTED**	

CONT. - CONTAMINANT
ND - NOT DETECTED
pCi/L - pico Curies per Liter
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. 6-2 N-08941[24] MAX. RESULT (Raw/Treat)	WELL NO. 6-2 N-08941[24] AVG. RESULT (Raw/Treat)	WELL NO. 7A N-08767[24] MAX. RESULT (Raw/Treat)	WELL NO. 7A N-08767[24] AVG. RESULT (Raw/Treat)	WELL NO. 8A N-08768[24] MAX. RESULT (Raw/Treat)	WELL NO. 8A N-08768[24] AVG. RESULT (Raw/Treat)	WELL NO. SPD-1 N-14110[15] MAX. RESULT	WELL NO. SPD-1 N-14110[15] AVG. RESULT
TRIHALOMETHANES AND HALOACETIC ACIDS										
CHLOROACETIC ACID	---	< 2.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
BROMOACETIC ACID	---	< 1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DICHLOROACETIC ACID	---	< 1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
TRICHLOROACETIC ACID	---	< 1.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
DIBROMOACETIC ACID	---	< 2.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
TOTAL HALOACETIC ACID	60 ug/l	< 2.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
CHLOROFORM	50 ug/l	< 0.5 ug/l	1.4/ND	1.1/ND	ND	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	50 ug/l	< 0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	50 ug/l	< 0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
BROMOFORM	50 ug/l	< 0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL TRIHALOMETHANES	80 ug/l	< 1.0 ug/l	1.4/ND	1.1/ND	ND	ND	ND	ND	ND	ND
RADIONUCLIDES										
GROSS ALPHA	15 pCi/L	< 3 pCi/L	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
GROSS BETA	50 pCi/L	< 3 pCi/L	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
RADIUM 226 & 228	5 pCi/L	< 3 pCi/L	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
URANIUM 234	30 ug/l	< 3.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
URANIUM 235	30 ug/l	< 3.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**
URANIUM 238	30 ug/l	< 3.0 ug/l	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**	**NOT**	**TESTED**

CONT. - CONTAMINANT
ND - NOT DETECTED
pCi/L - pico Curies per Liter
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. BGD-1 N-09591 MAX. RESULT (Raw/Treat)	WELL NO. BGD-1 N-09591 AVG. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915 MAX. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915 AVG. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916 MAX. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916 AVG. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004 MAX. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004 AVG. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876 MAX. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876 AVG. RESULT (Raw/Treat)
UCMR3												
1,4 DIOXANE	50 ug/l	0.7 ug/l	1.7[5]	1.4	11.7[5]/6.0[1]	7.92/6.0	15.4[5]/6.0[1]	7.6/6.0	9.4[5]/1.6[1]	3.1/1.6	13.6[5]/8.7[1]	10.9/8.7
VOLATILES												
1,1-DICHLOROETHANE	5.0 ug/l	0.03 ug/l	0.66[1]	0.66	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
1,2,3-TRICHLORPROPANE	5.0 ug/l	0.03 ug/l	ND	ND	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
1,3-BUTADIENE	50 ug/l	0.1 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
BROMOCHLOROMETHANE	50 ug/l	0.06 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
BROMOMETHANE	5.0 ug/l	0.2 ug/l	ND	ND	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
CHLORODIFLUOROMETHANE	5.0 ug/l	0.08 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	5.0 ug/l	0.2 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERFLUOROCHEMICALS												
PERFLUOROBUTANESULFONIC ACID	5.0 ug/l	0.9 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
PERFLUOROHEPTANOIC ACID	5.0 ug/l	0.01 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
PERFLUOROHEXANESULFONIC ACID	5.0 ug/l	0.03 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
PERFLUORONONANOIC ACID	5.0 ug/l	0.02 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
PERFLUOROOCTANESULFONIC ACID	5.0 ug/l	0.04 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
PERFLUOROOCTANOIC ACID	5.0 ug/l	0.02 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
METALS												
CHROMIUM	100 ug/l	0.2 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
COBALT		1.0 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
MOLYBDENUM		1.0 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
STRONTIUM		0.3 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
VANADIUM		0.2 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
HEXAVALENT CHROMIUM		0.03 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
CHLORATE		20 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
HORMONES												
17-ALPHA-ETHYNYLESTRADIOL	50 ug/l	0.0004 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
17-BETA-ESTRADIOL	50 ug/l	0.0009 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
4-ANDROSTENE-3,17-DIONE	50 ug/l	0.0003 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
EQUILIN	50 ug/l	0.004 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
ESTRIOL	50 ug/l	0.0008 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
ESTRONE	50 ug/l	0.002 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
TESTOSTERONE	50 ug/l	0.0001 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	

CONT. - CONTAMINANT
NOT TESTED IN 2014
ND - NOT DETECTED

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. 6-2 N-08941 MAX. RESULT (Raw/Treat)	WELL NO. 6-2 N-08941 AVG. RESULT (Raw/Treat)	WELL NO. 7A N-08767 MAX. RESULT (Raw/Treat)	WELL NO. 7A N-08767 AVG. RESULT (Raw/Treat)	WELL NO. 8A N-08768 MAX. RESULT (Raw/Treat)	WELL NO. 8A N-08768 AVG. RESULT (Raw/Treat)	WELL NO. SPD-1 N-14110 MAX. RESULT	WELL NO. SPD-1 N-14110 AVG. RESULT
UCMR3										
1,4 DIOXANE	50 ug/l	0.7 ug/l	11.1[5]/8.7[1]	8.8/8.7	0.67[5]/0.37[1]	0.52/0.37	0.35[5]/0.37[1]	0.282/0.37	0.38[6]	0.21
VOLATILES										
1,1-DICHLOROETHANE	5.0 ug/l	0.03 ug/l	1.5[4]/ND	1.4/ND	NOT TESTED		NOT TESTED		ND	ND
1,2,3-TRICHLORPROPANE	5.0 ug/l	0.03 ug/l	ND	ND	NOT TESTED		NOT TESTED		ND	ND
1,3-BUTADIENE	50 ug/l	0.1 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
BROMOCHLOROMETHANE	50 ug/l	0.06 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
BROMOMETHANE	5.0 ug/l	0.2 ug/l	ND	ND	NOT TESTED		NOT TESTED		ND	ND
CHLORODIFLUOROMETHANE	5.0 ug/l	0.08 ug/l	0.84[5]	0.17	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	5.0 ug/l	0.2 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
PERFLUOROCHEMICALS			NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
PERFLUOROBUTANESULFONIC ACID	5.0 ug/l	0.9 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
PERFLUOROHEPTANOIC ACID	5.0 ug/l	0.01 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
PERFLUOROHEXANESULFONIC ACID	5.0 ug/l	0.03 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
PERFLUORONONANOIC ACID	5.0 ug/l	0.02 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
PERFLUOROOCTANESULFONIC ACID	5.0 ug/l	0.04 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
PERFLUOROOCTANOIC ACID	5.0 ug/l	0.02 ug/l								
METALS			NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
CHROMIUM	100 ug/l	0.2 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
COBALT		1.0 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
MOLYBDENUM		1.0 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
STRONTIUM		0.3 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		14.1[1]	14.1
VANADIUM		0.2 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		ND	ND
HEXAVALENT CHROMIUM		0.03 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
CHLORATE		20 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		104.0[10	104.0
HORMONES										
17-ALPHA-ETHYNYLESTRADIOL	50 ug/l	0.0004 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
17-BETA-ESTRADIOL	50 ug/l	0.0009 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
4-ANDROSTENE-3,17-DIONE	50 ug/l	0.0003 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
EQUILIN	50 ug/l	0.004 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
ESTRIOL	50 ug/l	0.0008 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
ESTRONE	50 ug/l	0.002 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	
TESTOSTERONE	50 ug/l	0.0001 ug/l	NOT TESTED		NOT TESTED		NOT TESTED		NOT TESTED	

CONT. - CONTAMINANT
NOT TESTED IN 2014
ND - NOT DETECTED

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. BGD-1 N-09591(19) MAX. RESULT (Raw/Treat)	WELL NO. BGD-1 N-09591(19) AVG. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915(24) MAX. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915(24) AVG. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916(24) MAX. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916(24) AVG. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004(24) MAX. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004(24) AVG. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876(24) MAX. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876(24) AVG. RESULT (Raw/Treat)
VOLATILE ORGANICS												
DICHLORODIFLUOROMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	2.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMOMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	5.0 ug/l	0.5 ug/l	0.5/ND	0.1/ND	4.2/ND	3.5/ND	2.9/ND	2.3/ND	ND	ND	ND	ND
METHYLENE CHLORIDE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	5.0 ug/l	0.5 ug/l	2.0/1.3	1.3/0.9	***6.1/ND	4.9/ND	3.9/ND	3.2/ND	ND	ND	ND	ND
***cis*-1,2 DICHLOROETHENE**	5.0 ug/l	0.5 ug/l	ND	ND	***53.3/ND	***39.7/ND	***38.8/ND	***33.6/ND	***6.8/ND	***6.1/ND	ND	ND
2,2-DICHLOROPROPANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMOCHLOROMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	2.2/ND	1.6/ND	1.2/ND	0.9/ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	0.9/ND	0.1/ND	ND	ND	ND	ND
1,1-DICHLOROPROPENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	1.9/ND	1.0/ND	2.7/ND	2.1/ND	0.5/ND	0.1/ND	ND	ND
TRICHLOROETHENE	5.0 ug/l	0.5 ug/l	ND	ND	***183.0/ND	***142.8/ND	***275.0/ND	***220.5/ND	***41.8ND	***35.5/ND	***38.1/ND	***31.0/ND
1,2-DICHLOROPROPANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIBROMOMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
***cis*-1,3-DICHLOROPROPENE**	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROTRIFLUOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	0.9/ND	0.4/ND
TETRACHLOROETHENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	3.8/ND	3.2/ND

CONT. - CONTAMINANT

ND - NOT DETECTED

*** - EXCEEDS NEW YORK STATE/USEPA LIMITS FOR POTABLE WATER - BEFORE TREATMENT

( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. BGD-1 N-09591[19] MAX. RESULT (Raw/Treat)	WELL NO. BGD-1 N-09591[19] AVG. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915[24] MAX. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915[24] AVG. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916[24] MAX. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916[24] AVG. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004[24] MAX. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004[24] AVG. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876[24] MAX. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876[24] AVG. RESULT (Raw/Treat)
VOLATILE ORGANICS (CONT'D.)												
1,3-DICHLOROPROPANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-TETRACHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMOBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROPROPANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLOROTOLUENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROTOLUENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M,P-XYLENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O-XYLENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
STYRENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-PROPYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-TRIMETHYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

CONT. - CONTAMINANT
ND - NOT DETECTED
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. BGD-1 N-09591[19] MAX. RESULT (Raw/Treat)	WELL NO. BGD-1 N-09591[19] AVG. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915[24] MAX. RESULT (Raw/Treat)	WELL NO. 4-1 N-06915[24] AVG. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916[24] MAX. RESULT (Raw/Treat)	WELL NO. 4-2 N-06916[24] AVG. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004[24] MAX. RESULT (Raw/Treat)	WELL NO. 5-1 N-08004[24] AVG. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876[24] MAX. RESULT (Raw/Treat)	WELL NO. 6-1 N-03876[24] AVG. RESULT (Raw/Treat)
VOLATILE ORGANICS (CONT'D.)												
TERT-BUTYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRIMETHYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SEC-BUTYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-ISOPROPYLTOLUENE (P-CUMENE)	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-BUTYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL TERT.BUTYL ETHER (MTBE)	10.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

CONT. - CONTAMINANT
ND - NOT DETECTED
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. 6-2 N-08941(24) MAX. RESULT (Raw/Treat)	WELL NO. 6-2 N-08941(24) AVG. RESULT (Raw/Treat)	WELL NO. 7A N-08767(24) MAX. RESULT (Raw/Treat)	WELL NO. 7A N-08767(24) AVG. RESULT (Raw/Treat)	WELL NO. 8A N-08768(24) MAX. RESULT (Raw/Treat)	WELL NO. 8A N-08768(24) AVG. RESULT (Raw/Treat)	WELL NO. SPD-1 N-14110(15) MAX. RESULT	WELL NO. SPD-1 N-14110(15) AVG. RESULT
VOLATILE ORGANICS										
DICHLORODIFLUOROMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	2.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
BROMOMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	5.0 ug/l	0.5 ug/l	3.7/ND	3.1/ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	5.0 ug/l	0.5 ug/l	1.8/ND	1.4/ND	1.1/ND	0.9/ND	0.7/0.9	0.4/0.4	0.6/ND	0.04/ND
***cis*-1,2 DICHLOROETHENE**	5.0 ug/l	0.5 ug/l	2.6/ND	2.2/ND	ND	ND	ND	ND	ND	ND
2,2-DICHLOROPROPANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
BROMOCHLOROMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-TRICHLOROETHANE	5.0 ug/l	0.5 ug/l	0.6/ND	0.1/ND	ND	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	5.0 ug/l	0.5 ug/l	1.5/ND	1.1/ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROPROPENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5.0 ug/l	0.5 ug/l	***1860.0**/ND	***1305.0**/ND	0.6/ND	0.1/ND	ND	ND	ND	ND
1,2-DICHLOROPROPANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
DIBROMOMETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
***cis*-1,3-DICHLOROPROPENE**	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	5.0 ug/l	0.5 ug/l	0.7/ND	0.1/ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROTRIFLUOROETHANE	5.0 ug/l	0.5 ug/l	***6.2**/ND	2.4/ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5.0 ug/l	0.5 ug/l	2.2/ND	1.7/ND	ND	ND	ND	ND	ND	ND

CONT. - CONTAMINANT
ND - NOT DETECTED
*** - EXCEEDS NEW YORK STATE MAXIMUM CONTAMINANT LEVEL FOR POTABLE WATER BEFORE TREATMENT.
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. 6-2 N-08941(24) MAX. RESULT (Raw/Treat)	WELL NO. 6-2 N-08941(24) AVG. RESULT (Raw/Treat)	WELL NO. 7A N-08767(24) MAX. RESULT (Raw/Treat)	WELL NO. 7A N-08767(24) AVG. RESULT (Raw/Treat)	WELL NO. 8A N-08768(24) MAX. RESULT (Raw/Treat)	WELL NO. 8A N-08768(24) AVG. RESULT (Raw/Treat)	WELL NO. SPD-1 N-14110(15) MAX. RESULT	WELL NO. SPD-1 N-14110(15) AVG. RESULT
VOLATILE ORGANICS (CONT'D.)										
1,3-DICHLOROPROPANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-TETRACHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
BROMOBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROPROPANE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLOROTOLUENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROTOLUENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
M,P-XYLENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
O-XYLENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
STYRENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
N-PROPYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-TRIMETHYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND

CONT. - CONTAMINANT
ND - NOT DETECTED
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

BETHPAGE WATER DISTRICT
2017 WATER QUALITY DATA (continued)

PARAMETERS (ug/l)	MAX. CONT. LEVEL	DETECT. LIMITS	WELL NO. 6-2 N-08941(24) MAX. RESULT (Raw/Treat)	WELL NO. 6-2 N-08941(24) AVG. RESULT (Raw/Treat)	WELL NO. 7A N-08767(24) MAX. RESULT (Raw/Treat)	WELL NO. 7A N-08767(24) AVG. RESULT (Raw/Treat)	WELL NO. 8A N-08768(24) MAX. RESULT (Raw/Treat)	WELL NO. 8A N-08768(24) AVG. RESULT (Raw/Treat)	WELL NO. SPD-1 N-14110(15) MAX. RESULT	WELL NO. SPD-1 N-14110(15) AVG. RESULT
VOLATILE ORGANICS (CONT'D.)										
TERT-BUTYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRIMETHYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
SEC-BUTYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
4-ISOPROPYLTOLUENE (P-CUMENE)	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
N-BUTYLBENZENE	5.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
METHYL TERT.BUTYL ETHER (MTBE)	10.0 ug/l	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	ND

CONT. - CONTAMINANT
ND - NOT DETECTED
( ) - NUMBER OF SAMPLES COLLECTED AND TESTED DURING THE YEAR

APPENDIX D TOXICS TARGETING REPORT

TOXICS TARGETING

Phase I
Environmental Database Report

B.G.D. Plant
Bethpage, NY 11714

June 14, 2018

LIMITED WARRANTY AND DISCLAIMER OF LIABILITY

Who is Covered

This limited warranty is extended by Toxics Targeting, Inc. only to the original purchaser of the accompanying Environmental Report ("Report"). It may not be assigned to any other person.

What is Warranted

Toxics Targeting, Inc. warrants that it uses reasonable care to accurately transcribe the information contained in this Report from the sources from which it is obtained. This limited warranty is in lieu of all other express warranties which might otherwise arise with respect to the Report. No one is authorized to change or add to this limited warranty.

What We Will Do

If during the warranty period there is shown to be a material error in the transcription of the information contained in this Report from the sources from which it was obtained, Toxics Targeting, Inc. shall refund to the original purchaser the full purchase price paid for the Report. The remedy stated above is the exclusive remedy extended to the Purchaser by Toxics Targeting, Inc. for any failure of the Report to conform with this Warranty, or otherwise for breach of this Warranty or any other warranty, whether expressed or implied.

What We Won't Cover

Toxics Targeting, Inc. has not and can not verify the accuracy, correctness or completion of the information contained in this Report. Information is obtained from government agencies, site owners, and other sources, and errors are common in such information. Because Toxics Targeting, Inc. can not control the accuracy of the information contained in this Report, or the uses which may be made of the information, TOXICS TARGETING, INC. DISCLAIMS LIABILITY TO ANYONE FOR ANY EVENTS ARISING OUT OF THE USE OF THE INFORMATION. TOXICS TARGETING, INC. SHALL NOT BE LIABLE FOR ANY DAMAGE CAUSED BY THIS REPORT, WHETHER DIRECT OR INDIRECT, AND WHETHER OR NOT TOXICS TARGETING, INC. HAS BEEN ADVISED OF OR HAS KNOWLEDGE OF THE POSSIBILITY OF SUCH DAMAGES. TOXICS TARGETING, INC. EXPRESSLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.

Period of Warranty

The period of warranty coverage is ninety days from the date of purchase of this Report. There shall be no warranty after the period of coverage. ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR USE SHALL HAVE NO GREATER DURATION THAN THE PERIOD OF WARRANTY STATED HERE, AND SHALL TERMINATE AUTOMATICALLY UPON THE EXPIRATION OF SUCH PERIOD. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above exclusion or limitation may not apply to you.

PLEASE REFER TO PAGES ONE AND FIVE FOR A DESCRIPTION OF SOME OF THE LIMITATIONS OF THIS ENVIRONMENTAL REPORT.

Table of Contents

Introduction

Toxics Targeting has combined environmental database searches, extensive regulatory analysis and sophisticated mapping techniques to produce your *Environmental Report.* It checks for the presence of 21 categories of government-reported toxic sites and provides detailed, up-to-date information on each identified site. The findings of your report are presented in an easy-to-understand format that:

1. ***Maps*** the approximate locations of selected government-reported toxic sites identified on or near a specified target address.

2. ***Estimates*** the distance and direction between the target address and each identified toxic site.

3. ***Reports*** air and water permit non-compliance and other regulatory violations.

4. ***Profiles*** some aspects of the usage, manufacture, storage, handling, transport or disposal of toxic chemicals at individual sites.

5. ***Summarizes*** some potential health effect information and drinking water standards for selected chemicals reported at individual sites.

The Three Sections Of Your Report

The first section highlights your report's findings by summarizing identified sites according to: **a)** distance intervals, **b)** direction, **c)** proximity to the target address and **d)** individual site categories. In addition, the locations of all identified toxic sites are illustrated on individual maps for each radius search distance used in your report. A close-up map illustrates the locations of all identified toxic sites, at the shortest radius search distance used in your report. Finally, a map of tax parcels and a table of selected information about those parcels are included.

The second section of your report contains *Toxic Site Profiles* that provide detailed information on each identified toxic site. The information in each *Toxic Site Profile* varies according to its source. Some toxic site categories have extensive information, some have limited information. All the information is updated on a regular basis.

The third section of the report contains appendices that identify: **1)** on-site spills reported to the national Emergency Response Notification System (ERNS), **2)** various toxic sites that cannot be mapped due to incomplete or erroneous addresses or other mapping problems, **3)** codes that characterize hazardous wastes reported at various facilities, **4)** methods used to map toxic sites identified in your report and **5)** information sources used in your report.

How to Use Your Report

- Check Table One to see the number of identified sites by distance intervals.

- Check Table Two to see identified sites sorted by direction.

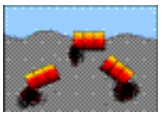
- Check Table Three to see identified sites sorted by site categories.

- Check Table Four to see identified sites ranked by proximity to the target address.

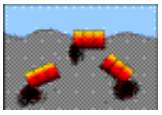
- Use Table Five to get info for the subject parcel and every parcel found on the Tax Parcel Map
- Refer to the various maps to see the locations of identified toxic sites. Refer to the *Toxic Site Profile* and *Appendix* sections for additional information.

Toxic Site Databases Analyzed In Your Report

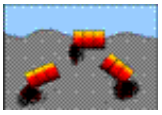
Search Radius

One-Mile 

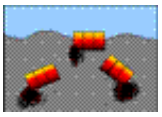
1) ***National Priority List for Federal Superfund Cleanup****:* a listing of sites known to pose environmental or health hazards that are being investigated or cleaned up under the Federal Superfund program.

Half-Mile 

2) ***Delisted National Priority List Sites****:* a listing of NPL sites that have been removed from the National Priority List.

One-Mile 

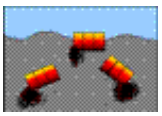
3) ***New York Inactive Hazardous Waste Disposal Site Registry****:* a state listing of sites that can pose environmental or public health hazards requiring investigation or clean up.

One-Mile 

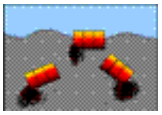
4) ***New York Inactive Hazardous Waste Disposal Site Registry Qualifying****:* a state listing of sites that qualify for possible inclusion to the NYS DEC Inactive Haz. Waste Disposal Site Registry.

One-Mile 

5) ***New York and Federal RCRA Corrective Action Activity (CORRACTS):*** waste facilities with RCRA corrective action activity reported by the USEPA and NYS DEC.

Half-Mile 

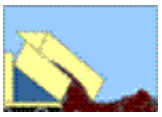
6) ***CERCLIS*** (Comprehensive Environmental Response, Compensation and Liability Information System): a federal listing of Non-NFRAP sites that can pose environmental or public health hazards requiring investigation or clean up.

Half-Mile 

7) ***CERCLIS NFRAP:*** a federal listing of CERCLIS sites that have no further remedial action planned.

Half-Mile 

8) ***New York State Brownfield Cleanup Sites****:* a listing of sites that are abandoned, idled or under-used industrial and commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.

Half-Mile 

9) ***New York Solid Waste Facilities Registry****:* active and inactive landfills, incinerators, transfer stations or other solid waste management facilities.

Half-Mile 

10) ***New York and Federal Hazardous Waste Treatment, Storage or Disposal Facilities****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRIS). Also includes the following database:

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act..

Half-Mile 

11) ***Toxic Spills: active and inactive or closed*** spills reported to state environmental authorities, including *remediated* and *unremediated* leaking underground storage tanks. This database includes the following categories:

- Tank Failures
- Tank Test Failures
- Unknown Spill Cause or Other Spill Causes
- Miscellaneous Spill Causes

Quarter-Mile 

12) ***New York State Major Oil Storage Facilities****:* sites with more than a 400,000-gallon capacity for storing petroleum products.

Quarter-Mile 

13) ***New York and Local Petroleum Bulk Storage Facilities****:* sites with more than a 1,100-gallon capacity for storing petroleum products.

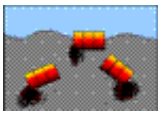
Quarter-Mile 

14) ***New York and Federal Hazardous Waste Generators and Transporters****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRA). Also includes the following database:

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act.

Quarter-Mile 

15) ***New York Chemical Bulk Storage Facilities****:* sites storing hazardous substances listed in 6 NYCRR Part 597 in aboveground tanks with capacities of 185 gallons or more and/or underground tanks of any size

Half-Mile 

16) ***New York Hazardous Substance Disposal Site Draft Study****:* a state listing of sites contaminated with toxic substances that can pose environmental or public health hazards. These sites are not eligible for state clean up funding programs.

Quarter-Mile 

17) ***Federal Toxic Release Inventory Facilities****:* discharges of selected toxic chemicals to air, land, water or treatment facilities.

Quarter-Mile 

18) ***Federal Air Discharges****:* Air pollution point sources monitored by U.S. EPA and/or state and local air regulatory agencies.

Quarter-Mile 

19) ***Federal Permit Compliance System Toxic Wastewater Discharges:*** permitted toxic wastewater discharges.

Quarter-Mile 

20) ***Federal Civil and Administrative Enforcement Docket****:* judiciary cases filed on behalf of the U. S. Environmental Protection Agency by the Department of Justice.

Property only 

21) ***ERNS: Federal Emergency Response Notification System Spills****:* a listing of federally reported spills.

Limitations Of The Information In Your Report

The information presented in your *Environmental Report* has been obtained from various local, state and federal government agencies. Please be aware that: **1)** additional information on individual sites may be available, **2)** newly discovered sites are continually reported and **3)** all map locations are approximate. As a result, this report is intended to be the FIRST STEP in the process of identifying and evaluating possible environmental threats to specific properties and can only serve as a guide for conducting on-site visits or additional, more detailed toxic hazard research.

Toxics Targeting tries to ensure that the information in your report is presented accurately and with minimal alteration. The only systematic changes that are made correct obvious address errors in order to allow sites to be mapped. Any address changes that are made are noted in the map information section at the top of each corresponding *Toxic Site Profile*. Since the information presented in your report is not edited, please be aware that it can contain reporting errors or typographical mistakes made by the site owners/operators or government agencies that produced the information. Please be aware of some other limitations of the information in your report:

- The map used by *Toxics Targeting* is the same one used by the U. S. Census. While the map is generally accurate, no map is perfect. In addition, *Toxics Targeting's* mapping methods estimate where toxic site addresses are located if the address is not specifically designated on the Census map. FOR THESE REASONS, ALL MAP LOCATIONS OF ADDRESSES AND REPORTED TOXIC SITES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY ON-SITE VISITS;

- UNDISCOVERED, UNREPORTED OR UNMAPPABLE TOXIC SITES MIGHT NOT BE IDENTIFIED BY THIS REPORT'S CHECK OF 21 TOXIC SITE CATEGORIES. TOXIC SITES REPORTED IN OTHER GOVERNMENT DATABASES MIGHT ALSO EXIST. FOR THESE REASONS, YOUR REPORT MIGHT NOT IDENTIFY ALL THE TOXIC SITES THAT EXIST IN THE AREA IT SEARCHES;

- The appendix of your report contains a listing of sites that could not be mapped due to incomplete or erroneous address information or other mapping problems. This listing includes unmappable toxic sites in zip code areas within one mile of the target address as well as toxic sites without zip codes reported in the same county. IF YOU WOULD LIKE INFORMATION ON ANY OF THE LISTED SITES, PLEASE CONTACT *TOXICS TARGETING AND REFER TO THE SITE ID NUMBER.*

- Some toxic sites identified in your report may be classified as **known hazards**. Most of the toxic sites identified in your report involve **potential hazards** related to the on-site use, manufacture, handling, storage, transport or disposal of toxic chemicals. Some of the toxic sites identified in your report may be the addresses of parties responsible for toxic sites located elsewhere. YOU SHOULD ONLY CONCLUDE THAT TOXIC HAZARDS ACTUALLY EXIST AT A SPECIFIC SITE WHEN GOVERNMENT AUTHORITIES MAKE THAT DETERMINATION OR WHEN THAT CONCLUSION IS FULLY DOCUMENTED BY THE FINDINGS OF AN APPROPRIATE SITE INVESTIGATION UNDERTAKEN BY LICENSED PROFESSIONALS;

- Compass directions and distances are approximate. Compass directions are calculated from the subject property address to the mapped location of each identified toxic site. The compass direction does not necessarily refer to the closest property boundary of an identified toxic site. The compass direction also can vary substantially for toxic sites that are located very close to the subject property address.

- The information presented in your report is a summary of the information that *Toxics Targeting* obtains from government agencies on reported toxic sites. YOU MAY BE ABLE TO OBTAIN ADDITIONAL INFORMATION ABOUT REPORTED SITES WITH THE FREEDOM OF INFORMATION REQUEST FORM LETTERS THAT ARE PROVIDED ON THE INSIDE OF THE BACK COVER.

Section One:

Report Summary

- *Table One: Number of Identified Toxic Sites By Distance Interval*
- *Table Two: Identified Toxic Sites By Direction*
- *Table Three: Identified Toxic Sites By Category*
- *Table Four: Identified Toxic Sites By Proximity*
- *Map One: One-Mile Radius Map*
- *Map Two: Half-Mile Radius Map*
- *Map Three: Quarter-Mile Radius Map*
- *Map Four: Quarter-Mile Radius Close up Map*

NUMBER OF IDENTIFIED SITES BY DISTANCE INTERVAL

Database Searched	0 − 100 ft	100 ft − 1/8 mi	1/8 mi − 1/4 mi	1/4 mi − 1/2 mi	1/2 mi − 1 mi	Site Category Totals
ASTM−Required 1 Mile Search						
National Priority List (NPL) Sites	0	0	0	0	0	0
NYS Inactive Hazardous Waste Disposal Site Registry	0	0	0	0	2	2
NYS Inactive Haz Waste Disposal Site Registry Qualifying	0	0	0	0	0	0
RCRA Corrective Action (CORRACTS) Sites	0	0	0	0	0	0
ASTM−Required 1/2 Mile Search						
Delisted National Priority List (NPL) Sites	0	0	0	0	Not searched	0
CERCLIS Superfund Non−NFRAP Sites	0	0	0	0	Not searched	0
CERCLIS Superfund NFRAP Sites	0	0	0	0	Not searched	0
Brownfields Sites						
Voluntary Cleanup Program	0	0	0	0	Not searched	0
Environmental Restoration Program	0	0	0	0	Not searched	0
Brownfield Cleanup Program	0	0	0	0	Not searched	0
NYSDEC Solid Waste Facilities / Landfills	0	0	0	0	Not searched	0
RCRA Hazardous Waste Treatment, Storage, Disposal Sites	0	0	0	0	Not searched	0
NYS Toxic Spills						
Active Tank Failures	0	0	0	0	Not searched	0
Active Tank Test Failures	0	0	0	0	Not searched	0
Active Spills − Unknown / Other Causes	0	0	0	0	Not searched	0
Active Spills − Miscellaneous Causes	0	0	0	0	Not searched	0
Closed Tank Failures	0	0	0	1	Not searched	1
Closed Tank Test Failures	0	0	0	0	Not searched	0
Closed Spills − Unknown / Other Causes	0	1	0	12	Not searched	13
Closed Spills − Miscellaneous Causes	0	2	1	3(13)	Not searched	6(13)
ASTM−Required Property & Adjacent Property (1/4 Mile Search)						
NYS Major Oil Storage Facilities	0	0	0	Not searched	Not searched	0
Local & State Petroleum Bulk Storage Sites	2	1	0	Not searched	Not searched	3
RCRA Hazardous Waste Generators & Transporters	0	1	0	Not searched	Not searched	1
NYS Chemical Bulk Storage Sites	1	0	0	Not searched	Not searched	1
Emergency Response Notification System (ERNS)	0	Not searched	Not searched	Not searched	Not searched	0
Institutional Controls / Engineering Controls (IC/EC)	See databases for NPL, CERCLIS, Inactive Hazardous Waste Disposal Site Registry and Brownfield Sites.					
ASTM−Required Databases Distance Interval Totals	**3**	**5**	**1**	**16(13)**	**2**	**27(13)**

Numbers in ( ) indicate spills not mapped and profiled in this report, and are listed at the end of the active and closed spills sections. See these lists for a description of the parameters involved with identifying these spills.

NOTE: Table continues on next page.

Non−ASTM Databases 1/2 Mile Search						
Hazardous Substance Waste Disposal Sites	0	0	0	0	Not searched	0
Non−ASTM Databases 1/4 Mile Search						
Toxic Release Inventory Sites (TRI)	0	0	0	Not searched	Not searched	0
Permit Compliance System (PCS) Toxic Wastewater Discharges	0	0	0	Not searched	Not searched	0
Air Discharges	0	0	0	Not searched	Not searched	0
Civil & Administrative Enforcement Docket Facilities	0	0	0	Not searched	Not searched	0
Non−ASTM Databases Distance Interval Totals	**0**	**0**	**0**	**0**	**Not Searched**	**0**
Distance Interval Totals	***3***	***5***	***1***	***16(13)***	***2***	***27(13)***

Numbers in ( ) indicate spills not mapped and profiled in this report, and are listed at the end of the active and closed spills sections. See these lists for a description of the parameters involved with identifying these spills.

Identified Toxic Sites by Direction

B.G.D. Plant
Bethpage, NY 11714

* Compass directions can vary substantially for sites located very close to the subject property address.

Sites less than 100 feet from subject property sorted by distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
27	PLANT NO. BGD−1	PLAINVIEW ROAD	0 feet	Chemical Bulk Storage Facility
23	BETHPAGE W.D. BGD−1	PLAINVIEW RD.	0 feet	Petroleum Bulk Storage Site
24	BETHPAGE WATER DISTRICT−BGD−1	PLAINVIEW RD	0 feet	Petroleum Bulk Storage Site

Sites between 100 ft and 660 ft from the subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
25	CHARLES CAMPAGNE SCHOOL	PLAINVIEW RD.	458 feet to the N	Petroleum Bulk Storage Site
4	UNKNOWN	SOB EXIT 9 SO BOUND	553 feet to the SSW	Closed Status Spill (Unk/Other Cause)
17	NYSDOT	PLAINVIEW RD UNDER RT 135	553 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
18	SLOMINS OIL	BROADWAY & RTE 135	553 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
26	NYSDOT	ROUTE 135/BROADWAY	553 feet to the SSW	Hazardous Waste Generator/Transporter

Sites equal to or greater than 660 ft from subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
11	VANADIA RESIDENCE	6 DOROTHEA STREET	2193 feet to the N	Closed Status Spill (Unk/Other Cause)
6	BRODSKY RESIDENCE	9 SUSANNE LANE	1551 feet to the NNE	Closed Status Spill (Unk/Other Cause)
10	GILDA OMAGE RESIDENCE	22 MICHAEL COURT	2111 feet to the SSW	Closed Status Spill (Unk/Other Cause)
20	JFK MIDDLE SCHOOL	500 BROADWAY	2529 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
7	BETHPAGE COMMUNITY CENTER	600 BROADWAY	1622 feet to the SW	Closed Status Spill (Unk/Other Cause)
13	LIPA POLE 5	SYCAMORE AVE / 30 LINCOLN ROAD	2254 feet to the SW	Closed Status Spill (Unk/Other Cause)
14	RESIDENCE	2 LINDEN AVENUE	2425 feet to the SW	Closed Status Spill (Unk/Other Cause)
5	SHUMSKI RESIDENCE	8 SILBER AVENUE	1426 feet to the WSW	Closed Status Spill (Unk/Other Cause)
2	NAVAL WEAPONS IND. RESERVE PLANT	SOUTH OYSTER BAY ROAD	5257 feet to the WSW	NYSDEC Inactive Haz Waste Disposal Site
19	MULCASY RESIDENCE	10 ROBERT COURT	945 feet to the W	Closed Status Spill (Misc. Spill Cause)
3	DOBBIE RESIDENCE	4 HELEN COURT	1632 feet to the W	Closed Status Tank Failure

8	ED PESSANE RESIDENCE	8 PEARL STREET	1670 feet to the W	Closed Status Spill (Unk/Other Cause)
16	SPILL NUMBER 9415203	EVERGREEN & SPRUCE AVE	2499 feet to the W	Closed Status Spill (Unk/Other Cause)
22	ZIRK RESIDENCE	33 SPRUCE AVENUE	2633 feet to the W	Closed Status Spill (Misc. Spill Cause)
1	TOWN OF OYSTER BAY ICE SKATING CENTER	STEWART AVENUE	3270 feet to the W	NYSDEC Inactive Haz Waste Disposal Site
12	LARRY NALLIA RESIDENCE	78 SPRUCE AVENUE	2240 feet to the WNW	Closed Status Spill (Unk/Other Cause)
21	WOJTUSIAK RESIDENCE	16 FLORAL AVENUE	2587 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
9	RESIDENCE	89 SILVBER AVENUE	1876 feet to the NW	Closed Status Spill (Unk/Other Cause)
15	UNK	61 BURTON AVENUE	2430 feet to the NNW	Closed Status Spill (Unk/Other Cause)

Identified Toxic Sites by Category

B.G.D. Plant
Bethpage, NY 11714

* Compass directions can vary substantially for sites located very close to the subject property address.

NYSDEC Inactive Haz. Waste Disposal Site Registry −− Total Sites − 2 — **Database searched at 1 MILE − ASTM required search distance: 1 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
1	130003D	TOWN OF OYSTER BAY ICE SKATING CENTER	STEWART AVENUE	3270 feet to the W
2	130003B	NAVAL WEAPONS IND. RESERVE PLANT	SOUTH OYSTER BAY ROAD	5257 feet to the WSW

Closed Status Tank Failures −− Total Sites − 1 — **Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
3	0110007	DOBBIE RESIDENCE	4 HELEN COURT	1632 feet to the W

Closed Status Spills (Unknown Causes & Other Causes) −− Total Sites − 13 — **Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
4	9310169	UNKNOWN	SOB EXIT 9 SO BOUND	553 feet to the SSW
5	8910897	SHUMSKI RESIDENCE	8 SILBER AVENUE	1426 feet to the WSW
6	0408332	BRODSKY RESIDENCE	9 SUSANNE LANE	1551 feet to the NNE
7	0312319	BETHPAGE COMMUNITY CENTER	600 BROADWAY	1622 feet to the SW
8	0409135	ED PESSANE RESIDENCE	8 PEARL STREET	1670 feet to the W
9	9306397	RESIDENCE	89 SILVBER AVENUE	1876 feet to the NW
10	0750890	GILDA OMAGE RESIDENCE	22 MICHAEL COURT	2111 feet to the SSW
11	0604602	VANADIA RESIDENCE	6 DOROTHEA STREET	2193 feet to the N
12	9210656	LARRY NALLIA RESIDENCE	78 SPRUCE AVENUE	2240 feet to the WNW
13	0708241	LIPA POLE 5	SYCAMORE AVE / 30 LINCOLN ROAD	2254 feet to the SW
14	0103325	RESIDENCE	2 LINDEN AVENUE	2425 feet to the SW
15	9009167	UNK	61 BURTON AVENUE	2430 feet to the NNW
16	9415203	SPILL NUMBER 9415203	EVERGREEN & SPRUCE AVE	2499 feet to the W

Closed Status Spills (Miscellaneous Spill Causes) −− Total Sites − 6 — **Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
17	9403069	NYSDOT	PLAINVIEW RD UNDER RT 135	553 feet to the SSW
18	8603008	SLOMINS OIL	BROADWAY & RTE 135	553 feet to the SSW
19	0604293	MULCASY RESIDENCE	10 ROBERT COURT	945 feet to the W
20	9813605	JFK MIDDLE SCHOOL	500 BROADWAY	2529 feet to the SSW
21	9509836	WOJTUSIAK RESIDENCE	16 FLORAL AVENUE	2587 feet to the WNW
22	0106310	ZIRK RESIDENCE	33 SPRUCE AVENUE	2633 feet to the W

Petroleum Bulk Storage Sites −− Total Sites − 3 — **Database searched at 1/4 MILE − ASTM required search distance: Property & Adjacent**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
23	001624	BETHPAGE W.D. BGD−1	PLAINVIEW RD.	0 feet
24	2064285	BETHPAGE WATER DISTRICT−BGD−1	PLAINVIEW RD	0 feet
25	052346	CHARLES CAMPAGNE SCHOOL	PLAINVIEW RD.	458 feet to the N

Hazardous Waste Generators, Transporters −− Total Sites − 1 — **Database searched at 1/4 MILE − ASTM required search distance: Property & Adjacent**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
26	NY0000348466	NYSDOT	ROUTE 135/BROADWAY	553 feet to the SSW

Chemical Bulk Storage Facilities −− Total Sites − 1 — **Database searched at 1/4 MILE − ASTM required search distance: Property & Adjacent**

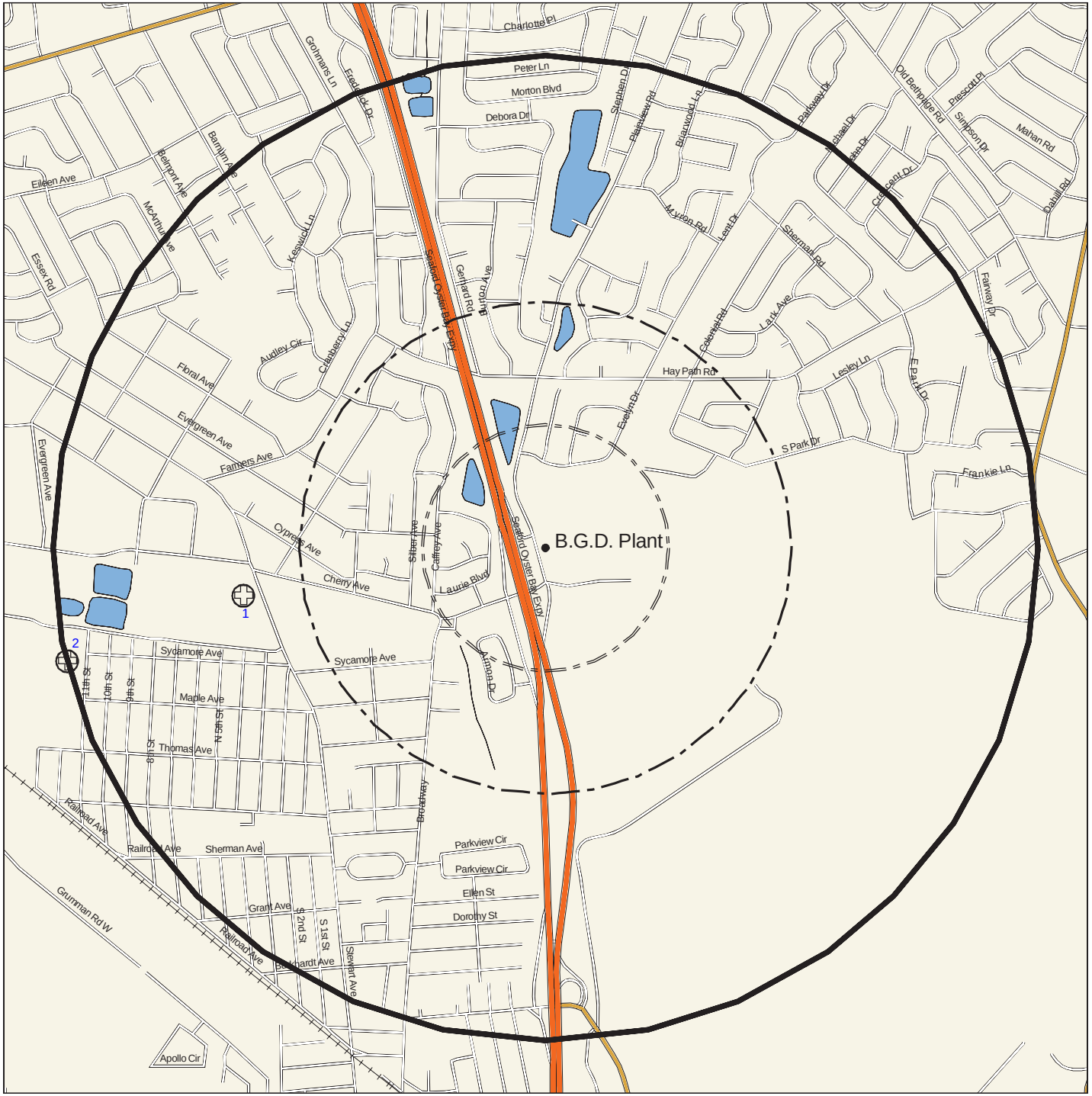
MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
27	1−000518	PLANT NO. BGD−1	PLAINVIEW ROAD	0 feet

Identified Toxic Sites by Proximity

B.G.D. Plant, Bethpage, NY 11714

* Compass directions can vary substantially for sites located very close to the subject property address.

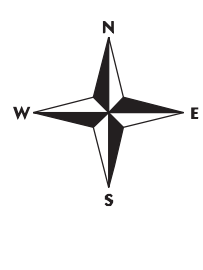
Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
27	PLANT NO. BGD−1	PLAINVIEW ROAD	0 feet	Chemical Bulk Storage Facility
23	BETHPAGE W.D. BGD−1	PLAINVIEW RD.	0 feet	Petroleum Bulk Storage Site
24	BETHPAGE WATER DISTRICT−BGD−1	PLAINVIEW RD	0 feet	Petroleum Bulk Storage Site
25	CHARLES CAMPAGNE SCHOOL	PLAINVIEW RD.	458 feet to the N	Petroleum Bulk Storage Site
4	UNKNOWN	SOB EXIT 9 SO BOUND	553 feet to the SSW	Closed Status Spill (Unk/Other Cause)
17	NYSDOT	PLAINVIEW RD UNDER RT 135	553 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
18	SLOMINS OIL	BROADWAY & RTE 135	553 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
26	NYSDOT	ROUTE 135/BROADWAY	553 feet to the SSW	Hazardous Waste Generator/Transporter
19	MULCASY RESIDENCE	10 ROBERT COURT	945 feet to the W	Closed Status Spill (Misc. Spill Cause)
5	SHUMSKI RESIDENCE	8 SILBER AVENUE	1426 feet to the WSW	Closed Status Spill (Unk/Other Cause)
6	BRODSKY RESIDENCE	9 SUSANNE LANE	1551 feet to the NNE	Closed Status Spill (Unk/Other Cause)
7	BETHPAGE COMMUNITY CENTER	600 BROADWAY	1622 feet to the SW	Closed Status Spill (Unk/Other Cause)
3	DOBBIE RESIDENCE	4 HELEN COURT	1632 feet to the W	Closed Status Tank Failure
8	ED PESSANE RESIDENCE	8 PEARL STREET	1670 feet to the W	Closed Status Spill (Unk/Other Cause)
9	RESIDENCE	89 SILVBER AVENUE	1876 feet to the NW	Closed Status Spill (Unk/Other Cause)
10	GILDA OMAGE RESIDENCE	22 MICHAEL COURT	2111 feet to the SSW	Closed Status Spill (Unk/Other Cause)
11	VANADIA RESIDENCE	6 DOROTHEA STREET	2193 feet to the N	Closed Status Spill (Unk/Other Cause)
12	LARRY NALLIA RESIDENCE	78 SPRUCE AVENUE	2240 feet to the WNW	Closed Status Spill (Unk/Other Cause)
13	LIPA POLE 5	SYCAMORE AVE / 30 LINCOLN ROAD	2254 feet to the SW	Closed Status Spill (Unk/Other Cause)
14	RESIDENCE	2 LINDEN AVENUE	2425 feet to the SW	Closed Status Spill (Unk/Other Cause)
15	UNK	61 BURTON AVENUE	2430 feet to the NNW	Closed Status Spill (Unk/Other Cause)
16	SPILL NUMBER 9415203	EVERGREEN & SPRUCE AVE	2499 feet to the W	Closed Status Spill (Unk/Other Cause)
20	JFK MIDDLE SCHOOL	500 BROADWAY	2529 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
21	WOJTUSIAK RESIDENCE	16 FLORAL AVENUE	2587 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
22	ZIRK RESIDENCE	33 SPRUCE AVENUE	2633 feet to the W	Closed Status Spill (Misc. Spill Cause)
1	TOWN OF OYSTER BAY ICE SKATING CENTER	STEWART AVENUE	3270 feet to the W	NYSDEC Inactive Haz Waste Disposal Site
2	NAVAL WEAPONS IND. RESERVE PLANT	SOUTH OYSTER BAY ROAD	5257 feet to the WSW	NYSDEC Inactive Haz Waste Disposal Site

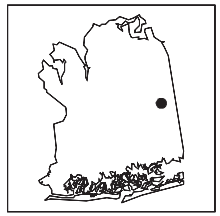


Toxics Targeting
1 Mile Radius Map

B.G.D. Plant

Bethpage, NY 11714





Nassau County

National Priority List (NPL)

Inactive Hazardous Waste Disposal Registry Site

Inact. Haz Waste Disp. Registry Qualifying

RCRA Corrective Action Facility

Site Location

Waterbody

County Border

Railroad Tracks

1 Mile Radius

1/2 Mile Radius

1/4 Mile Radius

1/8 Mile Radius

1 0 1/8 1/4 1/2 1

Distance in Miles

1/2 0 1/16 1/8 1/4 1/2

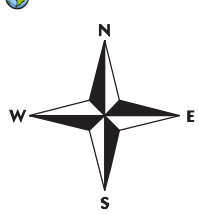
Distance in Miles

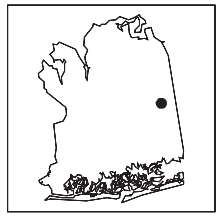
Toxics Targeting 1/2 Mile Radius Map

Excludes Closed Spills

B.G.D. Plant

Bethpage, NY 11714





Nassau County

- Delisted NPL Site
- CERCLIS Superfund Non-NFRAP Site
- CERCLIS Superfund NFRAP Site
- Hazardous Waste Treater, Storer, Disposer
- Hazardous Substance Waste Disposal Site
- Solid Waste Facility
- Brownfields Site
- Active Spill

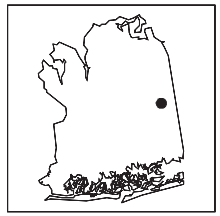
- Site Location
- Waterbody
- County Border
- Railroad Tracks
- 1 Mile Radius
- 1/2 Mile Radius
- 1/4 Mile Radius
- 1/8 Mile Radius

Toxics Targeting
1/2 Mile Radius Map

Closed Spills only

B.G.D. Plant

Bethpage, NY 11714



Nassau County

Closed Spill

Site Location

Waterbody

County Border

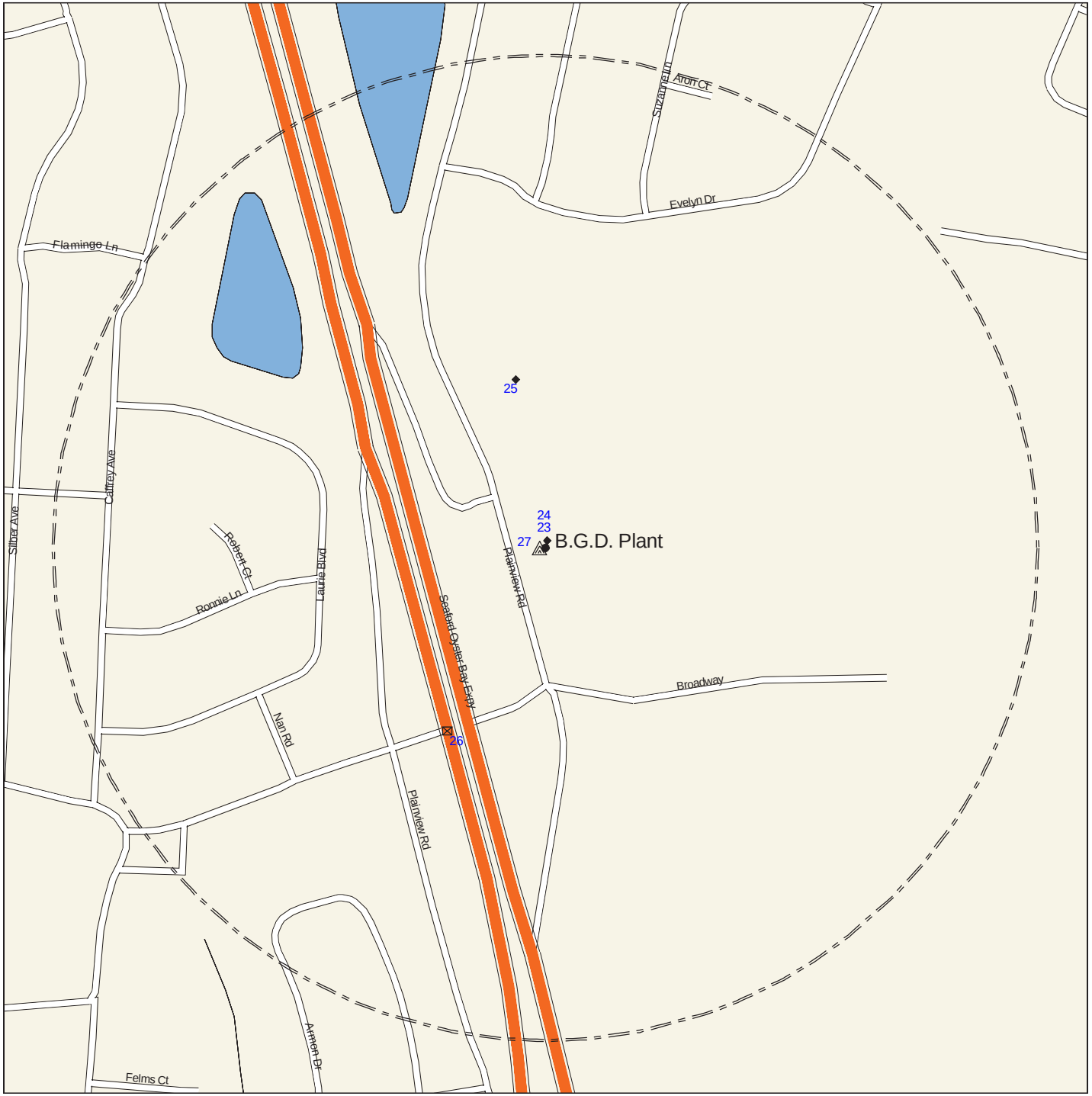
Railroad Tracks

1 Mile Radius

1/2 Mile Radius

1/4 Mile Radius

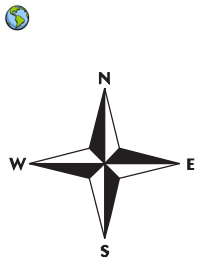
1/8 Mile Radius

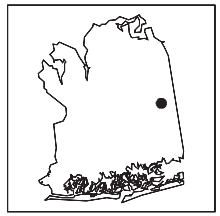


Toxics Targeting
1/4 Mile Radius Map

B.G.D. Plant

Bethpage, NY 11714





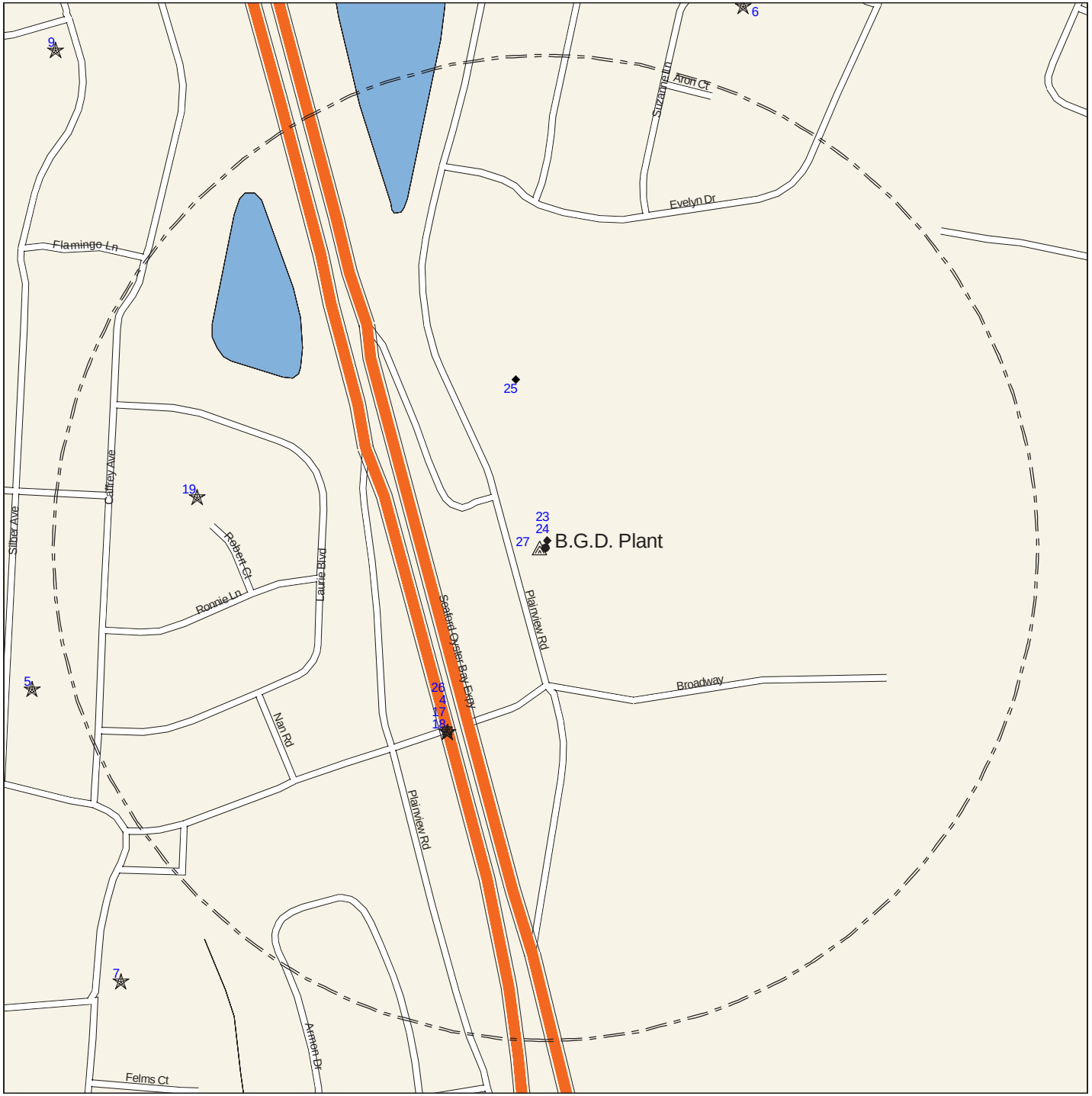
Nassau County

- Major Oil Storage Facility
- Chemical Storage Facility
- Toxic Release
- Wastewater Discharge
- Enforcement Docket Facility
- Air Release
- Petroleum Bulk Storage Facility
- Hazardous Waste Generator, Transp.

- Site Location
- County Border
- 1/4 Mile Radius
- Waterbody
- Railroad Tracks
- 1/8 Mile Radius

1/4 0 1/8 1/4

Distance in Miles

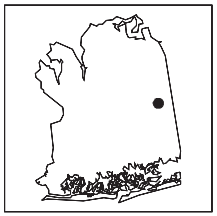


Toxics Targeting
1/4 Mile Closeup Map

B.G.D. Plant

Bethpage, NY 11714

N
W
E
S



Nassau County

- National Priority List (NPL) *
- Delisted NPL Site **
- CERCLIS Superfund Non-NFRAP Site **
- CERCLIS Superfund NFRAP Site **
- Inactive Hazardous Waste Disposal Registry Site *
- Inact. Haz Waste Disp. Registry Qualifying *
- Hazardous Waste Treater, Storer, Disposer **
- RCRA Corrective Action Facility *
- Hazardous Substance Waste Disposal Site **
- Solid Waste Facility **
- Major Oil Storage Facility ***
- Brownfields Site **
- Chemical Storage Facility ***
- Hazardous Material Spill **
- Toxic Release ***
- Wastewater Discharge ***
- Petroleum Bulk Storage Facility ***
- Enforcement Docket Facility ***
- Hazardous Waste Generator, Transp. ***
- Air Release ***
- Remediation Site Borders

- Site Location
- Waterbody
- County Border
- Railroad Tracks
- 1/4 Mile Radius
- 1/8 Mile Radius

* 1 Mile Search Radius

** 1/2 Mile Search Radius

*** 1/4 Mile Search Radius

Section Two: Toxic Site Profiles

The heading of each *Toxic Site Profile* refers to the site's map location and details:

- The facility name, address, city, state, and zip code.
- Any changes that were made to a site's address in order to map its location.
- The site mapping method that was used (see ***How Sites are Located***, at the end of this section for more information).

Toxic Site Profiles summarize information provided by site owners or operators and government agencies regarding various toxic chemical activities reported at each site, such as:

- Whether chemicals were stored, produced, transported, discharged or disposed of.
- The name of chemicals and their Chemical Abstract Series (CAS) numbers.
- The amount of chemicals and the units (gallons/pounds) the chemical was measured in.
- Whether the site or storage tanks at the site are currently active or inactive.
- Special codes used by government agencies to regulate hazardous waste activities at some sites, or a complete description of the codes follows the profiles section.

For selected individual chemicals reported at various toxic sites, some potential health effect summary information appears below the site profile. Each potential health effect summary identifies chemicals by name and by Chemical Abstract Series (CAS) Number. An "x" under each potential health effect heading indicates positive toxicity testing results reported by the National Institute of Occupational Safety and Health's Registry of Toxic Effects of Chemical Substances (RTECS). Some chemicals (mostly appearing in profiles of Hazardous Waste facilities), are reported as mixtures, and RTECS health effect information is only available for individual chemicals. In addition, RTECS only provides information on approximately 100,000 common chemicals. Consequently, the absence of potential health effect summary information for a particular chemical identified in a Toxic Site Profile does not necessarily mean that the chemical does not pose potential health effects.

The Maximum Contaminant Level (MCL) in drinking water allowed for selected chemicals is also noted. In most cases, the only applicable MCL has been set by the New York State Department of Health (NYSDOH). Where NYSDOH has not set an MCL, the federal standard, if one exists, is listed and is marked by an asterisk.

Presented below are column headings that describe the health effect definitions used in RTECS and applicable New York State and federal drinking water standards. Reference sources for information presented in this section are also provided.

ACUTE TOX: **Acute Toxicity**: Short-term exposure to this chemical can cause lethal and non-lethal toxicity effects not included in the following four categories.

TUMOR TOX: **Tumorigenic Toxicity**: The chemical can cause an increase in the incidence of tumors.

MUTAG TOX: **Mutagenic Toxicity**: The chemical can cause genetic alterations that are passed from one generation to the next.

REPRO TOX: **Reproductive Toxicity**: May signify one of the following effects: maternal effects, paternal effects, effects on fertility, effects on the embryo or fetus, specific developmental abnormalities, tumorigenic effects, or effects on the newborn (only positive reproductive effects data for mammalian species are referenced).

IRRIT TOX: **Primary Irritant**: The chemical can cause eye or skin irritation.

MCL: **Drinking Water Standard - Maximum Contaminant Level** (MCL) listed under Drinking Water Supplies, 10 NYCRR Part 5, Subparts 1.51(f),(g), and (h) for NYDOH MCL's and under the Safe Drinking Water Act, 40 CFR 141, Subparts B and G, (* indicates value for total trihalomethanes) for federal MCL's.

Reference Source for Toxicity Information: Registry of Toxic Effects of Chemical Substances (RTECS), NIOSH (on-line database); For further information, contact: NIOSH, 4676 Columbia Parkway, Cincinnati, OH, 45226, 800/35-NIOSH.

Reference Source for Drinking Water Standards: New York State Department of Health, Bureau of Toxic Substances Assessment, 2 University Place, Room 240, Albany, NY 12203, 518/458-6373.

U.S. Environmental Protection Agency, Office of Drinking Water, 401 M St SW, Mailstop WH-556, Washington, DC, 20460, 202/260-5700.

Inactive Hazardous Waste Disposal Site Classifications:

1 -- Causing or presenting an imminent danger of causing irreversible or irreparable damage to the public health or the environment -- immediate action required;
2 -- Significant threat to the public health or environment -- action required;
3 -- Does not Present a significant threat to the environment or public health -- action may be deferred;
4 -- Site properly closed --requires continued management;
5 -- Site properly closed, no evidence of present or potential adverse impact -- no further action required;
2a -- This temporary classification has been assigned to sites where there is inadequate data to assign them to the five classifications specified by law;
A -- Work underway and not yet complete;
P -- Potential Site;
$D_{1, 2, 3}$ -- Delisted Site (1: hazardous waste not found; 2: remediated; 3: consolidated site or site incorrectly listed);
C -- Remediation Complete (formerly D2).

NO NATIONAL PRIORITIES LIST (NPL) SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

INACTIVE HAZ WASTE DISPOSAL REGISTRY OR REGISTRY−QUALIFYING SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 1 **TOWN OF OYSTER BAY ICE SKATING CENTER** **Facility Id: 130003D**
STEWART AVENUE BETHPAGE, NY 11714 TT−Id: 120A−0007−397

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 3270 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: STEWART AVE
Revised zip code: NO CHANGE

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 130003D
CLASSIFICATION CODE: N REGION: 1 DEC ID: 444904
CLASSIFICATION CODE DESCRIPTION:
No further action

NAME OF SITE: Town of Oyster Bay Ice Skating Center
STREET ADDRESS: Stewart Avenue TOWN: Oyster Bay
CITY: Bethpage ZIP: 11714 COUNTY: Nassau

ESTIMATED SIZE: 1.5 Acres

The following site type information has been deleted from the registry. Data reflects previous information.
SITE TYPE: Dump- Structure-X Lagoon- Landfill- Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:
None reported

CROSS REFERENCES:
None reported

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:
CURRENT OWNER(S):
NAME: Town of Oyster Bay Owner Type: PRP - Non-Registry HazSubs

John Elsworth
ADDRESS: Town Hall, 54 Audrey Ave.
Oyster Bay, NY 11771

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:

HAZARDOUS WASTE DISPOSAL PERIOD:

SITE DESCRIPTION:
See C130212

CONFIRMED HAZARDOUS WASTE DISPOSED:
None reported

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Nature and Extent of Contamination: The Grumman (site ID No.130003A) OU 3 investigation of the former settling ponds found significant soil, soil vapor, and groundwater contamination at Bethpage Community Park. In addition to the contamination originating at the former Grumman settling ponds, significant groundwater and soil vapor contamination with Freon compounds was found to be emanating from the former outdoor ice skating rink. These compounds {Chlorodifluoromethane (Freon 22) and Dichlorodifluoromethane (Freon 12)} had been used as refrigerants at the rink and leaks in the refrigeration system had been documented.

Trace levels of Freon 22 were found in shallow soil under the old rink. The maximum Freon 22 concentration in groundwater was found to be 290 ug/L just downdradient of the ice rink with concentrations greater than 100 ug/L persisting to the downgradient extent of Bethpage Community Park. The Freon plume is generally east of and below the VOC plume emanating from the former Grumman settling ponds(the OU 3 plume)but comingles with it as both plumes move southward. Freons 12 and 22 were found in soil gas in the vicinity of the ice rink at levels as high as 646,000 ug/m3. Freon 22 was found in soil gas on school property across the street from the ice rink at 98,100 ug/m3, immediately adjacent to the high school building at 526 ug/m3, in crawl space air at the high school at 49.7 ug/m3, and in the first floor at 12 ug/m3. Most contaminated soils on the 7-acre portion of the park where the ice skating facility is located were removed by the Town of Oyster Bay as an Interim Remedial Measure in connection with redevelopment of the new ice skating facility. Additional on-site and off-site remediation is required.

Special Resources Impacted/Threatened: The Long Island Sole Source Aquifer has been impacted. Significant Threat: This site presents a significant threat due to the release of contaminants from the source area into groundwater and soil vapor.

ASSESSMENT OF HEALTH PROBLEMS:
None provided

PROJECT COMPLETIONS:
None reported

The New York State Department of Environmental Conservation has not publicly updated the following fields since 2003:

ANALYTICAL DATA AVAILABLE FOR: Air- Surface Water- Groundwater- Soil- Sediment-
APPLICABLE STANDARDS EXCEEDED IN: Groundwater- Drinking Water- Surface Water- Air-

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE:
GROUNDWATER DEPTH:

LEGAL ACTION: Type: State- Federal-
STATUS: Negotiation in Progress- Order Signed-
REMEDIAL ACTION: Proposed- Under Design- In Progress- Completed-
NATURE OF ACTION:

Map Identification Number 2 **NAVAL WEAPONS IND. RESERVE PLANT** **Facility Id: 130003B**
SOUTH OYSTER BAY ROAD BETHPAGE, NY 11714 TT−Id: 120A−0008−847

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 5257 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NAVAL WEAPONS IND. RESERVE PLANT
Revised zip code: NO CHANGE

Special Note: This site is one of 421 Inactive Hazardous Waste Disposal Sites that reportedly are being reinvestigated for chlorinated solvents that may pose soil gas vapor intrusion hazards. Prior to 2003, many of these sites were determined to be cleaned up or not to pose hazards.

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 130003B
CLASSIFICATION CODE: 02 REGION: 1 DEC ID: 55754
CLASSIFICATION CODE DESCRIPTION:
Significant threat to the public health or environment - action required.

NAME OF SITE: Naval Weapons Ind. Reserve Plant
STREET ADDRESS: South Oyster Bay Road TOWN: Oyster Bay
CITY: Bethpage ZIP: 11714 COUNTY: Nassau

ESTIMATED SIZE: 8.7 Acres
SITE TYPE: Dump- Structure- Lagoon-X Landfill-X Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:

CONTROL:	IN-PLACE DATE:
Ground Water Use Restriction	04/03/2008
Cover System	04/03/2008
Landuse Restriction	04/03/2008
Deed Restriction	04/03/2008

CROSS REFERENCES:

IDENTIFIER	SOURCE
NYD602047967	EPA Site ID

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:

CURRENT OWNER(S):

NAME: GRUMMAN AEROSPACE - US NAVY Owner Type: Federal Government
ADDRESS: GRUMMAN CORP., STEWART AVE
BETHPAGE, NY 11714

NAME: NAVAIR (Dept. of the Navy)
Ms Lora Fly
ADDRESS: NAVFAC Mid-Atlantic
9742 Maryland Avenue, Bldg Z-144
Norfolk, VA 23511-3095

NAME: Grumman Aerospace Corporation - US N
ADDRESS: Stewart Avenue
Bethpage, NY 11714

OWNER(S) DURING DISPOSAL:

NAME: GRUMMAN AEROSPACE - US NAVY
ADDRESS:

OPERATOR(S) DURING DISPOSAL:

NAME: US Department of the Navy Operator Type: Federal Government
ADDRESS: Grumman Corp., Stewart Ave
Bethpage, NY 11714

NAME: GRUMMAN AEROSPACE - US NAVY Operator Type: Federal Government
ADDRESS: STEWART AVE
BETHPAGE, NY 11714

NAME: US Department of the Navy
ADDRESS: Grumman Corp., Stewart Ave

Bethpage, NY 11714

NAME: Grumman Aerospace Corporation
ADDRESS: Stewart Avenue
Bethpage, NY 11714

NAME: Grumman Aerospace Corporation
ADDRESS: Stewart Avenue
Bethpage, NY 117143581

DOCUMENT REPOSITORY(S):
NAME: BETHPAGE PUBLIC LIBRARY
ADDRESS: POWELL AVENUE
BETHPAGE, NY

HAZARDOUS WASTE DISPOSAL PERIOD: from 1943 to 1987

SITE DESCRIPTION:
Location: The Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Facility is located on Hicksville Road in an urbanized western area of Bethpage, Town of Oyster Bay. The site was originally 105 acres and was a part of the former Grumman Aerospace (Grumman Aircraft) Facility complex. Site Features: A portion of the original NWIRP Plant 3 complex remains on the Registry. This is a 9 acre paved parcel to the south and east of the former NWIRP Plant 3. The main portion of the NWIRP consisted of the former Plant 3 and warehouse buildings to the north and south. In addition, the former Plant 20 to the north was mainly a vehicle maintenance facility. Current Zoning/Use: Much of the former NWIRP plant complex has been redeveloped for various commercial and industrial uses.

The site is currently zoned for commercial and industrial uses. Historic Uses: As part of the former Grumman Aircraft Corporation complex, the NWIRP was included as the government owned (United States Navy) and contractor (Grumman) operated facility. Grumman Aircraft's operations started at the Bethpage location in 1937 and the Naval Weapons Industrial Reserve Plant (NWIRP) operations started in 1942. Eventually the Grumman name was changed to Grumman Aerospace Corporation. All manufacturing ceased at the Grumman and NWIRP facilities in 1996. From circa 1949 to 1962, the Former Grumman Settling Ponds area was used for dewatering of sludge, including neutralized chromic acid waste, from the waste water treatment facility which was located within the Grumman Aerospace Bethpage complex. The operation of the former Town ice rinks (since replaced by a new rink) were identified as the source of some of the Freon contamination in the area. The Town of Oyster Bay (TOB) is participating in the Brownfield Cleanup Program to address the Ice Rink portion of the Park. The boundaries of OU3 have been adjusted and the area of the TOB IRM is no longer part of OU3. The former Plant 5 building to the south was owned by the Navy and the land owned by Grumman. Both Plants 5 and 20 have been transferred to new ownership. NYS Site Registry Listing and Operable Units:

a. Listing: Formerly known as the Grumman Aerospace-Bethpage Facility Site (Site No.130003), this facility consisted of some 600 acres and was listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State in 1983. (Site No. 130003 as defined, did not include the Bethpage Community Park). Subsequently on March 10, 1993, the Grumman Aerospace- Bethpage Facility Site (130003) was divided into the Northrop Grumman-Bethpage Facility Site (130003A) and the Naval Weapons Industrial Reserve Plant Site (130003B) consisting of 105 acres. During the early 1990s many portions of the Northrop Grumman-Bethpage Facility Site (130003A) were delisted as the investigation of areas was completed. The Northrop Grumman- Bethpage Facility Site (130003A) was

further divided on March 13, 2000 with 26 acres becoming the Northrop Grumman-Steel Los Plant 2 Site (130003C). In June 2004, a portion of the Naval Weapons Industrial Reserve Plant Site (130003B) was delisted reducing the NWIRP site to the current size of 8.7 acres. b. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. The NWIRP Bethpage Site is divided into three operable units. The former manufacturing plant area is designated as Operable Unit 1 (OU1), and Operable Unit 2 (OU2) consists of the groundwater contamination plume and is a joint OU for both the Grumman and NWIRP sites. Operable Unit 3 (OU3) consists of the Former Underground Storage tanks area, also known as AOC 22 or site 4. The following Records of Decision (RODs) have been issued for the Naval Weapons Industrial Reserve Plant Site: 1. 130003b, Operable Unit 1 on-site soils source area, ROD, March 1995; 2. 130003A and 130003B, Operable Unit 2 NYSDEC Groundwater ROD, March 2001; 3. 130003B, OU 2, Department of the Navy OU2 ROD, January 2003. 4. 130003B, OU 3, Department of the Navy OU3 ROD, November, 2015

Site Geology and Hydrogeology: The site is located on the Long Island glacial sand deposits which have been designated as a sole source aquifer. Depth to groundwater (in the Upper Glacial aquifer) is 50 to 55 feet and flow is generally southward. The upper glacial aquifer is underlain by the Magothy aquifer which is the primary source of drinking water. Periodic lower permeability silty-sand and clay lenses exist throughout the area. Most of these confining layers are not continuous in the area of study.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
TRICHLORETHYLENE (F001)	UNKNOWN
TETRACHLOROETHENE {(PCE OR "PERC.") F002}	UNKNOWN
1,1,1-TRICHLOROETHANE	UNKNOWN
CYANIDE (F007)	UNKNOWN
ARSENIC (D003)	UNKNOWN

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Groundwater from the NWIRP and the downgradient Northrop Grumman plant site is completely contained by the Onsite Containment (ONCT) system. The offsite portion of the plume, not addressed by the containment system, will either be reduced through treatment or by natural attenuation with long term monitoring.

Sites 2 and 3 of Plant 3 have been addressed with the six inch cap and deed restrictions. This was part of the NWIRP Bethpage Operable Unit 1 (OU1) ROD implementation. The Navy prepared a Wellhead Treatment Contingency Plan to protect the public water supplies. To date, treatment will be designed and installed at Bethpage Water District Plant 5, South Farmingdale Plants 1 and 3, and the AQUA America/New York Water Service Seamans Neck Road Wellfield. Bethpage Water Districts Plants 4 and 6 treatment were funded by the Northrop Grumman Corporation. Areas of the Navy plant have also been impacted by PCBs and inorganics. This is being addressed under OU1. The Navy has picked up the OU2 environmental assessment of the offsite vertical profile boring program.

ASSESSMENT OF HEALTH PROBLEMS:

Since the site is fenced and covered by clean fill, people are not expected to come into contact with contaminants in soil unless they dig below the surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is treated to remove this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process,

which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Soil vapor intrusion sampling identified impacts to the indoor air quality of several structures near the site; however, a soil vapor extraction system is in place to remove the contaminated soil vapor, thus preventing the indoor air quality from being affected by soil vapor intrusion.

PROJECT COMPLETIONS:

Operable Unit 01 - Onsite Remedial Program

PROJECT	DESCRIPTION	END DATE	STATUS
Remedial Investigation		07/01/1995	Actual
Remedial Design	OU 1 VOC Soils	09/01/1995	Actual
Remedial Action	OU1- Revised SVE System for Site 1	07/27/2011	Actual
Remedial Investigation Amendment		08/04/2017	Actual

Operable Unit 02 - Off-Site Groundwater

PROJECT	DESCRIPTION	END DATE	STATUS
Remedial Investigation		03/31/2001	Actual
Remedial Design		06/30/2006	Actual
Remedial Action		02/10/2010	Actual
Remedial Action	American-AQUA-NY Permanent Carbon Units	12/23/2014	Actual

Operable Unit 03 - Site 4 AOC 22 No 6 Oil Remediation

PROJECT	DESCRIPTION	END DATE	STATUS
Remedial Design	Navy Site 4 - Former UST Area Remedial Design	06/28/2017	Actual

The New York State Department of Environmental Conservation has not publicly updated the following fields since 2003:

ANALYTICAL DATA AVAILABLE FOR:	Air-	Surface Water-	Groundwater-X	Soil-X	Sediment-X
APPLICABLE STANDARDS EXCEEDED IN:	Groundwater-X	Drinking Water-X	Surface Water-	Air-	

GEOTECHNICAL INFORMATION:

SOIL/ROCK TYPE:	Sand.
GROUNDWATER DEPTH:	Range: 50 to 55 feet.

LEGAL ACTION:	Type: Consent Order	State-X	Federal-
STATUS:	Negotiation in Progress-X	Order Signed-	
REMEDIAL ACTION:	Proposed- Under Design-X	In Progress-X	Completed-
NATURE OF ACTION:	Final on-site soil remediation.		

NO RCRA CORRECTIVE ACTION SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

NO CERCLIS SUPERFUND SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO BROWNFIELDS SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO SOLID WASTE FACILITIES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO HAZARDOUS WASTE TREATMENT/STORAGE/DISPOSERS IDENTIFIED WITHIN THE 1/2 MILE SEARCH RADIUS

HAZARDOUS MATERIAL SPILLS INTRODUCTION

The Hazardous Material Spills in this section are divided into eight spill cause groupings. These include:

Active Spills Section: Spills with incomplete paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

1) Tank Failures
2) Tank Test Failures
3) Unknown Spill Cause or Other Spill Cause Hazardous Spills
4) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, Vandalism and Storms.

Closed Status Spills Section: Spills with completed paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

5) Tank Failures
6) Tank Test Failures
7) Unknown Spill Cause or Other Spill Cause Hazardous Spills
8) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, Vandalism and Storms.

All spills within each spill cause category are presented in order of proximity to the subject site address.

Please note that spills reported within 0.25 mile (or one−eighth mile in New York City) are mapped and profiled.

Between 0.25 mile (or one−eighth mile in New York City) and 0.5 mile, only the following spills are mapped and profiled:

* Tank Failures;

* Tank Test Failures;

* Unknown Spill Cause or Other Spill Cause;

* Spills greater than 100 units of quantity; and

* Spills reported in the NYSDEC Fall 1998 MTBE Survey.

A table at the end of each section presents a listing of reported Miscellanous Spills with less than 100 units located between 0.25 mile (or one−eighth mile in Manhattan) and 0.5 mile. These spills are neither mapped nor profiled.

NO ACTIVE TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO ACTIVE TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO ACTIVE UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO ACTIVE HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 mile. Between 1/4 mile and 1/2 mile search radius, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled. Spills reported to be less than 100 units are listed in a table at the end of this section.

THE FOLLOWING ACTIVE SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE SEARCH RADIUS FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM, OR STORMS. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY

No dropped spills found for this category

CLOSED STATUS TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 3 **DOBBIE RESIDENCE** **Spill Number: 0110007** **Close Date: 03/11/2002**
4 HELEN COURT BETHPAGE, NY TT−Id: 520A−0068−445

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1632 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill: PRIVATE DWELLING Spiller: DOBBIE RES − DOBBIE RESIDENCE Spiller Phone: (516) 681−1186
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: RAY BERGSTROM Caller Agency: PETRO OIL Caller Phone: (516) 686−2024
DEC Investigator: WJGABIN Contact for more spill info: DOBBIE RES Contact Person Phone: (516) 681−1186

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
01/17/2002		TANK FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	225.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

275 GAL TANK IN BASEMENT LEAKING − NO CLEAN UP

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was GABIN 1/17/02 TELECON TO PETRO−TANK WAS FILLED 1/14/02, NO OIL IN THE TANK ESTIMATED 335 GALLON LOSS, TANK IS A 275 UST LOCATED IN THE FRONT OF THE HOUSE TELECON TO MS DOBBIE−HAS

NATIONWIDE INSURANCE, PETRO SET UP A TEMP TANK

CLEANUP WAS COMPLETED BY TRADEWINDS ENV/GWI. A TOTAL OF 14.16 TONS OF CONT MATERIALS WERE REMOVED, TRANSPORTED AND PROPERLY DISPOSED OF AT BLUEWATER. SOIL BORING RESULTS INDICATED MINIMUM POTENTIAL FOR GW IMPACT. NO FURTHER ACTION NEEDED

NO CLOSED STATUS TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

CLOSED STATUS UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 4 **UNKNOWN** **Spill Number: 9310169** **Close Date: 11/23/1993**
SOB EXIT 9 SO BOUND BETHPAGE, NY TT−Id: 520A−0081−192

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 553 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: S.O.B EXIT 9 SO BOUND
Revised zip code: 11714

Source of Spill:	PASSENGER VEHICLE	Spiller:	TIM HARBULAK (PASS VEHICLE)	Spiller Phone:	(516) 826−8726
Notifier Type:	Police Department	Notifier Name:		Notifier Phone:	
Caller Name:	MR SMITHING	Caller Agency:	NCFM	Caller Phone:	(516) 659−1917
DEC Investigator:	WJPARISH	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Unable or Unwilling RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/21/1993	11/23/1993	OTHER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	20.00	GALLONS	0.00	GALLONS	SEWER

Caller Remarks:

CAR FIRE, GASOLINE LEAKED INTO DRAIN, FD & PD ON SCENE, GAS & FOAM IN DRAIN, FROM 1985 MERCEDES, UNK AMT IN DRAIN, WILL CHECK AS FOAM DISSAPATES LATER TODAY

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was PARISH

NO ACTION NEEDED

Map Identification Number 5 **SHUMSKI RESIDENCE** **Spill Number: 8910897** **Close Date: 10/30/1990**
8 SILBER AVENUE BETHPAGE, NY TT−Id: 520A−0072−099

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1426 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill:	PRIVATE DWELLING	Spiller:	SHUMSKI RESIDENCE	Spiller Phone:	(516) 681−1860
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:	ED MORALES	Caller Agency:	GENERAL UTILITIES	Caller Phone:	(516) 349−8989
DEC Investigator:	KJGOMEZ	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Unknown RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/14/1990	10/30/1990	OTHER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	GROUNDWATER

Caller Remarks:

GENERAL UTILITIES DELIVERED 135 GALS ON 2/9/90 TO A 275 GAL TANK. 3 IN TANK TODAY

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was GOMEZ 10/30/90: NO FURTHER ACTION NECESSARY.

Map Identification Number 6 **BRODSKY RESIDENCE** **Spill Number: 0408332** **Close Date: 03/16/2005**
9 SUSANNE LANE BETHPAGE, NY TT−Id: 520A−0082−424

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1551 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: 9 SUZANNE LN
Revised zip code: 11714

Source of Spill: PRIVATE DWELLING
Notifier Type: Responsible Party
Caller Name: KATHY WHITTEMORE
DEC Investigator: Unassigned

Spiller: KATHY WHITTEMORE − PETRO FUEL OIL CO.
Notifier Name: KATHY WHITTEMORE
Caller Agency: PETRO OIL
Contact for more spill info: MR. BRODSKY

Spiller Phone: (516) 349−4114
Notifier Phone: (516) 349−4114
Caller Phone: (516) 349−4114
Contact Person Phone: (516) 822−8299

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/28/2004		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

ABOUT 1 PINT LEAKED OUT, IN PROCESS OF BEING CLEANED UP

DEC Investigator Remarks:

10/28 KATHY CALLED, OVERFILL, ON SOIL AND BASEMENT FLOOR, CLEANED UP BOTH, NO DRAINS

Map Identification Number 7 **BETHPAGE COMMUNITY CENTER** **Spill Number: 0312319** **Close Date: 02/10/2004**
600 BROADWAY BETHPAGE, NY TT−Id: 520A−0067−742

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1622 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	BETHPAGE COMMUNITY CENTER	Spiller Phone:	(516) 938−7909
Notifier Type:	Other	Notifier Name:	SAL DITTA	Notifier Phone:	(516) 686−2028
Caller Name:	SAL DITTA	Caller Agency:	PETRO FUEL	Caller Phone:	(516) 686−2028
DEC Investigator:	CAGAITES	Contact for more spill info:		Contact Person Phone:	(516) 938−7909

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.

Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/05/2004		UNKNOWN	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

BURIED TANK WAS ABANDON, AND THE SNOWPLOW KNOCKED OFF COVER AND WATER GOT INTO TANK AND RAISED THE LEVEL AND OIL GOT UNTO GROUND: CLEAN UP IN PROGRESS

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was GAITES 2/5 CALLED DITTA, AT THIS TIME, ODOR COMPLAINT ONLY
AS FAR AS HE KNOWS, THERE IS MUCH SNOW AROUND THE AREA IN QUESTION, MILRO ENROUTE TO EMTPY TANK AND INSPECT AREA 2/5 LEFT MESSAGE FOR PUAL BASSO OF MILRO 2/5 CHRISTINE OF MILRO CALLED, THEY ARE NOT AWARE OF THIS 2/5 CALLED CENTER, REFERRED TO PRESIDENT STEVEN GREENBLATT 516−352−1366 2/5 CALLED GREENBLATT−PETRO HAD RECOMMENDED MILRO BUT ALSO SUGGESTED CALLING INSURANCE, GREENBLATT HAD ASKED HIS TREASURER TO HANDLE, ODOR COMPLAINT CAME FROM THE TENANT, HE DOES NOT BELIEVE THE ODORS THEMSELVES ARE INSIDE, BUT IS NOT CERTAIN, PETRO HAD JUST INSTALLED NEW SYSTEM INCLUDING A/G TANK, PETRO WAS TO ABANDON THE OUTSIDE TANK BUT HE DOESN'T KNOW WHETHER THIS WAS DONE YET, DEC STRESSED THAT THE FOLLOWING BE DONE TODAY, CONFIRM WHETHER ODORS ARE INSIDE OR OUTSIDE, CHECK FOR SPILLAGE OUTSIDE, HEAVY RAIN FORECAST, CLEANUP AND SECURE TANK AS NEEDED DEC ASKED FOR CALL BACK 2/5 GREENBLATT CALLED, TRYING TO CONTACT MILRO 2/5 LEFT MESSAGE FOR ROBIN PUTNAM NCDH 2/5 ROBIN CALLED, WILL CHECK ON CURRENT/FORMER TANKS, 2/5 CALLED MILRO AND SPOKE TO PAUL BASSO, THEY HAVE BEEN HIRED 2/5 CALLED ROBIN, SITE APPARENTLY EXEMPT, WILL CHECK FURTHER 2/5 ROBIN CALLED, ONLY OTHER INFO IS OLD NOTE THAT A 1000 GALS TANK WAS TO BE ABANDONED (FROM YEARS AGO)

CLEANUP BY MILRO, PAVEMENT ONLY, NO DRAINS,NO SOIL

Map Identification Number 8 **ED PESSANE RESIDENCE** **Spill Number: 0409135** **Close Date: 03/16/2005**
8 PEARL STREET BETHPAGE, NY TT−Id: 520A−0067−633

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1670 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill:	PRIVATE DWELLING	Spiller:	DANA HOOK − MORINIA OIL	Spiller Phone:	(516) 674−2000
Notifier Type:	Responsible Party	Notifier Name:	DANA HOOK	Notifier Phone:	(516) 679−2000
Caller Name:	DANA HOOK	Caller Agency:	MORANIA OIL	Caller Phone:	(516) 679−2000
DEC Investigator:	Unassigned	Contact for more spill info:	ED	Contact Person Phone:	(516) 942−0443

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/11/2004		OTHER	NO	NO

NO MATERIAL INFORMATION GIVEN FOR THIS SPILL

Caller Remarks:

CLEAN UP CREW SENT OUT

DEC Investigator Remarks:

MILRO HIRED FOR CLEANUP

TELECON TO CALLER, TO SOIL, 1−4 GALS, TANK OVERFILL, A/G TANK OUTDOOR, DISPATCHED MILRO FOR CLEANUP

Map Identification Number 9 **RESIDENCE** **Spill Number: 9306397** **Close Date: 08/26/1993**
89 SILVBER AVENUE BETHPAGE, NY TT−Id: 520A−0081−190

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1876 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: 89 SILBER AVE
Revised zip code: 11714

Source of Spill:	PRIVATE DWELLING	Spiller:	RESIDENCE	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:		Notifier Phone:	
Caller Name:	MARGARET WEIS	Caller Agency:	CITIZEN	Caller Phone:	(516) 938−1732
DEC Investigator:	UNASSIGNED	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/24/1993	08/26/1993	OTHER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	6.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SPEEDI DRI IS BEING USED, WILL EMPTY TANK, TANK IS SITUATED IN BASEMENT CONCRETE FLOOR, OIL CO BEEN CONTACTED WILL REPLACE TANK

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was NONE 08/26/93: TANK IS SITUATED IN BASEMENT, CONCRETE FLOOR, OIL COMPANYS BEEN CONTACTED,WILL REPLACE TANK, NO INSPECTION NEEDED AT THIS TIME.

Map Identification Number 10 **GILDA OMAGE RESIDENCE** **Spill Number: 0750890** **Close Date: 03/25/2008**
22 MICHAEL COURT BETHPAGE, NY TT−Id: 520A−0065−384

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2111 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill:	PRIVATE DWELLING	Spiller:	MIKE DEDORA − ROMANELLI FUEL OIL	Spiller Phone:	(631) 956−1201
Notifier Type:	Affected Persons	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	Unassigned	Contact for more spill info:		Contact Person Phone:	(516) 931−0180

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/31/2007		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	13.00	GALLONS	13.00	GALLONS	SOIL IMPERVIOUS SURFACE

Caller Remarks:

Caller states that she had a prior contract with Romanelli & Sons that expired. She decided to discontinue with them, and went with Troiano Fuel. When she called to cancel Romanelli, she was told that if she canceled, she was no longer under contract, and would not get service calls. She said that was fine, and signed up with Troiano. While she was away, she had arranged for a delivery by Troiano, who filled up her tank. When she returned, she smelled oil, and discovered oil on the basement floor, and outside on the soil. She has a a/g 275 gallon tank in basement. She then found a delivery ticket from Romanelli stating a delivery of 13.3 gallons. When she called Romanelli, they denied spilling any oil. They refused to do any cleanup. Troiano Fuel came and completed cleanup of basement and soil. Now she continues to get bills from Romanelli for the oil that was spilled. She would like us to get Romanelli to leave her alone.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 11 **VANADIA RESIDENCE** **Spill Number: 0604602** **Close Date: 11/08/2006**
6 DOROTHEA STREET PLAINVIEW, NY TT−Id: 520A−0066−365

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2193 feet to the N

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11803

Source of Spill: PRIVATE DWELLING Spiller: LOUISA VANADIA − VANADIA RESIDENCE Spiller Phone: (516) 433−4648
Notifier Type: Local Agency Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: Unassigned Contact for more spill info: LOUISA VANADIA Contact Person Phone: (516) 433−4648

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/24/2006		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	30.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

FIRE DEPT RESPONDED AND APPLIED SPEEDY DRY: TANK WILL BE REPLACED:

DEC Investigator Remarks:

15:50 TELECON DALTON, TANK IS ON CEMENT FLOOR IN BASEMENT. ENROUTE TO PUMP OUT OIL INTO A TEMP TANK OUTSIDE, TANK WAS POROUS, PER DALTON, HOMEOWNER IS IN CONTACT WITH INSURANCE COMPANY REGARDING CLEANUP. NCFM SMITH AND PETRY WERE ON SCENE

REMOVED 2 DRUMS CONTAMINATED DEBRIS, SAMPLES COLLECTED, NFA

Map Identification Number 12 **LARRY NALLIA RESIDENCE** **Spill Number: 9210656** **Close Date: 02/12/1993**
78 SPRUCE AVENUE BETHPAGE, NY TT−Id: 520A−0073−204

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2240 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill:	PRIVATE DWELLING	Spiller:	LARRY NALLIA RESIDENCE	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:	GLEN BONELLI	Caller Agency:	GEN ENVIR SERVICES	Caller Phone:	(516) 491−1444
DEC Investigator:	GIBBONS	Contact for more spill info:		Contact Person Phone:	

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
12/14/1992	02/12/1993	OTHER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

TANK RUPTURED, OIL & WATER IN BASEMENT, HIT WATER MAIN, 497 GALS PUMPED OUT YESTERDAY, GEN IS THERE TODAY CLEANING UP, BASEMENT ONLY

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 13 **LIPA POLE 5** **Spill Number: 0708241** **Close Date: 11/02/2007**
SYCAMORE AVE / 30 LINCOLN ROAD BETHPAGE, NY 11714 TT−Id: 520A−0211−021

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2254 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: SYCAMORE AVE / LINCOLN RD
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	FRANK NAGLIERI − LIPA	Spiller Phone: (917) 578−0161
Notifier Type:	Other	Notifier Name:		Notifier Phone:
Caller Name:		Caller Agency:		Caller Phone:
DEC Investigator:	Unassigned	Contact for more spill info:	FRANK NAGLIERI	Contact Person Phone: (917) 578−0161

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/27/2007		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIELECTRIC FLUID	PETROLEUM	4.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

caller reports spill due to tree fell on wires causing transformer to leak. non pcb oil. in process of cleanup.

DEC Investigator Remarks:

CLEANUP BY KEYSPAN AND WASTE RECYCLING COMPLETED ON 10/27/07 DOCUMENTS IN KEYSPAN FILES

FILE HAS BEEN DESTROYED ACCORDING TO STATE ARCHIVE AND RECORD ADMINISTRATOR RETENTION/DISPOSAL PROCEDURES

ALL INFORMATION INCLUDED IN DATABASE

Map Identification Number 14 **RESIDENCE** **Spill Number: 0103325** **Close Date: 06/27/2001**
2 LINDEN AVENUE BETHPAGE, NY TT−Id: 520A−0069−398

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2425 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill:	PRIVATE DWELLING	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:	LOUIS ILLIANO	Notifier Phone:	(718) 339−1984
Caller Name:	LOUIS ILLIANO	Caller Agency:	ACS ENVIORNMENTAL	Caller Phone:	(718) 339−1984
DEC Investigator:	UNASSIGNED	Contact for more spill info:	ANNA GAUDINO−FUTURE OWNER	Contact Person Phone:	(718) 763−4238

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Unable or Unwilling RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/26/2001		OTHER	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
PESTICIDES	OTHER	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

THEY WERE DOING DIGGING ON THE PREMISES TESTING SOIL AND FOUND PESTICIDES.THEY FOUND DIELDRIN,HEPTACHLOR,EPOXIDE.THE FUTURE HOMEOWNER HIRED THE COMPANY TO CHECK FOR PESTICIDES.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was NONE

Map Identification Number 15 **UNK** **Spill Number: 9009167** **Close Date: 11/26/1990**
61 BURTON AVENUE PLAINVIEW, NY TT−Id: 520A−0072−450

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2430 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11803

Source of Spill: PRIVATE DWELLING Spiller: UNK Spiller Phone:
Notifier Type: Local Agency Notifier Name: Notifier Phone:
Caller Name: ANDREA REISS Caller Agency: TOWN OF OYSTER BAY Caller Phone: (516) 921−7347
DEC Investigator: UNASSIGNED Contact for more spill info: Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/21/1990	11/26/1990	UNKNOWN	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

APPLIED SPEEDI DRY, WILL SWEEP UP

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was NONE

Map Identification Number 16 **SPILL NUMBER 9415203** **Spill Number: 9415203** **Close Date: 05/20/1997**
EVERGREEN & SPRUCE AVE BETHPAGE, NY TT−Id: 520A−0077−197

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2499 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: EVERGREEN AVE / SPRUCE AV
Revised zip code: 11714

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	LILCO	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:	ADAM YABLANSKY	Caller Agency:	LILCO	Caller Phone:	(516) 842−9075
DEC Investigator:	ACLAMANN	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.

Class: Unable or Unwilling RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/20/1995		OTHER	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	40.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

TREE FELL ON TRANSFORMERS CAUSING A LEAK, 2 TRANSFORMERS AFFECTED, NCFM & LILCO TESTED ONE OF 2 TRANSFORMERS TESTED NEG FOR PCB'S MEG ENROUTE TO COMPLETE CLEANUP

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was LAMANNO CLEANUP BY LILCO, SEE REPORT,NO ACTION

CLOSED STATUS HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 mile. Between 1/4 mile and 1/2 mile search radius, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled. Spills reported to be less than 100 units are listed in a table at the end of this section.

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 17 **NYSDOT** **Spill Number: 9403069** **Close Date: 06/07/1994**
PLAINVIEW RD UNDER RT 135 BETHPAGE, NY TT−Id: 520A−0089−247

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 553 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: PLAINVIEW RD / STATE HWY 135
Revised zip code: 11714

Source of Spill: UNKNOWN Spiller: NYSDOT Spiller Phone: (516) 952−6652
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: STEWART SPRAGUE Caller Agency: STATE HIGHWAY Caller Phone: (516) 222−1936
DEC Investigator: NJACAMPO Contact for more spill info: Contact Person Phone:

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/01/1994	06/07/1994	ABANDONED DRUM	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

4−55 GAL DRUMS UNDER RTE 135, SEE ALSO 94−03068 & 03070, LABELLED HAZ WASTE

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ACAMPORA 06/07/94: NO SPILL IDENTIFIED, DRUMS RESULT OF BRIDGE PAINTING. 10/10/95: This is additional information about material spilled from the translation of the old spill file: HAZ WASTE.

Map Identification Number 18 **SLOMINS OIL** **Spill Number: 8603008** **Close Date: 05/04/1987**
BROADWAY & RTE 135 BETHPAGE, NY TT−Id: 520A−0087−544

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 553 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: BROADWAY / STATE HWY 135
Revised zip code: 11714

Source of Spill: TANK TRUCK Spiller: SLOMIN'S OIL CO Spiller Phone: (516) 799−7000
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: UNASSIGNED Contact for more spill info: Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/05/1986	05/04/1987	EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	20.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

4 55GAL GARBAGE CANS W/O COVERS USED TO TRANSPORT ~15 BAGS S−DRI W/O 364 BACK TO SLOMIN'S.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was NONE

FD

/ / : NCHD ON SCENE. SLOMIN'S CLEANED. MPC TO DISPOSE OF MATERIAL 8/6.

FILE HAS BEEN DESTROYED ACCORDING TO STATE ARCHIVE AND RECORD ADMINISTRATOR RETENTION/DISPOSAL PROCEDURES

Map Identification Number 19 **MULCASY RESIDENCE** **Spill Number: 0604293** **Close Date: 03/08/2007**
10 ROBERT COURT BETHPAGE, NY TT−Id: 520A−0066−353

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 945 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill: PRIVATE DWELLING
Spiller: MULCASY RESIDENCE − MULCASY RESIDENCE
Spiller Phone: (516) 433−6052
Notifier Type: Other
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: Unassigned
Contact for more spill info: MULCASY RESIDENCE
Contact Person Phone: (516) 433−6052

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/18/2006		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

TOP OF THE OIL TANK BY GAUGE HAD A SMALL LEAK AND WENT ONTO BASEMENT FLOOR:

DEC Investigator Remarks:

7/18/06 14:45 TELECON WITH BOB MCGINN, DELIVERY TODAY. DRIVER STOPPED DELIVERY DU TO GURGLING IN LINE, PROPERTY OWNER RETURNED LATER IN MORNING AND CALLED MEENAN WITH ODOR COMPLAINT. MEENAN SERVICE TECH RESPONDED TO REPLACE GAUGE AND WIPE TANK SIDES. PERSISTENT ODORS WERE ADDRESSED BY SPRINKLING ODOR KILL AND WIPING TANK WITH ENVIRONMENTAL CLEANER/DEGREASER, OWNER IS REPORTED TO BE SATISFIED WITH CLEANUP

Map Identification Number 20 **JFK MIDDLE SCHOOL** **Spill Number: 9813605** **Close Date: 04/19/1999**
500 BROADWAY BETHPAGE, NY TT−Id: 520A−0070−498

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 2529 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	MR MARCHASIELLO − JFK MIDDLE SCHOOL	Spiller Phone:	
Notifier Type:	Fire Department	Notifier Name:	MR MCGRATH	Notifier Phone:	(516) 572−1092
Caller Name:	MR MCGRATH	Caller Agency:	NASSAU COUNTY FIRE MARSHA	Caller Phone:	(516) 572−1092
DEC Investigator:	COSTELLO	Contact for more spill info:	MR MARCHASIELLO	Contact Person Phone:	

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/07/1999		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	100.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

FIRE MARSHALL IS ON THE SCENE WITH A FUEL SPILL AT SCHOOL 21.THE SPILL IS INSIDE AND WENT DOWN INTO A CRAWL SPACE.EQUIPMENT ON THE BURNER FAILED CAUSING THE SPILL.THE REPAIR IS BEING MADE NOW BY THE DISTRICT MAINTENANCE PERSON.TYREE ENVIROMENTAL IS CONTRACTED OUT TO CLEAN UP SPILL. ON SCENE NUMBER FOR FIRE MARSHALL IS 516−521−2046

DEC Investigator Remarks: DEC INVESTIGATOR REMARKS NOT AVAILABLE FOR THIS SPILL ACCORDING TO THE LAST UPDATE.

The following DEC Investigator Remarks were available prior to 1/1/2002:

COSTELLO INSPECTED ON 2/8/99, CLEANUP COMPLETED BY TYREE. SPILL HAD IMPACTED CONCRETE FLOOR AND IN HOUSE DRAINS, NO FURTHER ACTION

Map Identification Number 21 **WOJTUSIAK RESIDENCE** **Spill Number: 9509836** **Close Date: 06/01/2005**
16 FLORAL AVENUE BETHPAGE, NY TT−Id: 520A−0075−097

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2587 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Source of Spill:	PRIVATE DWELLING	Spiller:	LAWRENCE WOJTUSIAK − WOJTUSIAK RESIDENCE	Spiller Phone:	(516) 681−1493
Notifier Type:	Other	Notifier Name:	JOHN HESS	Notifier Phone:	(516) 783−1100
Caller Name:	WARREN BEALE	Caller Agency:	MEEHAN OIL	Caller Phone:	(516) 783−1100
DEC Investigator:	BPAUSTIN	Contact for more spill info:	LAWRENCE WOJTUSIAK	Contact Person Phone:	(516) 681−1493

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/08/1995		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	200.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

250 GALLON TANK FILLED ON 9/26/95, NOW EMPTY. TANK LOCATED IN A CRAWL SPACE. UNKNOWN IF LEAK ACTUALLY FROM TANK OR FUEL LINE. UNABLE TO GAIN ACCESS TO CRAWL SPACE. CUSTOMER NOTIFIED OF PROBLEM AND TO MAKE ARRANGEMENTS FOR CLEAN UP AND REPAIR.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was AUSTIN TANK IS EMPTY AND OUT OF SERVICE, TEMP SYSTEM INSTALLED UNDER BLOCK AND SAND STAINED

LINE REPLACED, CONT SOIL REMOVED

Map Identification Number 22 **ZIRK RESIDENCE** **Spill Number: 0106310** **Close Date: 10/17/2001**
33 SPRUCE AVENUE BETHPAGE, NY TT−Id: 520A−0081−191

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2633 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 33 SPRUCE AVE
Revised zip code: 11714

Source of Spill:	PRIVATE DWELLING	Spiller:	SAME − ZIRK RESIDENCE	Spiller Phone:	
Notifier Type:	Other	Notifier Name:	RAY BERGSTROM	Notifier Phone:	(516) 686−2024
Caller Name:	RAY BERGSTROM	Caller Agency:	PETRO OIL	Caller Phone:	(516) 686−2024
DEC Investigator:	HMCIRRIT	Contact for more spill info:	MR ZIRK−OWNER	Contact Person Phone:	(516) 935−8839

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
09/14/2001		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	100.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

they have a leaking oil line inside the residents. beneath the basement floor.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was CIRRITO TELECON RAY BERGSTROM: LINE LEAK UNDER SLAB, NEW LINE WAS RUN, ESTIMATED LOSS OF 100 GALLONS

100 GALLONS LOST, ESTIMATED BY CONSUMPTION RECORDS, NO ODORS IN HOUSE OR STAINING ON CONCRETE FLOOR, DEPTH TO WATER IS APPROX 50 FT, IMPACT IS UNLIKELY, NO FURTHER ACTION

THE FOLLOWING CLOSED SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM OR STORMS. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY

9100369	NEWCOMBE RESIDENCE	25 ARMON DRIVE	BETHPAGE
9612644	SPILL NUMBER 9612644	76 CAFFREY LANE	BETHPAGE
1209991	UNKNOWN	21 ARMON DRIVE/GILDO PLACE	BETHPAGE
0707206	SMITH RESIDENCE	87 CAFFREY AVENUE	BETHPAGE
9210015	MICHAEL CATALENE	PLAINVILLE & HAYPATH	BETHPAGE
0013232	UNKNOWN	17 KUNEN AVENUE	BETHPAGE
1006595	UNKNOWN	16 MICHAEL COURT	BETHPAGE
0709567	UNKNOWN	16 MANOR DRIVE	BETHPAGE
9825114	RESIDENCE	30 SYLVIA ROAD/SHARON CT	BETHPAGE
0305380	SPILL NUMBER 0305380	PLAINVIEW RD/RUSTIC COURT	PLAINVIEW
1106888	UNKNOWN	11 LINCOLN ROAD	BETHPAGE
1305173	SALZ RESIDENCE	18 DOROTHEA STREET	PLAINVIEW
0301951	UNKNOWN	145 HAYPATH ROAD	OLD BETHPAGE

NO OIL STORAGE FACILITIES LARGER THAN 400,000 GALLONS IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

PETROLEUM BULK STORAGE FACILITIES LESS THAN 400,000 GALLONS IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 23 **BETHPAGE W.D. BGD−1** **Facility Id: 001624** **Source: NASS DEPT OF HEALTH**
PLAINVIEW RD. BETHPAGE TT−Id: 640A−0084−212

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Owner Name: BETHPAGE WATER DISTRICT
Owner Address: 25 ADAMS AVE., BETHPAGE, NY 11714
Permit Name: SAME

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE
0003	In Service	SODIUM HYPOCHLORITE	150	Indoors Aboveground	061981
0004	In Service	SODIUM HYPOCHLORITE	55	Indoors Aboveground	061981
0005	In Service	SODIUM HYDROXIDE	1500	Indoors Aboveground	022000
0006	In Service	SODIUM HYPOCHLORITE	300	Indoors Aboveground	022000

TANK NUMBER: 0003
TANK EXT. PROTECTION: Fiberglass
PIPING EXT. PROTECTN:
PIPING TYPE:
PIPING TYPE:
TANK TYPE: Fiberglass Coated Steel
TANK LEAK DETECTN: Concrete Pad w/channels
PIPING LEAK DETECTN:
PIPING LOCATION:
DISPENSER METHOD: Submersible
TK INT. PROTECTION: Rubber Liner
TK SEC. CONTAINMNT: Impervious Underlayment
PIPE SEC. CONTAINMNT:

TANK NUMBER: 0004
TANK EXT. PROTECTION: Fiberglass
PIPING EXT. PROTECTN:
PIPING TYPE:
PIPING TYPE:
TANK TYPE: Fiberglass Coated Steel
TANK LEAK DETECTN: Concrete Pad w/channels
PIPING LEAK DETECTN:
PIPING LOCATION:
DISPENSER METHOD: Submersible
TK INT. PROTECTION: Rubber Liner
TK SEC. CONTAINMNT: Impervious Underlayment
PIPE SEC. CONTAINMNT:

TANK NUMBER: 0005
TANK EXT. PROTECTION: Sacrificial Anode
PIPING EXT. PROTECTN:
PIPING TYPE: Steel/Iron
PIPING TYPE: Steel/Iron
TANK TYPE: Steel/Carbon Steel
TANK LEAK DETECTN: Interstitial Monitoring
PIPING LEAK DETECTN:
PIPING LOCATION:
DISPENSER METHOD: Suction
TK INT. PROTECTION: Rubber Liner
TK SEC. CONTAINMNT: Excavation Liner
PIPE SEC. CONTAINMNT:

**** TANK INFO FOR THIS SITE CONTINUES ON NEXT PAGE ****

TANK NUMBER: 0006
TANK EXT. PROTECTION: Fiberglass
PIPING EXT. PROTECTN:
PIPING TYPE:
PIPING TYPE:

TANK TYPE: Fiberglass Coated Steel
TANK LEAK DETECTN:
PIPING LEAK DETECTN:
PIPING LOCATION:
DISPENSER METHOD: Suction

TK INT. PROTECTION: Rubber Liner
TK SEC. CONTAINMNT: Vault
PIPE SEC. CONTAINMNT:

Map Identification Number 24 **BETHPAGE WATER DISTRICT−BGD−1** **Facility Id: 2064285** **Source: NASS. FIRE MARSHAL**
PLAINVIEW RD

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

TANK NUMBER	TANK TYPE	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE
	Steel	Removed	#2 FUEL OIL	3000	Outdoor Underground Horizontal	01/01/1981
	Steel	In Service	#2 FUEL OIL	1000	Outdoor Aboveground Horizontal	09/13/2000

Additional data that can not be referenced on a tank−by−tank basis:

TANK TYPE: Steel
INSTALL DATE: 09/13/2000
TANK CONTENT: #2 FUEL OIL
TEST DATE: 09/13/2000
TANK LOCATION: Outdoor Aboveground Horizontal
TANK REG EXPIRATION: 09/30/2010

Map Identification Number 25 **CHARLES CAMPAGNE SCHOOL** **Facility Id: 052346** **Source: NASS DEPT OF HEALTH**
PLAINVIEW RD. BETHPAGE TT−Id: 640A−0028−890

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 458 feet to the N

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11714

Owner Name: BETHPAGE UFSD
Owner Address: CHERRY AVE., BETHPAGE, NY 11714
Permit Name: BETHPAGE UFSD

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE
0002	In Service	OIL, FUEL #2	15000	Belowground	101989

HAZARDOUS WASTE GENERATORS/TRANSPORTERS IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 26 **NYSDEC Name:** **NYSDOT** **Facility Id: NY0000348466**

	NYSDEC Address:	ROUTE 135/BROADWAY	BETHPAGE, NY 11714	TT−Id: 740A−0023−222
	EPA (RCRA) Name:	ROUTE 135/BROADWAY NYSDOT−BIN # 1037899		
	EPA (RCRA) Address:	ROUTE 135/BROADWAY	BETHPAGE, NY 11714	

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 553 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: BROADWAY / SEAFORD−OYSTER BAY EXWY
Revised zip code: NO CHANGE

US EPA RCRA Type: LARGE QUANTITY GENERATOR
Notification date: 05/26/1994
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:

Contact Name: RAJI MATHEW	Source Type: Annual/Biennial Report update with Notification	Contact Phone: 631−952−6046	Contact Info Date: 02/22/2010
Contact Name: BERNARD ESPOSITO	Source Type: Implementer	Contact Phone: 516−471−6253	Contact Info Date: 01/01/2007
Contact Name: BERNARD ESPOSITO	Source Type: Notification	Contact Phone: 516−471−6253	Contact Info Date: 05/26/1994

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	7700	POUNDS	GENERATED	2009		
D008	Lead	1	CUBIC YDS	GENERATED	1994		

CHEMICAL STORAGE FACILITIES IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 27 **PLANT NO. BGD−1** **Facility Id: 1−000518**
PLAINVIEW ROAD BETHPAGE, NY 11714 TT−Id: 780A−0003−561

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE (1)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 05/11/2016
Site Status: Active
Site Type: Municipality (Incl. Waste Water Treatment Plants, Utilities, Swimming Pools, etc.)

NOTE: The following detailed facility and tank information has not been made publicly available by the NYSDEC since 1/1/2002.

Owner Name: BETHPAGE WATER DISTRICT
Owner Address: 25 ADAMS AVENUE BETHPAGE, NY 11714
Operator Name: RONALD KRUMHOLZ Facility Phone #: (516) 931−0093

TANK NUMBER	TANK STATUS	CHEMICAL NAME	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	DATE CLOSED
0001	TEMP OUT OF SERVICE	SODIUM HYDROXIDE	1500	ABOVEGROUND	02/00	
0002	TEMP OUT OF SERVICE	SODIUM HYPOCHLORITE	300	ABOVEGROUND	02/00	

Toxicity Information Summary

CHEMICAL NAME	CAS−NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
SODIUM HYDROXIDE	1310732	X		X		X	
SODIUM HYPOCHLORITE	7681529	X	X	X		X	

NO HAZARDOUS SUBSTANCE WASTE DISPOSAL SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO TOXIC AIR, LAND AND WATER RELEASES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

NO WASTEWATER DISCHARGES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

NO AIR DISCHARGE FACILITIES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

NO CIVIL & ADMINISTRATIVE ENFORCEMENT DOCKET FACILITIES IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS

U.S. EPA EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) SPILLS
AT THE LOCATION OR POTENTIALLY AT THE LOCATION OF
B.G.D. Plant
Bethpage, NY 11714

* Any ERNS Spills listed below are NOT mapped in this report *

ONSITE ERNS (A count of these spills can be found in the distance interval table):
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

POTENTIALLY ONSITE ERNS:
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

 June 14, 2018 'B.G.D. Plant'

Unmappable facilities for 'Nassau' County

NPL/CERCLIS/NYSDEC Inactive Haz. Waste or Reg. Qual. Sites

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
130003	GRUMMAN AEROSPACE-BETHPAGE FACILITY	STEWART AVENUE	BETHPAGE	11714
130003A	NORTHROP GRUMMAN - BETHPAGE FACILITY	HICKSVILLE ROAD	BETHPAGE	11714
NY2170022162	NAVAL WEAPONS INDUSTRIAL RESERVE PLANT	SOUTH OYSTER BAY ROAD	BETHPAGE	11714
NY8570090003	NAVAL WEAPONS PLANT	S OYSTER BAY & STEWART	BETHPAGE	11714
NYD002047967	GRUMMAN AEROSPACE CORP	SOUTH OYSTER BAY RD	BETHPAGE	11714

RCRA Corrective Action Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYD002047967	NWIRP BETHPAGE	999 SOUTH OYSTER BAY ROAD	BETHPAGE	11714
130003	GRUMMAN AEROSPACE-BETHPAGE FACILITY	830 S. OYSTER BAY ROAD	BETHPAGE	11714

Solid Waste Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
	MEDI-PHYSICS,INC. NUCLEAR			UNKNOWN
30S19	BEECHWOOD			UNKNOWN
30T09	V & G RUBBISH REMOVAL			UNKNOWN
30W13R	OLD BETHPAGE WOOD WASTE P			UNKNOWN
30W17R	TWIN COUNTY RECYCLING COR			UNKNOWN
30W19R	JP EQUIPMENT CONTRACTING			UNKNOWN
30D20	BETHPAGE STATE PARK	BELMONT LK. ST. PK.	BABYLON	11735
30T27R	CONROC RECYCLING		HEMPSTEAD	UNKNOWN
NY00000000001	MUTUAL OF NEW YORK	UNKNOWN	-	UNKNOWN
NY00000000007	GILFORD SALVAGE	-	-	UNKNOWN
NY00000002031	WARREN BROTHERS/ COES NECK	?	?	UNKNOWN
NY00000002023	BETHPAGE STATE PARK	BETHPAGE PARKWAY	FARMINGDALE	11735
NY00000002042	V & G RUBBISH REMOVAL	UNKNOWN	UNKNOWN	UNKNOWN

Hazardous Spills - TANK FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9812381	BETHPAGE STATE PARK	99 QUAKER MEETING HOUSE	BETHPAGE	11735

Hazardous Spills - TANK TEST FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
8807195	BETHPAGE STATE PARK	BETHPAGE PARKWAY	BETHPAGE	11735
8807183	BETHPAGE STATE PARK	BETHPAGE STATE PARK	BETHPAGE	11735
8803698	OGS/NYS	BETHPAGE STATE PARK	BETHPAGE	11735

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
8300974				UNKNOWN
9800125	MAIN GOLF BLDG	MAIN GOLF BLDG	BETHPAGE	11735
9304899	UNK	RTE 135 NORTHBOUND	BETHPAGE	UNKNOWN
0904083	LIRR MAIN LINE	UNKNOWN	BETHPAGE	11714
8705862	UNKNOWN	LEXONY INT'L WAREHOUSE	EAST FARMINGDALE	11735
9711600	BETHPAGE STATE PARK	99 QUAKER MEETING HOUSE	FARMINGDALE	11735
8300770			FARMINGDALE	11735
8101736			FARMINGDALE	11735
8101590			FARMINGDALE	11735
8000834			FARMINGDALE	11735
0325074	UNDERNEATH WATER TOWER	BACK OF THE BUILDING	FARMINGDALE	11735
0202892	RESIDENCE	34 FRAEY STREET	FARMINGDALE	11735
0404472	COMMERCIAL BUILDING	WESTERN AVE/PEARL STREET	LONG ISLAND	UNKNOWN
7801000			MATTIACE	UNKNOWN

1207580	HURRICANE SANDY SPILLS	MULTIPLE	MULTIPLE	UNKNOWN
9505922	SPILL NUMBER 9505922	NASSAU	NASSAU	UNKNOWN
9002447	UNK/INCINERATOR PLANT	INCINERATOR PLANT	NASSAU	UNKNOWN
8706738	UNKNOWN	NASSAU	NASSAU	UNKNOWN
1508403	OYSTER BAY TEST ONLY	OYSTER BAY	OYSTER BAY	11771
0513886	OYSTER BAY	40.52 N 075.31W	OYSTER BAY	11771
0104512	COMMANDER OIL	COMMANDER OIL	OYSTER BAY	11771
9608647	SPILL NUMBER 9608647	62 BRANCH STREET	PLAINVIEW	11803
9516654	UNKNOWN	SEAFORD OYSTER BAY EXPRESS	PLAINVIEW	UNKNOWN
8000634			PLAINVIEW	11803
7801103		SAMUEL LETTINI	PLAINVIEW	11803
0811087	SEAFORD OYSTER BAY	SEAFORD OYSTER BAY EXIT 9/10	PLAINVIEW	11803
8908023	QUADREL BROS	SEAFORD OYSTER BAY ROAD	SEAFORD	UNKNOWN

Hazardous Spills - MISC. SPILL CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9804976	UNKNOWN	RTE 135 EXITS 7 & 8	BETHPAGE	11714
9306554	LILCO	BATOR DRIVE/WHALEY AVENUE	BETHPAGE	11714
9008567	RUTTURA CO	OLD BETHPAGE SOLID WASTE	BETHPAGE	11804
8808368	WRIGHT	PLAINVIEW ROAD	BETHPAGE	11714
8806374	ROBERT MASTELLI	RTE 135	BETHPAGE	UNKNOWN
1511349	BETHPAGE STATE PARK	BETHPAGE STATE PARK	BETHPAGE	11714
1503992	UNKNOWN	107 NORTH AVENUE	BETHPAGE	11714
9002228	LOOYL WEST	QUAKER MEETING HOUSE ROAD	FARMINGDALE	11735
9800273	BUNGALOW	BUNGALOW	MEADOW ISLAND	UNKNOWN
9512114	EXIT 5 SOUTHBOUND	SEAFORD OYSTER BAY EXPRES	NORTH MASSAPEQUA	UNKNOWN
9803167	TOWN OYSTER BAY PARK	SOUTH STREET	OYSTER BAY	11771
0812683	RESIDENCE	46 HILL STREET	OYSTER BAY	11771
0225075	DRAINAGE DITCH	WHITE STREET	OYSTER BAY	11771
9509093	HICK RESIDENCE	5 NETTO STREET	PLAINVIEW	11803
9502502	D`AMATO	SEAFORD OYSTER BAY EXPWY	PLAINVIEW	11803
9410721	DAVIS RESIDENCE	20 HOPEWELL DRIVE	PLAINVIEW	11803
9305069	UNK	PLAINVIEW ROAD	PLAINVIEW	11803
9304441	LILCO	WEST SIDE PLAINVIEW ROAD	PLAINVIEW	11803
9201979	NCDPW	POLICE OFFICES	PLAINVIEW	UNKNOWN
9107635	FROMM RESIDENCE	3 GERME AVENUE	PLAINVIEW	UNKNOWN
8607589	LILCO	GERHARD ROAD POLE 98	PLAINVIEW	11803
8402498	UNK	RTE 135	PLAINVIEW	11803
0850049	UNKNOWN	SEAFORD OYSTER BAY EXPRESSWAY	PLAINVIEW	11803
0305116	UNKNOWN	28 MERMAN STREET	PLAINVIEW	11803
9209999	MICHAEL DELVIO	RTE 135 NORTHBOUND	SEAFORD	UNKNOWN
9005078	UNK	QUAKER MEETING HOUSE RD	SOUTH FARMINGDALE	11735
9608397	SPILL NUMBER 9608397	SEAFORD OYSTER BAY ROAD	SYOSSET	UNKNOWN
8806544	UNK	SEAFORD OYSTER BAY EXPWY	WOODBURY	UNKNOWN

Petroleum Bulk Storage Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NCFM00014092	REXCORP PLAZA TANK REGISTRATION	340 REXCORP PLAZ		UNKNOWN
NCFM05568266	CITY & SUBURBAN @ I PARK (MAIN BLDG)			UNKNOWN
052344	BETHPAGE SCH.BUS GARAGE	BROADWAY	BETHPAGE	11714
GS9000003	GONE-INACTIVE FILE	BROADWAY	BETHPAGE	11714
GS9000059	BETHPAGE WATER DISTRICT	BROADWAY	BETHPAGE	11714
053170	BETHPAGE STATE PARK	99 QUAKER MEETING HSE RD.	FARMINGDALE	11735
NCFM00020984	NYS BETHPAGE STATE PARK MACHINE	99 QUAKER MEETING HOUSE RD	FARMINGDALE	11735

Hazardous Waste Generation or Transport Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYP000145100	BUSH INDUSTRIES			UNKNOWN
NYR000054288	NASSAU COUNTY PUBLIC WORKS	1 POWELL HOUSE	BETHPAGE	11714
NYD981875362	BETHPAGE STATE PARK	BETHPAGE PARKWAY	FARMINGDALE	11735

NYP000932590	PATHMARK STORES INC	(NO STREET ADDRESS IN CONVERSION)	MUNSEY	UNKNOWN
NYP000879568	NYSDEC	NASSAU COUNTY	N/S	UNKNOWN
NYR000924225	NYSDOT	N/S	N/S	UNKNOWN
NYD981180607	SUN REFINING & MARKETING CO	WATERMILL RD	NEW YORK	UNKNOWN
NYP000955120	VERIZON NEW YORK INC MANHOLE	W BROADWAY & DIGBY	NEW YORK	UNKNOWN
NYP000872002	NYSDEC	TOWN YARD	OYSTER BAY	UNKNOWN
NYP000300467	NYSDEC	RT 135	PLAINVIEW	UNKNOWN

Wastewater Discharges

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYP082020				11735

Air Releases

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
3605912225				UNKNOWN

Civil & Admin. Enforcement Docket Sites

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYD986987097	A 1 FUEL CO OR NOBEK FUEL CO	NOT AVAILABLE	UNKNOWN	UNKNOWN

Hazardous waste codes presented in individual Toxic Information Profiles are defined below.

D008 Lead

Source: U. S. Environmental Protection Agency

How Toxic Site Locations Are Mapped

Toxics Targeting maps toxic site locations on a digital version of the U. S. Census map or those used by local authorities using addresses and map coordinates provided by site owners/operators or government agencies. In order to allow site locations to be verified independently, the information used to map each site is presented in the first section of each Toxic Site Profile, along with a description of the mapping technique used and any address corrections that were made in order to locate toxic sites with incomplete or inadequate site location information. The mapping process is explained below.

Map Identification Number: 12 Site Name: Acme World Manufacturing, Inc.

Site Address: 55 Main Street Anytown, NY 11797

MAP LOCATION INFORMATION

Site location mapped by:

Address Matching

1) Most toxic sites are mapped by matching addresses provided by site owners/operators or government agencies with locations on a digital version of the street or parcel map. These site locations are identified with the method used to map them.

Note: Some sites have an address match location and a map coordinate location. Both locations are mapped because they can be equally correct.

or Map Coordinate

2) Some toxic sites are located using map coordinates provided by site owners/ operators or government agencies. These site locations are identified "map coordinate." Map coordinates for Toxic Wastewater Discharges, Toxic Release Inventory sites and Major Oil Storage Facilities should be considered suspect.

or Manual Mapping

or Site Visit

3) Incomplete addresses or map coordinates require some site locations to be determined by commercial street maps (manual mapping), site visits, map coordinates from other databases and address location services. Application of any of these methods is identified accordingly.

ADDRESS CHANGE INFORMATION

Revised Street: NO CHANGE

Revised zip code: NO CHANGE

4) Site addresses are sometimes corrected to eliminate obvious errors that prevent sites from being mapped. All address corrections are noted here.

Information Source Guide

Toxics Targeting's Environmental Reports contain government and other information compiled on 18 categories of reported known or potential toxic sites. Each toxic site database is described below with information detailing a) the source of the information, b) the date when each database is covered to and c) when *Toxics Targeting* obtained the information..

1) **National Priority List for Federal Superfund Cleanup:** Toxic sites nominated for cleanup under the Federal Superfund program. Annual compilation of special two-page detailed profiles of NPL sites. Also includes delisted NPL sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated from: 9/09/2015. Data obtained by Toxics Targeting: 9/09/2015.
New Facilities updated through: 9/30/2016. Data obtained by Toxics Targeting: 9/30/2016.

2) **Inactive Hazardous Waste Disposal Site Registry:** New York State database that maintains information and aids decision making regarding the investigation and cleanup of toxic sites. The Registry's data includes two-page profiles noting site name, ID number, description, classification, cleanup status, types of cleanup, owner information, types and quantities of contaminants, and assessment of health and environmental problems. Also included are sites that qualify for possible inclusion on the Registry. These Registry Qualifying sites may or may not be on the Site Registry.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 4/5/2018. Data obtained by Toxics Targeting: 4/5/2018.
New Facilities updated to: 4/5/2018. Data obtained by Toxics Targeting: 4/5/2018.

3) **Federal & State Corrective Action Activity (CORRACTS):** New York State and Federal databases of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.**

Federal Data Source: U. S. Environmental Protection Agency[1]
Data attributes updated through: 3/01/2018. Data obtained by Toxics Targeting: 3/07/2018.
New facilities updated through: 3/01/2018. Data obtained by Toxics Targeting: 3/07/2018.

State Data Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 4/05/2018. Data obtained by Toxics Targeting: 4/05/2018.
New facilities updated through: 4/05/2018. Data obtained by Toxics Targeting: 4/05/2018.

4) **CERCLIS:** Toxic sites listed in the Federal Comprehensive Environmental Response, Compensation and Liability Information System. Includes Active and No Further Remedial Action Planned (NFRAP) sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated through: 10/25/2013. Data obtained by Toxics Targeting: 1/07/2014.
New Facilities updated through: 7/17/2017. Data obtained by Toxics Targeting: 8/22/2017.

5) **Brownfield Programs:** NYS programs for sites that are abandoned, idled or under-used industrial and/or commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.
ASTM required.* Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 4/5/2018. Data obtained by Toxics Targeting: 4/5/2018.
New Facilities updated to: 4/5/2018. Data obtained by Toxics Targeting: 4/5/2018.

(a) **Brownfield Cleanup Program (BCP)**
(b) **Voluntary Cleanup Program (VCP)**
(c) **Environmental Restoration Program (ERP)**

6) **Solid Waste Facilities: NYS Solid Waste Registry**, including, but not limited to, landfills, incinerators, transfer stations, recycling centers.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data updated to: 4/1/2013. Data obtained by Toxics Targeting: 4/1/2013.

7) **RCRA Hazardous Waste Treatment, Storage or Disposal Facility Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the DEC's Division of Environmental Remediation pursuant to NYS Law and the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through: 1/22/2018. New facilities obtained by Toxics Targeting: 1/24/2018.
Manifest transactions data updated to: 1/22/2018. Manifest transactions data obtained by Toxics Targeting: 1/24/2018.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 3/01/2018. New facilities obtained by Toxics Targeting: 3/07/2018.
Data attributes updated through: 3/01/2018. Data obtained by Toxics Targeting: 3/07/2018.

8) **Spills Information Database:** Spills reported to the DEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from Petroleum Bulk Storage Regulations) or 6 NYCRR Section 595.2 (from Chemical Bulk Storage Regulations). This database includes both *active* and *closed* spills.
ASTM required.* Fannie Mae.** Source: NYS Department of Environmental Conservation.[2]

New spills through: 3/26/2018 New spills data obtained by Toxics Targeting: 3/26/2018
Spill attribute data through: 3/26/2018 Spill attribute data obtained by Toxics Targeting: 3/26/2018

Active spills: paperwork not completed. Closed spills: paperwork completed.
Both active and closed spills may or may not have been cleaned up (see Date Cleanup Ceased in spill profiles).

9) **Major Oil Storage Facilities:** NYS database of facilities licensed pursuant to Article 12 of the Navigation Law, 6NYCRR Parts 610 and 17NYCRR Part 30, such as onshore facilities or vessels, with petroleum storage capacities equal to or greater than 400,000 gallons. **Tank and other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

Data updated through: 7/1/2016. Data obtained by Toxics Targeting: 7/1/2016.

10) **Petroleum Bulk Storage Facilities:** County or State databases of aboveground and underground petroleum storage facilities.
ASTM required.* Fannie Mae required.**

All New York Counties except Cortland, Nassau, Rockland, Suffolk, and Westchester:
NYS Petroleum Bulk Storage Database. This includes all New York State counties except Cortland, Nassau, Rockland, Suffolk, and Westchester. ASTM required.* Fannie Mae required.**
Source: NYS Department of Environmental Conservation.[2]
New facilities updated through: 7/1/2016. Data obtained by Toxics Targeting: 7/1/2016.
Tank data updated through: 7/1/2016. Data obtained by Toxics Targeting: 7/1/2016.

Cortland County: **Cortland County Health Dept. Tank database**.
Source: Cortland County Health Department[7]
Data updated through: 7/15/2004 Data obtained by Toxics Targeting: 7/23/2004

Nassau County: a compilation of the following 2 databases:
Heat producing products and other products:
Source: Nassau County Department of Health.[3]
NOTE: This data is being withheld by the Nassau County DOH
Data updated through: 4/1/2001. Data obtained by Toxics Targeting: 1/2/2002

Generally non-heat producing products:
Source: Nassau County Fire Marshal.[4]
Data updated through: 8/6/2009. Data obtained by Toxics Targeting: 9/22/2009

Rockland County: **Rockland County Dept. of Health Tank database.**
Source: Rockland County Department of Health.[5]
Data updated through: 1/6/2017. Data obtained by Toxics Targeting: 1/11/2017.

Suffolk County: **Suffolk County Dept. of Health Article 12 database**
Source: Suffolk County Department of Health Services.[6]
Data updated through: 1/30/2014. Data obtained by Toxics Targeting: 7/22/2014.

Westchester County: **Westchester County Dept. of Health database**.
Source: Westchester County Department of Health [8]
Data updated through: 2/22/2016 Data obtained by Toxics Targeting: 2/22/2016

11) **RCRA Hazardous Waste Generators and/or Transporters Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the NYS Department of Environmental Conservation's Division of Environmental Remediation pursuant to New York State Law.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through:	1/22/2018.	New facilities obtained by Toxics Targeting:	1/24/2018.
Manifest transactions data updated to:	1/22/2018.	Manifest transactions data obtained by Toxics Targeting:	1/24/2018.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]

New facilities updated through:	3/01/2018.	Data obtained by Toxics Targeting:	3/07/2018.
Data attributes updated through:	3/01/2018.	Data obtained by Toxics Targeting:	3/07/2018.

12) **Chemical Bulk Storage Facilities:** New York State database of facilities compiled pursuant to 6NYCRR Part 596 that store regulated substances listed in 6NYCRR Part 597 in aboveground tanks with capacities greater than 185 gallons and /or in underground tanks of any size. **Tank and other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data updated through: 7/1/2016. Data obtained by Toxics Targeting: 7/1/2016.

13) **Hazardous Substance Waste Disposal Site Study:** NYS database of waste disposal sites that may pose threats to public health or the environment, but could not be remediated using monies from the Hazardous Waste Remedial Fund.
Source: New York State Department of Environmental Conservation.[2]
Data updated to: 5/16/2000. Data obtained by Toxics Targeting: 5/16/2000.

14) **Toxic Release Inventory (TRI):** Federal database of manufacturing facilities required under Section 313 of the Federal Emergency Planning and Community Right-to-Know Act to report releases to the air, water and land of any specifically listed toxic chemical. See Fannie Mae requirement** below.
Source: U. S. Environmental Protection Agency.[1] / NYS Department of Environmental Conservation[2]
Data updated through: 3/8/2004. Data obtained by Toxics Targeting: 3/25/2004

15) **Toxic Wastewater Discharges (Permit Compliance System):** Federal database of discharges of wastewater to surface waters and groundwaters. See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 6/17/2004. Data obtained by Toxics Targeting: 7/19/2004.

16) **Air Discharge Facilities:** EPA AIRS database containing address information on each air emission facility and the type of air pollutant emission it is. Compliance information is also provided on each pollutant as well as the facility itself.
See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency[1]
Data updated through: 11/24/1999. Data obtained by Toxics Targeting: 1/6/2000

17) **Civil Enforcement & Administrative Docket:** This database is the U. S. EPA's system for tracking administrative and civil judiciary cases filed on behalf of the agency by the Department of Justice. Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
New Sites through: 10/14/1999.
Data updated through: 10/14/1999. Data obtained by Toxics Targeting: 11/18/1999.

18) **Emergency Response Notification System (ERNS):** Federal database of spills compiled by the Emergency Response Notification System. On-site searches only.
ASTM required.* See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 1/31/2000. Data obtained by Toxics Targeting: 2/15/2000

* American Society of Testing Materials: Standard Practice on Env. Site Assessments: Phase I Environmental Site Assessment Process (E1527-05).
** Fannie Mae's Part X Environmental Hazards Management Procedures specify 1.0 mile searches for "any state or Federal list of hazardous waste sites (e.g. CERCLIS, HWDMS etc.)." Searches for the property and adjacent properties are specified for "chemical manufacturing plants," "obvious high risk neighbors engaging in storing or transporting hazardous waste, chemicals or substances" and "...any documented or visible evidence of dangerous waste handling... (e.g. stressed vegetation, stained soil, open or leaking containers, foul fumes or smells, oily ponds, etc." Searches for property and adjacent properties can include sites up to a quarter mile away (W. Hayward, Director, Multi-Family Business Planning and Control, Fannie Mae, personal communication, 5/94).

[1]U. S. Environmental Protection Agency, 290 Broadway, NY, NY 10007-1866.

[2]NYS Department of Environmental Conservation, 625 Broadway, Albany, NY 12233.

[3]Nassau County Department of Health, Bureau of Land Resources Management, 240 Old Country Road, Mineola, NY 11501.

[4]Nassau County Fire Commission, Office of the Fire Marshal, 899 Jerusalem Avenue, P. O. Box 128, Uniondale, NY 11553.

[5]Rockland County Department of Health, The Dr. Robert Yeager Health Center, Building D, Sanitorium Road, Pomona, NY 10970.

[6]Suffolk County Department of Health, Hazardous Materials Management, 15 Horseblock Place, Farmingville, NY 11738-1220.

[7]Cortland County Department of Health, 60 Central Avenue, Cortland, NY 13045-2746

[8]Westchester County Department of Health, 145 Huguenot St., New Rochelle, NY 10801

APPENDIX E 2017 WATER CONSERVATION PLAN

WATER CONSERVATION PLAN

Bethpage Water District
Town of Oyster Bay
Nassau County, New York

H2M Project No.
BPWD 1750

APRIL 2017

Prepared for:

Bethpage Water District
25 Adams Avenue
Bethpage, New York 11714

Prepared by:

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, New York 11747

H 2 M water

TABLE OF CONTENTS

SECTION

TABLE OF CONTENTS CONT'D

TABLES

FIGURES

EXHIBITS

PREFACE

Water conservation is key to protecting Long Island's precious natural resource. Conservation allows for increased water availability in emergency situations such as droughts, and reduces the stress on infrastructure such as water supply wells and water mains. The Bethpage Water District is aware of the benefits associated with water conservation and consistently promotes initiatives to the best of its ability with the available resources. As discussed in this report, the Bethpage Water District is dedicated to promoting water conservation which should be taken into consideration during evaluation of this plan.

It should be recognized that water districts do not have the authority to enforce fines to violators of local water conservation ordinances. While districts can facilitate discussions with local planning boards, it is ultimately up to jurisdictions with court systems to legally enforce any water conservation initiatives. The water districts can only educate, promote responsible water management techniques, and request that consumers be aware of the importance of reducing water waste by following recommended conservation methods.

While the need to reduce irrigation demand is understood, it should also be noted that irrigation demands are also dependent on weather, such as the amount, frequency, and duration of rainfall. Although the implemented rate structures are designed to encourage water conservation, the cost of water is not recognized by customers as a strong incentive in reducing irrigation demands. Believing in the importance of preserving the health of Long Island's aquifers, the Bethpage Water District will do its best in continuing to educate and encourage its customers on water use reduction.

BETHPAGE WATER DISTRICT
NASSAU COUNTY, NEW YORK

WATER CONSERVATION PLAN

APRIL 2017

1.0 PURPOSE AND INTRODUCTION

1.1 PURPOSE

This Water Conservation Plan has been developed for the Bethpage Water District as required by the New York State Department of Environmental Conservation (NYSDEC). As per New York State Codes, Rules, and Regulations, Title 6 Chapter V, Part 601.10, the NYSDEC requires water suppliers to submit a Water Conservation Plan with an annual submission of the NYSDEC Water Conservation Annual Reporting Form. This plan will address all items in the NYSDEC's updated reporting form.

The Bethpage Water District understands that practical water conservation measures and sustainable practices can be used for short and long term preservation of the groundwater resource and mitigate the need to construct additional infrastructure, such as new supply wells.

The "*Water Conservation Manual for Development of a Water Conservation Plan,*" and 2016 *"Water Conservation Annual Reporting Form"* as distributed by the NYSDEC Division of Water, were used as guides in preparing this conservation program. This guidance manual addresses many basic and vital elements for water conservation planning that include source water inventory, water usage and metering, water supply auditing, leak detection and repair, and water use reduction. These measures are consistent with NYSDEC water conservation policy objectives and will be evaluated and addressed in this Plan. Current District conservation measures and programs will also be reviewed and evaluated including emergency water conservation measures and procedures.

1.2 INTRODUCTION

The Bethpage Water District (District) is located at 25 Adams Avenue, Bethpage, New York 11714. The District encompasses 5 square miles and serves an estimated population of 33,000 through approximately 8,800 metered connections. Established in 1923, the District serves the communities of Bethpage and portions of Levittown, Hicksville, South Farmingdale, Plainview and Old Bethpage.

The contact information for the District is as follows:

Bethpage Water District

Address:	25 Adams Avenue, Bethpage, New York 11714
Phone Number:	516 – 931 – 0093

Superintendent

Name:	Michael Boufis
Phone Number:	516 – 931 – 0093
Email Address:	mboufis@bethpagewater.com

Cross Connection Control

Name:	Michael Boufis
Phone Number:	516 – 931 – 0093
Email Address:	mboufis@bethpagewater.com

Water Conservation

Name:	Michael Boufis
Phone Number:	516 – 931 – 0093
Email Address:	mboufis@bethpagewater.com

2.0 SOURCE WATER INVENTORY AND WATER USAGE

2.1 SOURCE WATER INVENTORY

The District obtains its water supply from nine supply wells from six plant sites which are located throughout the service area. Summarized in Table 2-1, the nine wells have a combined NYSDEC approved pumping capacity of 18.98 million gallons per day (MGD).

All wells are equipped with flow meters and flow recorders. Sodium hypochlorite for disinfection and caustic soda (sodium hydroxide) for pH adjustment is provided at each well. Additional wellhead treatment for VOC removal and/or nitrate removal is provided at several wells.

As shown on Table 2-2, the District has 14 interconnections with neighboring water suppliers. The hydraulic gradients for each interconnection are compatible. None of the interconnections are metered. Since water is not sold or regularly transferred between neighboring systems, metering the interconnections is not necessary. All valves are exercised annually.

2.2 WATER USAGE

Summarized below is the District's water consumption in 2016:

Bethpage Water District 2016 Pumpage (in thousands of gallons)			
Water Production	1,561,018	Water Consumption	1,380,972
Total Metered Production	1,561,018	Total Metered Consumption	1,380,972
Average Day Production (Total/365)	4,277	Average Day Consumption	3,783
Peak Day Production (Largest Single Day)	8,649	Per capita usage per day (avg. day/population served - gpcd)	115
Peak Season Daily Average (May - Sept.)	6,173	Non-Peak Season Daily Average (Oct. - April)	2,908

2.3 WATER USAGE BY TYPE

The breakdown of the District's consumer type and consumption quantity is as follows:

Consumer Type	Quantity Consumed (in thousands of gallons)
Residential	1,111,960
Commercial	269,012

2.4 WATER SUPPLY AUDIT

The District conducts an annual audit to calculate total non-revenue water. This data attribute is necessary in determining the effectiveness of conveying water to the consumer with minimal losses in the transmission and distribution system. Simply computed, non-revenue water is the difference between the total volume of water produced at the source discharge (wellhead) and the quantity of water consumed over the course of a single year. In essence, non-revenue water is water that is not metered. Non-revenue water in 2016 for the Bethpage Water District was 180,046,000 gallons or 11.5% as shown below:

$$Non-Revenue\ Water = \frac{Total\ Volume\ Produced - Total\ Volume\ Consumed}{Total\ Volume\ of\ Water\ Metered} \times 100$$

$$Non-Revenue\ Water\ in\ 2016 = \frac{1{,}561{,}018{,}000\ Gallons - 1{,}380{,}972{,}000\ Gallons}{1{,}561{,}018{,}000\ Gallons} \times 100 = 11.5\%$$

Non-revenue water can be primarily attributed to leaks within the transmission and distribution system, authorized hydrant use (water main flushing, fire department activity, etc.) and unauthorized and unmetered hydrant usage. Per industry standard, 10 percent is used as a benchmark for non-revenue water. Based on present data, the non-revenue water rate is above the acceptable limit for the District. Recognizing the importance of water losses, the District currently has several on-going infrastructure improvement projects that will reduce the amount of “non-revenue” water.

As mandated by the NYSDEC, the District operates under an annual pumpage cap which limits the total amount of water withdrawn from the aquifers. The Bethpage Water District NYSDEC annual pumpage cap is 1,588 MGY with a five-year average pumpage cap of 1,435 MGY. As shown on Table 2-3, the District is currently above the NYSDEC five year running cap, but below the one year maximum.

2.5 CUSTOMER BILLING

The District bills it customers based on a daily step billing schedule for all residential and commercial accounts, beginning with a minimum charge of $7.50. The District reviews its rate structure annually. Its last reviewed and revised rate structure was put into effect in 2014. The District will review its rate structure again in January 2018.

Water Rates **Baseline Charge: $7.50**	
Consumption (gallons)	Cost per Thousand Gallons
Up to 10,000	$0.75
11,000-35,000	$1.25
36,000-60,000	$1.60
61,000-100,000	$1.95
Over 100,000	$2.60

3.0 INFRASTRUCTURE

The following sections of this plan will review the District's infrastructure programs and initiatives.

3.1 METERS

All water supply sources and service connections are currently 100% metered. The majority of the District's well flow meters (master meters) range in age from 2 to 50 years. These meters will be replaced in the next five years under capital improvement projects that the District is in the process of formalizing. The age range of the service meters are 0 to 30 years with an average age of 1 year.

In 2011, the District began its water meter replacement program. This program entailed replacement of its meters along with the meter communication system. The District utilizes fixed network with gateway transmitters, with approximately 70% of meters using cellular software. This method allows for precise and non-intrusive water meter readings as the District can now remotely read meters without traveling to each meter. The software is capable of customizable data analysis which will result in faster leak detections, revenue management, and water conservation clarity. This upgrade is also an avenue for consumer engagement through an application available to download, EyeOnWater. This program gives customers direct access to their water consumption data, allowing them to view, understand, and manage usage. Availability of this information will promote change in customer behavior with respect to water conservation. Currently, 658 customers have signed up for EyeOnWater. As shown on Exhibit A, the District is continuously encouraging its customers to use this feature. Nearly 99% of this replacement project is complete, with only 20 service meters remaining for replacement. Moving forward, the District plans to replace service meters after 10 years of use, replacing all meters within five years.

As water meters age, they tend to run slow and provide lower than actual readings. An accurate meter reading, coupled with a block rate pricing program, is a major means of water conservation. Meters should also be maintained and calibrated as per industry standards (AWWA Manual M6) and meter manufacturer's recommendations. The well flow meters are recalibrated annually and are replaced during major plant renovations. Service meters are never calibrated. Instead, they are replaced every 10 years or when suspected to be malfunctioning.

3.2 WATER MAIN AND FIRE HYDRANTS

The District has 110 miles of water main in its distribution system. Most of the water main is 90 years old with an average age of 85.

Over the past year, the District has not replaced any water main but has installed new transmission main. The District plans to develop a water main replacement program in 2018 with implementation as soon as possible. Currently, the District replaces water main as needed. The most recent large scale water main replacement occurred in 2014 which consisted of 6,000 linear feet of 12-inch water main to replace undersized and old piping.

The District maintains approximately 1,089 fire hydrants in its service area. They have a policy in place to immediately repair damaged fire hydrants on an emergency basis. All the hydrants are examined and repainted annually. Additionally, hydrants are tested and flushed twice a year.

All District personnel are on the lookout for unauthorized use of fire hydrant water. The District has also requested residents to stay vigilant of any suspicious activity, including reporting of any suspected unauthorized use of fire hydrants.

3.3 LEAK DETECTION

When minor leaks are discovered, some water utilities may throttle or close the line valve and make the repair several days later but the District generally mobilizes a repair crew as soon as possible to make repairs on the mains and will continue to do so. With respect to service lines, the District requests the respective homeowner to address the minor leaks as soon as possible.

Leak detection programs are costly, but if there are significant leaks, the savings can pay for the program in two to three years. A leak detection program can be implemented to examine the older mains of the system. Once leaks are detected, a main repair program can be implemented. The cost of conducting a leak detection system with the services of a professional firm is estimated at $150-$200 per mile of system. The cost of repairing the main leaks can vary from $2,000 and higher depending on the type of leak and the road restoration required. Leak detection programs, especially in older systems, generally pay back within a few years. The cost of pumping, treating and delivering water can add up to substantial sums in relatively large undetected leaks.

The District's latest leak detection survey was completed in 2010 by New York Leak Detection, Inc. (NYLD) for 110 miles (100%) of the distribution system. Fifty-one leaks were found including 9 service line leaks, 20 fire hydrant leaks,7 water main leaks, and 15 other leaks. All leaks were repaired by the District. NYLD used sonic leak detection with the Fluid Conservation System S-30 Survey Instrument and the LC-2500 Computerized Leak Correlator to conduct the survey. The District plans to conduct the next leak detection survey in 2018, during which all of the District's distribution system will be surveyed with sonic leak detection. After that survey, the District plans to survey one-third of the distribution system every

year. The District also has a water distribution valve and hydrant maintenance program. During the summer, employees listen for leaks at hydrants and initiate a work order to repair the same.

Due to the new meter communication system, the District is able to compute and analyze each customer's daily usage. If a customer is identified to have an unusual or constant usage, the District will first call, then visit the customer to alert them of their usage. If the customer is not available, the District leaves a door hanger with information of a possible leak. See Exhibit B for a sample door hanger. The District also offers to visit the customer and help determine the source of the high usage and if any leaks exists. If it is determined that the leak is from a District-owned source, the District will repair the leak. The District also includes a meter alert on water bills of customers who appear to be consuming more than average. Exhibit C provides a sample water bill with a meter alert.

4.0 OUTREACH AND PUBLIC EDUCATION

The District recognizes the importance of outreach and is very proactive in educating the community. On an annual basis, the District has done, and plans to continue to do the following community outreach:

(1) Participates in the Bethpage fair hosted by the Bethpage Chamber of Commerce where water bottles, pamphlets and water conserving devices are provided and how to conserve water is discussed.

(2) Presents to senior citizens on where water comes from and the importance of water conservation at a local senior citizen home.

(3) Presents to the three local elementary schools to educate students on the water cycle and the importance of water conservation. The District also hosts a poster contest at the elementary schools during Conservation Week.

(4) Gives tours of its facilities to local Girl Scouts, Brownies, Cub Scouts, and Boy Scouts troops to earn the "Water" merit badge.

(5) Partners with the Bethpage School District's 21st Century Scholars program and provide water conservation training to students. Once a year, the District provides a tour of its facilities for the fifth graders of this program.

Twice a year, the District distributes its newsletter, "Water Connection", to each of its customers and keeps them informed on the District's improvement projects, water quality, and other District news and notices. Within the newsletter, the District also highlights the importance of water conservation and urges its customers to conserve. As shown in Exhibit D, the District's spring publication provides a "Questions and Answers" from the District superintendent regarding water quality while the fall publication provides a focus on winterization and the importance of clearing hydrants of snow and debris. The District produces an annual water quality report, informing customers where their water comes from, how their water is treated, water quality, and a source water assessment. There is also a section dedicated to water conservation which includes tips on how to save water and a reminder of local irrigation regulations. This report is distributed to customers annually. Additionally, on each of their water bills, the District includes information on how to sign up for EyeOnWater. Irrigation ordinance reminders are also included.

The District promotes a strong water conservation program and provides information on different conservation methods on its website (bethpagewater.com). The website has several webpages dedicated to educating the public on water conservation and provides resourceful links including the American Water Works Association, the Nassau County Department of Health and the United States Environmental Protection Agency. Items the District's webpages cover are listed below:

- Information on the importance of water conservation
- Ways to save which includes tips and techniques by season and areas around the house
- Lawn irrigation system suggestions
- Indoor water use statistics

Additionally, the District maintains social media accounts to keep in touch with its customers. The District utilizes Facebook, Instagram, and Twitter to inform the public about District activity, water treatment, reminders, tips, and usage facts that encourage customers to be more cognizant of their daily habits and prevent water wastage.

5.0 REDUCING WATER USE

5.1 TOP TEN WATER USERS

The District's top ten users account for 3.3% of water consumed in the District. The District plans to conduct an audit for each of the facilities listed below. The results of the audit will allow the District to work with the user in developing a plan to reduce consumption.

BETHPAGE WATER DISTRICT
2016 TOP 10 WATER USERS & AUDIT SCHEDULE

Account/User Name	Water Used This Year (Gallons)	Type of Service	Audit Schedule
(CHS) St. Joseph Hospital	9,696,000	Hospital	Completed
Cablevision	8,638,000	Commercial	Completed
Sterling Equities	8,520,000	Commercial	2017
Ice Rink Bethpage Community Park	6,567,000	Commercial	2017
Cablevision	3,673,000	Commercial	Completed
Nassau Steel LLC	2,480,000	Commercial	2017
Steel Los III	2,085,000	Commercial	2017
Winter Rlty LLC SIB Realty	1,748,000	Commercial	2017
Bethpage Golden Key Motel	1,285,000	Hotel	2017
Zorn's Poultry Farms	1,253,000	Farm	2017
TOTAL:	**45,945,000 Gallons**		

The District is currently in the process of auditing its top ten users. The District first met with the top user, discussed their water usage, had them sign up for EyeOnWater, and helped determine the source of their high usage. The District plans to continue to meet with the remaining top ten users to determine ways they can conserve water. In the future, the District will develop a letter addressed to the top ten users indicating their high usage rates; provide them with suggestions in how to reduce; and invite them to set an appointment with the District for assistance.

5.2 INDOOR WATER USE REDUCTION

The District currently has indoor water use reduction information pamphlets available at the District office. Samples are provided in Exhibit E. Water saving fixtures and other household water related products such as toilet leak detection dye tablets, and low-flow showerheads are available for customers at the main office and are also provided during public outreach events. The District actively researches new

water conservation devices to make available to its customers. Currently the District is in the process of procuring water activated shower timers which alerts customers to excessive time, and therefore excessive water, is being spent. The District will continue to provide low flow fixtures as well as actively research additional water saving devices for customers.

WaterSense is a United States Environmental Protection Agency (EPA) program designed to encourage water efficiency. WaterSense provides guidelines to partners and other stakeholders for use of the WaterSense program mark on water efficient products. Products and services that have the WaterSense label have been certified to be at least 20 percent more efficient without sacrificing performance. The program also allows consumers to find products and services with the WaterSense label. The District plans to promote this program to its customers on the District website.

As the District is within the jurisdiction of the Nassau County, the District follows the County's ordinances. Under Nassau County Water Conservation Ordinance No. 248-A-1987, use of system water for cooling water equipment including, but not limited to, air conditioning, refrigeration, engine cooling, and condensation is prohibited. All existing water cooling equipment shall be equipped with water recycling or converted to an air-operative system by June 30, 1988.

5.3 OUTDOOR WATER USE REDUCTION

Water use associated with outdoor activities, such as lawn irrigation, significantly increases during the warm weather months (May through September) when compared to the cold months (October through April). The average warm versus cold month pumpage from 2012 through 2016 is summarized in Table 5-1 and Figure 5-1 which indicates water usage in a typical warm weather month is approximately two times the cold weather month.

Under NYSDEC guidance, the District's goal is to reduce peak season water demand by 15% over the next three to four years based on 2012 pumpage as it was considered a normal precipitation year. Therefore, the NYSDEC expects the District to have an average reduction of approximately 5% per year. As the District begins implementing its water conservation initiatives, the first year may have a lower percent reduction; however, the percent reduction should escalate in the following years as additional water conservation measures are put into effect. The District will continue its current conservation efforts and is in the process of implementing new efforts; however, reductions as significant as expected by the NYSDEC may not be achieved.

The District's outdoor water use in 2012 was 223.16 MG. This usage rate was determined by taking the difference of pumpage from May through September (warmer months) and October through April (colder

months). Therefore, in order to achieve a reduction of approximately 5% in 2018, the District's reduction goal is 11 MG.

$$Bethpage\ 2012\ Outdoor\ Use = 827\ MG\ (Warmer\ Months) - 604\ MG\ (Colder\ Months)$$
$$= 223\ \boldsymbol{MG\ attributed\ to\ Outdoor\ Water\ Use}\ (\mathbf{2012})$$

$$Bethpage\ 2018\ Outdoor\ Use\ (Goal) = 223 * 5\% = \mathbf{11\ MG}\ (\mathbf{2018})$$
$$223\ MG - 11\ MG = \mathbf{212\ MG\ Outdoor\ Water\ Use}\ (\mathbf{2018})$$

Baseline usage rates were calculated using 2012 data as requested by the NYSDEC. As shown below, according to National Oceanic and Atmospheric Administration (NOAA) data for the Long Island/New York City area (NYS Division 4), the precipitation for the summer months of 2012 was 3.95 inches above normal (per the 20th century average of 18.34 inches), representing a "wet" year. Based on the past 10-year average, year 2013 had the closest summer precipitation and was 1.11 inches above the 20th century average. In addition, the average summer rainfall in the region over the past 10 years is 18.53 inches, comparably close to the NOAA 20th century average used in the data. Although 2013 data appears to be more representative of a normal precipitation year, 2012 usage is included as the baseline.

New York Climate Division 4 (Long Island & NYC) May - September		
Year	Precipitation (inches)	Departure from 20th Century Average (inches)
2007	16.41	-1.93
2008	21.2	2.86
2009	23.34	5.00
2010	13.29	-5.05
2011	27.3	8.96
2012	22.29	3.95
2013	19.45	1.11
2014	14.99	-3.35
2015	13.45	-4.89
2016	13.55	-4.79
Average:	**18.53"**	

Source: National Oceanic and Atmospheric Administration

The District requires swimming pools with a total capacity in excess of 3,000 gallons to be equipped with recirculation and filter systems to eliminate the need to empty and refill such pools more than once per year. Additionally, the District's water conservation program prohibits the use of water for filling or

maintaining water levels of manmade ponds, lakes or water bodies. Per Nassau County Ordinance No. 248-A-1987, commercial car washes must also be equipped with recirculation facilities to reuse rinse water.

5.3.1 IRRIGATION

Studies disseminated by Cornell Cooperative Extension of Nassau County have concluded that lawns on Long Island tend to be over-irrigated. It has been determined that the irrigation of lawns every other day at a rate of 1 inch per week is sufficient for most areas of Nassau County. Due to significant water use associated with lawn irrigation, the District has identified lawn-sprinkling measures as a logical and simple approach to promote the efficient use of the drinking water supply.

Customers must receive approval from the District and utilize a backflow device to install any underground irrigation system. The District requires smart controllers, such as rain sensors and moisture sensors, to be installed on automatic irrigation systems. Upon request of an application, the applicant will also receive the District's irrigation rules, water conservation information, as well as the latest Nassau County Ordinances regarding irrigation.

The District does not require periodic audits of customer irrigation systems or restrict irrigation to a certain percentage of property. Instead, the District's water conservation program promotes the Nassau County Ordinance No. 248-A-1987 regarding outdoor water use restrictions. This ordinance prohibits lawn irrigation between the hours of 10:00 a.m. and 4:00 p.m. Furthermore, irrigation is limited to odd and even days which correspond to a resident's street address number. District customers are vigilant of this ordinance and notify the District when observing a violation. Spring loaded nozzles are required and hosing water onto driveways, sidewalks, and streets is prohibited.

In addition to the District's regulations, Nassau County Ordinance No. 181-2016 was recently approved on November 23, 2016 to amend Ordinance No. 248-A-1987. This amended ordinance requires installation and maintenance of technology that prevents automatic irrigation systems from operating during periods of sufficient moisture (i.e. soil moisture device, rain sensor device, etc.). Automatic irrigation systems installed after the effective date of this ordinance must have this technology for installation, maintenance, and operation in accordance with manufacturer recommendations. After January, 1 2018, a contractor that activates, installs, repairs or conducts maintenance on automatic irrigation system cannot activate the system unless it has such controllers in place and are verified to be operational by the contractor.

5.3.2 WATER EFFICIENT LANDSCAPING

The Cooperative Extension of Cornell University has published "Lawn Maintenance Guidelines" for Long Island in which they discuss watering for three types of lawns:

(a) Minimum Turf (Fine Fescue Turf Grass)
Irrigation is not necessary for minimum maintenance lawns, except when starting newly seeded lawns.

(b) Regular Maintenance Lawns (Fescues, Kentucky Bluegrass and Perennial Rye Grass)
Water lawns only when necessary during the growing season. Usually, this type of lawn can go to the point where it will start to show a need for water. A smoky gray appearance in spots of lawn indicates a need for water. When watering, apply sufficiently to penetrate soil five or six inches deep. The need to irrigate should be no more frequently than once a week.

(c) Top-Quality Lawns (3 or 4 Improved Kentucky Bluegrass Varieties)
Apply about one inch of water every four to five days, except during periods of adequate rainfall. Avoid frequent, short-interval watering.

As the District is nearly 100% saturated for growth development, working with local planning boards to ensure water efficient smart landscaping in new developments will have little to no impact with the District's water conservation efforts Instead, the District will make available a list of xeriscaping plants. Additionally, the District has had discussions with irrigation and landscaping contractors in the past regarding water efficient methods such as timers and permeable pavers. The District has a good relationship with these contractors and collaborates with them often.

6.0 DROUGHT AND SOURCE DEPLETION EMERGENCY PROCEDURES

Drought and source depletion emergency procedures and planning measures are detailed in the Water Supply Emergency Response Plan (ERP) developed for the District. The ERP is reviewed on an annual basis and updated on a comprehensive basis at least every five years. Excerpts of the drought source depletion emergency response procedures are provided in Exhibit F of this plan.

The District ERP includes a Water Restriction Public Notice form which is attached in Exhibit F. The public notice form is intended to inform consumers on corrective actions to take during water emergencies such as drought, a major water main break, a system failure, or excessive consumption beyond the capacity of the system.

The District has also implemented Swiftreach Networks, Inc. as its Emergency Notification service provider. The system, Swift911 makes phone calls to people in specific areas during an emergency or just for promulgating important information quickly. This is an additional measure enabling the District to reach its customers to enforce water restrictions during droughts and other emergencies. District personnel also patrol the service area to enforce the restrictions when necessary.

7.0 PLANNED AND MEASURABLE OBJECTIVES

The following water conservation measures have been developed and will be assessed based upon their effectiveness in reducing water consumption. The District recognizes that by encouraging water conservation, it can reduce demands on its system and on the water source (aquifer) from which it draws its supply.

The benefits of water conservation can be significant in terms of savings on energy and water bills, and is important to conserve our finite water supply for present and future generations. The District recognizes the importance of water conservation and of working together as a community to ensure this invaluable resource. The District will secure funding through the Board and include it in the budget for the following planned and measurable objects:

- Lost Water
  - Continue to audit the District's top ten water users
  - Continue flagging unusual usage and visit affected customer
  - Continue well flow meter recalibration schedule
  - Complete water meter replacement program (2017)
  - Formalize service meter replacement program (2018)
  - Perform leak detection survey (2018)
  - Develop water main replacement program (2018)
  - Review rate structure (2018)
  - Implement water main replacement program (TBD)

- Public Outreach
  - Continue providing tours of District facilities
  - Continue to invite local elementary school for a facility tour and presentation on water conservation
  - Continue encouraging customers to use EyeOnWater
  - Continue including education in newsletters
  - Continue all annual outreach programs at local schools, senior citizen homes, and local fairs (annually)
  - Increase social media presence and update website (2018)

- Indoor Water Use Reduction
  - Continue to make available low flow fixtures/leak saving devices at District office

- Outdoor Water Use Reduction
  - Continue to issue warnings/door hangers for irrigation hour violation
  - Attach irrigation regulations to application permits (2018)
  - Provide list of xeriscaping plants at District office (2018)

8.0 REFERENCES

- Manual M6 – “Water Meters – Selection, Installation, Testing and Maintenance”, American Water Works Association, Denver, Colorado.

- “Water Conservation Manual for Development of a Water Conservation Plan”, NYSDEC, Albany, New York.

TABLES

TABLE 2-1

BETHPAGE WATER DISTRICT

WATER SUPPLY WELLS

WELL NO.	NYSDEC WELL ID NO.	LOCATION	AQUIFER	DEPTH OF WELL (ft.)	APPROVED CAPACITY	
					GPM	MGD
BGD-1	N-9591	Plainview Road	Magothy	682	1,380	1.99
4-1	N-6915	Sophia Street	Magothy	613	1,400	2.02
4-2	N-6916	Sophia Street	Magothy	613	1,400	2.02
5-1	N-8004	Broadway	Magothy	745	1,400	2.02
6-1	N-3876	Park Lane	Magothy	385	1,400	2.02
6-2	N-8941	Park Lane	Magothy	775	1,400	2.02
7	N-8767	Adams Avenue	Magothy	644	1,400	2.02
8	N-8768	Adams Avenue	Magothy	683	1,400	2.02
9	N-6078	Adams Avenue	Magothy	280	Out of Service	
SPD-1	N-14110	South Park Drive	Magothy	705	2,000	2.88
					13,180	18.979

Notes:

Depth of well is measured from the ground surface at the well

GPM - Gallons Per Minute

MGD - Million Gallons Per Day

TABLE 2-2

BETHPAGE WATER DISTRICT

INTERCONNECTIONS

SUPPLIER	LOCATION	SIZE
1. South Farmingdale Water District	Stewart Avenue	6" x 6"
2. South Farmingdale Water District	Plainedge Drive	6" x 6"
3. South Farmingdale Water District	Shelly lane	6" x 6"
4. South Farmingdale Water District	Frey Road	6" x 6"
5. South Farmingdale Water District	Bernhard Street	6" x 6"
6. Village of Farmingdale	Hampshire Drive	6" x 6"
7. Plainview Water District	South Park Drive	6" x 6"
8. Plainview Water District	Gerhard Road	6" x 6"
9. Plainview Water District	Washington Avenue	6" x 6"
10. Hicksville Water District	South Oyster Bay Road	6" x 6"
11. Hicksville Water District	Hicksville Road	6" x 6"
12. Levittown Water District	Celestial Lane	6" x 6"
13. Levittown Water District	North Wantaugh Avenue	6" x 6"
14. Levittown Water District	Berger Avenue	6" x 6"

TABLE 2-3

BETHPAGE WATER DISTRICT

WATER PUMPAGE DATA

MONTH	YEAR					FIVE YEAR AVERAGE (MG)
	2012 Pumpage (MG)	2013 Pumpage (MG)	2014 Pumpage (MG)	2015 Pumpage (MG)	2016 Pumpage (MG)	
January	79	83	92	80	78	**82**
February	73	76	85	76	75	**77**
March	83	86	91	85	82	**85**
April	112	96	94	84	88	**95**
May	133	140	135	171	133	**142**
June	162	157	186	170	196	**174**
July	198	201	194	204	208	**201**
August	184	187	196	207	225	**200**
September	150	171	166	187	183	**171**
October	106	145	115	120	133	**124**
November	76	85	77	75	82	**79**
December	74	79	71	73	79	**75**
TOTAL	1430	1508	1503	1533	1561	**1507**

NYSDEC FIVE YEAR RUNNING CAP = 1435 MG **CURRENT FIVE YEAR AVERAGE = 1507 MG**

NYSDEC ONE YEAR MAXIMUM = 1588 MG

TABLE 5-1

BETHPAGE WATER DISTRICT

SEASONAL PUMPAGE DATA

YEAR	TOTAL YEARLY PUMPAGE (MG)	TOTAL WARM MONTH PUMPAGE (MG)[1]	TOTAL COLD MONTH PUMPAGE (MG)[2]	PUMPAGE ATTRIBUTED TO IRRIGATION (MG)[3]	AVERAGE WARM MONTH PUMPAGE (MG)	AVERAGE COLD MONTH PUMPAGE (MG)
2012	1,430.24	826.70	603.54	223.16	165.34	86.22
2013	1,507.66	856.96	650.70	206.26	171.39	92.96
2014	1,431.72	711.05	720.67	-9.61	142.21	102.95
2015	1,532.62	939.58	593.04	346.54	187.92	84.72
2016	1,561.02	944.54	616.48	328.06	188.91	88.07

Notes:

MG - Million Gallons

[1] Warm weather months include May, June, July, August and September

[2] Cold weather months include January, February, March, April, October, November and December

[3] Estimated value based on difference between Warm Month Pumpage and Cold Month Pumpage. Value is considered conservative as water usage rates would be expected to increase in during warm weather months for reasons other than irrigation.

FIGURES

FIGURE 5-1
BETHPAGE WATER DISTRICT
AVERAGE MONTH PUMPAGE (2012-2016)

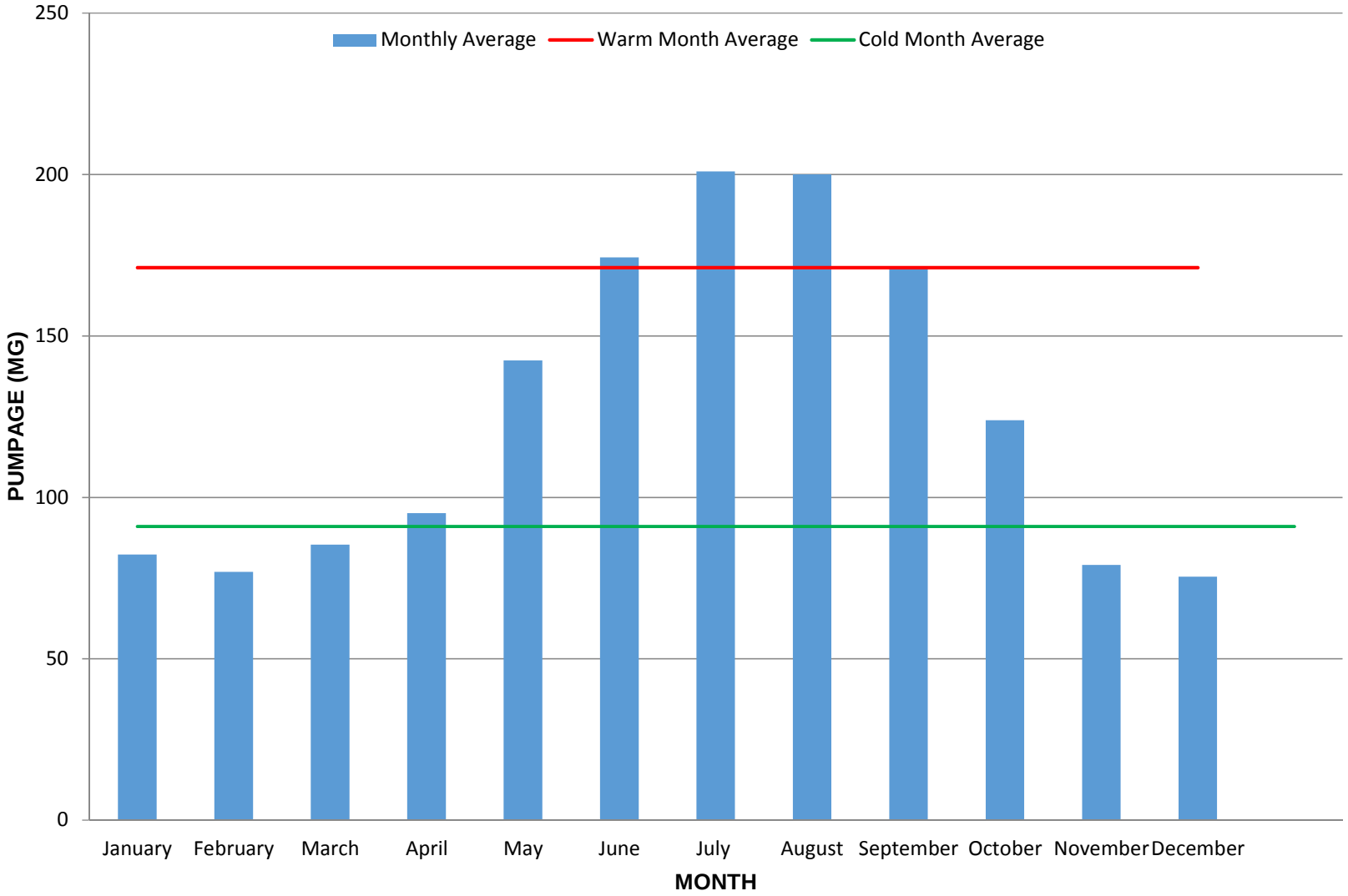


EXHIBIT A

BETHPAGE WATER DISTRICT

25 ADAMS AVENUE, BETHPAGE, NY 11714-1304
(516) 931-0093 FAX (516) 931-0068

Dear Customer,

Welcome to EyeOnWater!

Now you can view your water use in a few easy steps:

1. Visit https://beaconama.net/signup on your computer using a supported web browser.
2. Enter your billing account number: xx-xxxx-xx
3. Enter your service area zip code: 11714 (or appropriate number) and click the Next button
4. Enter your email address.
5. Create and confirm a password
6. **You'll get a confirmation email from Beacon. You must verify your email address by clicking on this link. Once you do, you can sign in using your email and password.**

For the list of supported web browsers please read:
http://blog.beaconama.net/browser-compatabilityaquacue-wave-web-browser-compatibility/

We look forward to getting your feedback.

Note: Initially, EyeOnWater will only be available for customers whose account contains only one meter. For commercial customers, we will need to create a Beacon account manually, for the time being.

EXHIBIT B

BETHPAGE WATER DISTRICT

25 ADAMS AVENUE • BETHPAGE, NY 11714-1304
Telephone: (516) 931-0093

Office Hours: Mon. thru Fri. 8:00 A.M. to 4:30 P.M.

Ongoing Water Restrictions

Water only on Even or Odd Calendar Dates according to house number but not between 10 A.M. to 4 P.M.

Date: _____ **Time** _____

☐ **Sorry we missed you**

Please call the office for the following:

☐ **For Annual Backflow Device testing.**

☐ **Need to service meter**

☐ **Found leak on** _____

☐ **Came as requested**

☐ **Water will be turned "OFF" for repairs on**

☐ _____ **from** _____ **to**_____

☐ **Immediate response**

☐ **Unable to obtain reading**

Employee: _____

Comments: _____

_____

_____

_____

_____

EXHIBIT C

Please Make Check Payable To: **BETHPAGE WATER DISTRICT**
25 ADAMS AVE
PLEASE PUT ACCOUNT NUMBER ON FACE OF CHECK
BETHPAGE NY, 11714-1340
TEL.: (516) 931-0093

PLEASE DO NOT STAPLE CHECK TO STUB
CANCELLED CHECK IS YOUR RECEIPT

RETURN THIS STUB WITH REMITTANCE

[redacted]

1.797

[redacted]

BILL DATE	DUE DATE
03/31/17	04/30/17
NET DUE	**AMOUNT ENCLOSED**
$67.55	

****METER ALERT: CONSUMPTION OF 40 GALLONS EVERY HOUR****

BETHPAGE WATER DISTRICT
25 ADAMS AVE
BETHPAGE NY, 11714-1340

Tel.: (516) 931-0093

On-Line ID	Account No.
BWD17370	02-1420-00

BILL DATE	DUE DATE	Read Dates	
		From	To
03/31/17	04/30/17	12/09/16	03/21/17

Service Address: 44 DENNIS LN

Meter Reading		USAGE	AMOUNT	CODE	EXPLANATION
Previous	Current				
788	841	53	67.55	1	Actual Reading

Consumption 1000 U.S. Gal	Current Amount	Penalty	Prior Balance	Amount Due
53	$67.55		$0.00	$67.55

NOTICE: 2016 UNPAID WATER SUMS AS OF AUGUST 31st, 2017 will be sent to the Nassau County Assessor's office in Mineola, NY and transferred to the Town Tax Roll with a 10% penalty assessed.

1 -ACTUAL READ 2 -ESTIMATED READ 3 -CUSTOMER READ 4 -MINIMUM CHARGE
5 -MISC. CHARGE 6 -FIRE SPRINKLER SYST. 7 -HYDRANT STANDBY 8 -MIN. NO USAGE
13 -FINAL BILL 20 -CREDIT ADJUSTMENT 22 -DEBIT ADJUSTMENT 34 -MANUAL READ

Minimum Charge = $7.50
Up to 10,000 = $.75 per thousand gals
From 11,000 to 35,000 = $1.25 per thousand gals
From 36,000 to 60,000 = $1.60 per thousand gals
From 61,000 to 100,000 = $1.95 per thousand gals
Over 100,000 gals = $2.60 per thousand gals

GO ONLINE TO BETHPAGEWATER.COM, CLICK ON THE "Billing" TAB & REGISTER/LOG-IN TO "Eye on Water". YOU WILL BE ABLE TO VIEW YOUR WATER USAGE & TO SET UP A "LEAK" ALERT which will advise you of a possible LEAK.
Some of you have signed up already but have not set the Leak Alert, please do.

EXHIBIT D

Water Connection

SPRING 2016

A PUBLICATION OF THE BETHPAGE WATER DISTRICT

BethpageWater.org

Access to Monitoring Wells Will Help Track Northrop Grumman Plume

The Bethpage Water District Board of Commissioners applauds United States Senator Charles Schumer and New York State Governor Andrew M. Cuomo for demanding Northrop Grumman and the U.S. Navy grant state and local water districts the authority to access monitoring wells to track the Northrop Grumman plume. This data will enable the Bethpage Water District and water districts that service the surrounding communities to understand how the plume is traveling and proactively implement precautionary initiatives to keep the water supply safe.

The Bethpage Water District Board of Commissioners and Superintendent Michael Boufis (right) thanks United States Senator Charles Schumer (center), New York State Governor Andrew M. Cuomo and New York State Assemblyman Joseph S. Saladino (left) for their support and commitment to the Bethpage community in their efforts for holding Northrop Grumman accountable.

"Senator Charles Schumer and Governor Cuomo's efforts are a step in the right direction for local water districts," said Chairman William J. Ellinger. "As your water providers, we are entitled to essential information that could help us better understand the plume's travel pattern. With this data, we can make the necessary preparations should the plume begin migrating toward a new location."

New York State Governor Andrew M. Cuomo recently proposed a Long Island Groundwater Study, to be carried out by the New York State DEC, to create a standard for understanding and managing Long Island's sole water source. This announcement was made shortly after the Governor demanded the Northrop Grumman Corporation and United States Navy allow the state and local water districts, including Bethpage Water District, to test and collect data from monitoring wells.

"While the Bethpage Water District will use the data to make necessary efforts to protect the water supply's future, the District continues to provide the necessary treatment and testing to keep the current water supply of the highest quality possible," said Secretary John F. Coumatos. The District's sampling protocol far exceeds the amount required by the Nassau County Department of Health.

"The District exceeds all regulations to ensure the safety of our neighbors. Though the plume appears to be moving, Bethpage water continues to be safe to drink and of the highest quality possible," said Treasurer John R. Sullivan.

BETHPAGE WATER DISTRICT BOARD OF COMMISSIONERS

William J. Ellinger
Chairman

John R. Sullivan
Treasurer

John F. Coumatos
Secretary

HOW TO READ YOUR WATER STATEMENT

The Bethpage Water District conducts more than 10,000 water quality tests for more than 130 parameters and contaminants, of which, 115 have been undetected in the drinking water supply. When reading your water statement, it is important to keep some terms in mind to best understand its components.

✿ **Contaminants:** Any impurity found in water. Most are naturally occurring and not harmful. Others are man-made and can be harmful at high exposure levels. Please visit the USEPA website at http://water.epa.gov/drink/contaminants/ for information about contaminants found in drinking water.

✿ **Inorganic Compounds:** Inorganic compounds are nonbiological organisms. Essential metallic elements commonly found naturally occurring in groundwater due to the weathering of rocks, minerals and pipes. Compounds such as iron, zinc, sodium, calcium and nickel are inorganic compounds.

✿ **Maximum Contaminant Level (MCL):** The highest level of a substance allowed in drinking water.

✿ **Maximum Contaminant Level Goal (MCLG):** The level of a substance in drinking water below which there is no known risk to health.

✿ **Parts-Per-Billion (ppb):** One ppb represents one-billionth of a gram, per gram of the sample. It is also represented as one microgram per liter (ug/L). So, one gallon in a billion would be one gallon in a resevoir that is one square mile and five feet deep.

✿ **Volatile Organic Compounds:** VOC's come found in products including plastic, refrigerants, gasoline, solvents, paints and dry cleaning fluids. When improperly disposed, VOC's may be released into the environment, and any amount that does not evaporate into the atmosphere may seep into the soil when it rains. VOC's do not naturally occur in groundwater and are the consequence of industrial waste disposal. In the instance of the Bethpage Water District, pollutants comprising the Northrop Grumman plume, such as Trichloroethene (TCE), have been detected in the groundwater but are removed in drinking water.

WATER TREATMENT PROCESS

Our goal is to provide drinking water of the highest quality, free of any VOC's. Our treatment processes illustrated below, combined with our aforementioned rigorous testing, ensure that the thousands of gallons of water pumped per minute in the Bethpage Water District is both clean and pure.

Air Stripping: This proven state-of-the-art equipment is in place at District plant sites to remove any traces of volatile organic compounds (VOC's) that may be present in the water pumped from the ground long before it enters the public supply system. Air stripping exposes a large surface area of water to air. Water is pumped to the top of a tower and then cascades downward over a large number of inert packing materials or small round objects that resemble wiffle balls. Simultaneously, filtered air is blown upward through the tower, breaking the water molecules and removing, or "stripping," any VOC's.

Carbon Filter: After air stripping, the water goes through a granular activated carbon (GAC) filter to remove remaining organic compounds. The activated carbon's porous composition provides tremendous surface area that acts as an adsorption system. The water is purified as it passes through the carbon filters and the used carbon is replaced periodically according to industry standards. GAC filters are similar to air strippers as they both remove VOC's.

Nitrate Removal: The ion exchange process for the removal of nitrates is both simple and effective. It operates in the same manner as a common water softener and can easily remove much more than 90 percent of nitrates. The process uses a strong-base ion exchange resin, which regenerates with common salt.

WATER QUALITY Q&A WITH BETHPAGE WATER DISTRICT SUPERINTENDENT MIKE BOUFIS

Q: IS BETHPAGE'S WATER SUPPLY SAFE TO DRINK?

A: Yes, Bethpage drinking water is safe to drink. The Bethpage Water District tests the water supply regularly for regulated and un-regulated contaminants as required for the Nassau County Department of Health (DOH), and all results of testing have consistently met all local, state and federal standards. The water that is delivered to the tap is continually monitored to ensure its quality and safety. The Bethpage Water District is pleased to report that the water supplied to the community meets all the standards required by the U.S. Environmental Protection Agency and the New York State and Nassau County DOH. In addition to testing, the District is equipped with multiple treatment centers, which utilize state-of-the-art technology to filter the contaminants from the raw, untreated groundwater so the water that comes out of faucets is safe to drink and of the highest quality possible.

Q: SHOULD I BE DRINKING BOTTLED WATER?

A: Bethpage water meets local, state and federal drinking water standards, meaning that it is safe to consume and use; the purchasing of bottled water is unnecessary. Bottled water costs up to 1,000 times more than municipal drinking water. Additionally, the US Food and Drug Administration (FDA) requires bottled water quality standards to be equal to those of the US Environmental Protection Agency for tap water, but the quality of the finished product is not monitored by the government. Tap water is regulated much more heavily and tested more frequently than any brand of bottled water. Of course, in emergencies bottled water can be a vital source for people without tap water.

Q: WHAT IS THE BETHPAGE WATER DISTRICT DOING TO COMBAT THE NORTHROP GRUMMAN PLUME?

A: The Bethpage Water District continues to pursue the Northrop Grumman Corporation in a class action lawsuit. The District also works closely with the United States Navy, who is overseeing parts of plume remediation, and the New York State Department of Environmental Conservation, who is overseeing Northrop Grumman and their responsibility for remediation. The District continues to perform routine tests and regular treatment on our wells, in addition to seeking and pursuing alternate water distribution options located outside the Northrop Grumman plume. This includes the brand new plant located at Bethpage State Park and the newly constructed Ground Storage Tank located on Plainview Road. The Commissioners are currently pursuing an additional plant in a location unaffected by the Northrop Grumman plume.

MORE THAN 200 BETHPAGE STUDENTS PARTICIPATE IN ANNUAL BETHPAGE WATER DISTRICT POSTER CONTEST

More than 200 Bethpage School District students participated in the District's annual poster contest entitled, *No Bethpage Without Bethpage Water.* The students have been working on posters of their own design since the beginning of the school year and have officially submitted their entries to the District. The contest is designed to encourage education in regard to the community's water supply.

Commissioners Ellinger, Sullivan and Coumatos will judge each poster and select the top-three submissions per elementary school portraying the most innovative ways to conserve with the best designed poster. The winners will be honored by the District in June with an awards ceremony. Following the ceremony, posters will be displayed in the Bethpage Public Library for community viewing.

Commissioners John F. Coumatos, William J. Ellinger and John R. Sullivan are pictured with a few poster contest entries.

Bethpage Water District
25 Adams Avenue
Bethpage, NY 11714

PRESRT STD
U.S. POSTAGE
PAID
BETHPAGE, NY
11714
PERMIT NO. 50

Hours: 8:00 a.m. to 4:00 p.m. weekdays
24-Hour Emergency Number: (516) 931-0093

BethpageWater.com

For the latest, follow us at:
Facebook.com/BethpageWaterDistrict
Twitter.com/BethpageW

Students, School Officials, Residents and Elected Officials Tour New Well Located Outside Boundaries of the Plume

The Bethpage Water District was joined by members of the community, students, school officials including Superintendent Terrence Clark and local elected officials to officially introduce the newest and ninth well to the District's system. The pump station will serve approximately 33,000 residents and local businesses three million gallons of water daily from a location outside the boundaries of the Northrop Grumman plume.

"We are very grateful to live in a community where our neighbors continue to show their support and commitment to learning about our water supply," said William J. Ellinger, Chairman of the Board of Commissioners. "We are dedicated to keeping our community informed and answering any questions they may have. With the community's help, we can safeguard our water for the future."

Superintendent Michael Boufis guided students around the pump station, explaining how it functions and provides the highest quality of water possible to the community each day.

Local elected officials including New York State Senator Kemp Hannon, New York State Assemblyman Michael Montesano, Nassau County Legislators Rose Marie Walker and Laura Schaefer, and Town of Oyster Bay Councilman Joseph Pinto helped Bethpage Water District Commissioners, Superintendent Michael Boufis and Secretary to the Board Sal Greco cut a ribbon to signify the completion of the new well located on South Park Drive.

Water Connection

FALL 2015

A PUBLICATION OF THE BETHPAGE WATER DISTRICT

BethpageWater.org

District's New Storage Tank to Provide Two Million Gallons of Added Capacity

In a proactive effort, the Bethpage Water District Board of Commissioners William J. Ellinger, John R. Sullivan and Gary S. Bretton are proud to announce that construction is complete on a new two million gallon ground storage tank on Plainview Road. The tank is one piece of the District's long-term strategy to pursue new locations and sources outside the boundaries of the plume, and it provides for a redundant source for firefighting reserve should existing facilities become unavailable.

"We want to make certain we are always prepared with an ample water supply to ensure the safety of our residents in the event of a fire emergency," said Commissioner Gary S. Bretton. "The tank will further allow us to serve the community high quality water for the lowest possible cost."

The new storage tank is expected to improve water pressure from its location on Plainview Road, next to Charles Campagne Elementary School. Part of the District's efforts to provide water unaffected by the Northrop Grumman plume, the water stored in this tank will not require costly treatment systems.

Construction is now complete on the tank, and the District will enter the next phase of completion. Residents can find updates on when the tank will be fully functional on the District's Facebook site facebook.com/BethpageWaterDistrict, or Twitter at @BethpageW.

INSIDE THIS ISSUE

BETHPAGE WATER DISTRICT BOARD OF COMMISSIONERS

William J. Ellinger
Chairman

John R. Sullivan
Treasurer

Gary S. Bretton
Secretary

Bethpage Water District Features New Meter System at the Bethpage Fair

The Bethpage Water District Board of Commissioners William J. Ellinger, John R. Sullivan and Gary S. Bretton greeted the Bethpage community at the annual Bethpage Fair this August. Residents spoke with the commissioners, District staff and Superintendent Mike Boufis about the new meters being installed in Bethpage homes and businesses, as well as the high-tech water-use monitoring program "EyeOnWater."

"We make it a priority to take advantage of every opportunity to educate our neighbors about the exciting new ways we are improving the community's water service," said Gary S. Bretton, Secretary of the Bethpage Water District Board of Commissioners. "It was a pleasure to speak with our neighbors and inform them how the new water meters and 'EyeOnWater' digital system can help them keep track of their usage so they practice water conservation and in turn, possibly save money on their water bill."

Water industry experts from the Bethpage Water District talked residents through viewing and detecting problems such as uncharacteristically high levels of water usage, as well as how to receive email notifications in the event of leaks via the new digital monitoring account. All water usage is recorded on the "EyeOnWater" system so residents can easily understand when and how they use the greatest amounts of water per day.

ELECTION NOTICE

The Bethpage Water District is holding its annual election at the District offices, located at 25 Adams Ave., Bethpage, on Tuesday, December 8, 2015, between the hours of 6:00 p.m. and 9:00 p.m. for the purpose of electing a water commissioner for a term of three (3) years.

All candidates for District office shall be residents of the Water District and shall file their names and nominating petitions with the secretary of the board of commissioners. All such nominations shall be submitted in petition form subscribed to by not less than twenty-five registered voters of the District in accordance with the Town Law and Election Law of the State of New York. Petitions must be filed at the office of the Bethpage Water District between the hours of 8:30 a.m. and 4:30 p.m. on any business day in accordance with this notice of election.

Bethpage Water District Reminds Traveling Residents to Safeguard Homes For Winter Season

As the winter season approaches, many Bethpage residents choose to leave their Long Island homes and travel to warmer weather. The Bethpage Water District reminds these residents to take the necessary preventive actions to ensure pipes don't burst, leak or freeze during their absence. Ruptured pipes cause more than a quarter million homes to flood every year.

"Frigid temperatures can cause water pipes to freeze and in some cases, burst," said Bethpage Water District Chairman William J. Ellinger. "We will be alerted of any leaks due to the new digital water meter system, but residents should still take a few simple precautions to help protect their homes in their absence."

With the installation of new digital water meters and the online alert system "EyeOnWater," residents and District personnel will be able to detect any problems should a water-related emergency occur. Before leaving, residents should also provide an emergency contact should the District need to gain access to your residence to solve any problems.

The Board of Commissioners reminds homeowners to keep the following in mind before leaving homes unattended for the winter season:

- Please consult with a heating professional if you decide to drain the internal plumbing in your home.
- If you choose not to drain your internal plumbing, the thermostat should be set to a temperature no lower than 60 degrees.
- Insulate all hot water pipes in unheated areas to prevent freezing or bursting.
- Disconnect and drain all outside hose bibs.
- Make sure your lawn sprinkler system is properly drained for the winter.

Clear Hydrants of Snow and Debris

Residents are reminded to clear all snow and winter debris blocking fire hydrants on or near their properties to ensure that first responders can easily access fire hydrants in the event of an emergency.

"In midst of winter shoveling, we remind residents to take the time to also clear ice and snow surrounding fire hydrants," said John R. Sullivan, Treasurer of the Bethpage Water District Board of Commissioners. "This is an extremely important service which may allow the Bethpage Fire Department to efficiently access hydrants during a fire emergency."

To ensure general public safety, the District asks residents to think of neighbors, family members and friends who plan to leave their homes for an extended period of time, or who are unable to clear their fire hydrants without assistance. Every season, the help the community provides in ensuring hydrants are readily accessible to the fire department is crucial in saving lives.

Bethpage Water District
25 Adams Avenue
Bethpage, NY 11714

Hours: 8:00 a.m. to 4:00 p.m. weekdays
24-Hour Emergency Number: (516) 931-0093

BethpageWater.com

For the latest, follow us at:
Facebook.com/BethpageWaterDistrict
Twitter.com/BethpageW

Bethpage Water District Announces Poster Contest Winners

Eighteen Students out of over 350 Participants Honored for Water Conservation Message

Bethpage Water District Chairman William J. Ellinger, Secretary Gary S. Bretton and Treasurer John R. Sullivan, as well as Legislator Rose Walker, recently congratulated the top-three students from each grade who submitted posters that best answered the question, "How Can I Conserve and Protect My Water?" during the District's inaugural poster contest: *Bethpage Protects, Bethpage Conserves.* Eighteen students out of the total 367 participants from the Bethpage School District were honored during an award ceremony at the Bethpage Fire House, where their winning posters were on public display for friends, family and school faculty.

"It was incredibly difficult to pick 18 out of the over 350 students in the Bethpage School District who submitted entries to this year's poster contest," said Board of Commissioners Secretary Gary S. Bretton. "Win or lose, we are thrilled students, teachers, and members of the community have taken an initiative to learn and discuss one of our most vital resources."

Student posters illustrated ways people can help conserve water by making slight changes to their daily routines. For example, many students expressed the importance of taking shorter showers, turning the water off while brushing teeth and using a broom rather than a hose to clean out driveways. Students also suggested household leaks be fixed as soon as possible to avoid water waste.

EXHIBIT E

LAWNS...

you can have it all!

10 COMMONLY ASKED QUESTIONS ABOUT WATERING & FERTILIZING

Cornell Cooperative Extension

Nassau County

stop that leak

Leaks — unseen or ignored — can drip hundreds or thousands of gallons of water literally down the drain. Not only is that precious fresh water wasted, but it registers through your meter, and you must pay for it.

Even a pinhole leak which may show up as a slowly dripping faucet in need of a new washer can waste up to 170 gallons of water a day. A fast drip (1/16th of an inch) can waste more than 900 gallons of water a day, amounting to 87,000 gallons in three months.

To help you identify and take care of leaks which may develop in your home plumbing system, B.W.D. suggests that you read this pamphlet carefully, follow its advice, and keep it handy for reference.

SOME SIMPLE TESTS

Household leaks are found both indoors and outdoors in bathroom and kitchen fixtures, around laundry rooms, in garden hoses and

EXHIBIT F

BETHPAGE
WATER DISTRICT

EMERGENCY
RESPONSE PLAN

CONFIDENTIAL

DO NOT COPY

DO NOT RELEASE FOR PUBLIC REVIEW

DECEMBER 2012

PREPARED BY: HOLZMACHER, MCLENDON & MURRELL, P.C.
DISTRICT CONSULTING ENGINEER

SIGNATURE: _____

DISTRICT SUPERINTENDENT: MICHAEL J. BOUFIS

SIGNATURE: _____

APPROVED BY: _____

AGENCY: _____

DATE: _____

5.2 - SOURCE DEPLETION/DROUGHT/LOSS OF MULTIPLE WELLS

EMERGENCY SITUATION

An emergency situation exists when the loss of multiple well pump facilities due to mechanical failure, flooding, vandalism, sabotage, fire, etc., causes or has the potential to cause the loss of water to a portion of the system or pressure to drop below 20 psi. The following safe and emergency water pumping levels for each well will be evaluated to determine if emergency situations exists:

Well No.	Safe Water Level (feet)	Emergency Water Level (feet)
4-1	53	73
4-2	60	80
5-1	60	80
6-1	41	61
6-2	51	71
7	77	97
8	75	95
9	70	90
BGD-1	60	80

RESPONSE

1. Refer to Notification Roster, Table 3-1. Notify all pertinent water system personnel. Notify the Nassau County Department of Health.

2. Assess the nature and magnitude of the source depletion and the impact on pressures and flows. Monitor storage facility levels, pressures and pumping rates.

3. Notify the Bethpage Fire Department at (516) 931-2660, Nassau County Police Department at 911, etc., and alert each agency to the potential of reduced water flows and pressure due to the loss of multiple pumping facilities.

Advise the Fire Department of the following:

A. Nature and magnitude of problem.

B. System pressure and potential impact on fire protection.

4. Determine if "water use restrictions" are necessary based on water availability, storage facility levels, system pressures and pumping rates. Refer to the Ordinance of the Bethpage Water District, Appendix “D”, which details the rules and regulations restricting water use.

5. Prepare and release a public notification statement regarding possible water shortages and, if required, details concerning water use restrictions. Refer to the public notification section of the manual. See Section 6.

6. Based on system pressure, pumping rates and storage levels, determine if emergency interconnections with neighboring water suppliers can be utilized. Refer to the emergency interconnection section of the manual, Table 2-4, for the locale of each interconnection and refer to the Notification Roster for adjacent water supplier contact person, Section 3.2. Notify Nassau County Department of Health and New York State Department of Environmental Conservation if any interconnection is activated.

A. If interconnections are either unavailable or insufficient to meet demand, implement water restrictions to all but essential users.

B. Advise consumers of alternate sources of water available to them, see Section 2.8, and i.e., how to sanitize and store water or use bottled water certified by NYSDOH. See Section 6.19.

7. Investigate cause of source depletion through isolation of low system pressure, pumping rates and storage levels within the distribution system. Determine if vandalism/sabotage was possible cause of the source depletion. Notify local law enforcement authorities and report possible vandalism/sabotage. See Sections 5.12 and 5.13.

8. If cause is source depletion, notify the Nassau County Red Cross and Nassau County Office of Emergency Management and request assistance with providing bottled water to consumers.

9. If facilities have been significantly damaged, contact Nassau County Emergency Management Office for assistance with infrastructure repairs.

10. If supply cannot continue to meet demand, request from the Nassau County Department of Health approval to provide an alternate supply. Request that Nassau County Department of Health endorse, with assistance from NCOEM, and with approval from NYSDOH, a request to the New York State Emergency Management Office for the use of their water tankers and folding tanks for transportation of the alternate supply to consumers. See Appendix "F".

11. Prioritize the distribution of alternate water supplies to critical customers (hospitals, dialysis centers, evacuation centers) and to emergency distribution centers.

12. If prolonged water outage is anticipated, see Section 5.16. If long distance, above ground pipelines are necessary to provide water from a distant location in another operating system, see Section 2.8. This procedure may also apply when by-passing a contaminated section of our distribution system.

6.2 – EMERGENCY CURTAILMENT OF USE – WATER RESTRICTION NOTICE FORM

BETHPAGE WATER DISTRICT
PUBLIC NOTICE FORM
EMERGENCY RESTRICTION OF USE DUE TO
EXCESSIVE LAWN WATERING DURING DROUGHT
WATER RESTRICTION NOTICE

The Board of Commissioners on behalf of the Bethpage Water District has declared a water restriction emergency (Stage). See Attached Emergency Restriction of Use Resolution.

Due to the (**provide description of event**) on _____, 20__, at _____ am/pm, a potential public health and safety hazard may exist, wherein the District is unable to provide water in sufficient quantity at adequate pressures to its customers and still maintain a minimum reserve in the event of a major fire.

You may experience a drop in water pressure, a discoloration of the water (rust colored) or in extreme cases no water at all.

Public water systems must maintain system pressure above 20 pounds per square inch (psi). In the event that the delivery of water is interrupted to a minimum of 25 individuals or 5 service connections, or to a minimum of one percent (approx. 330) of the total number of individuals served or service connections (approx. 86), whichever is larger, for a period of 4 hours or more, the New York State Sanitary Code deems an emergency condition to exist.

The Nassau County Department of Health has been notified of this condition.

The District is taking the following measures to restrict water use:

The District has enacted an Emergency Restriction of Use Resolution. This resolution declares a Stage ____ emergency and directs that water use by its customers be limited.

The public is urged to limit the use of water until this condition is rectified. The water is expected to be restored to normal on _____ at approximately _____ am/pm.

For additional information, please contact Superintendent Michael Boufis of the Bethpage Water District at (516) 931-0093 or the Office of Water Supply Operations of the Nassau County Health Department at (516) 227-9692.

Please share this information with all of the other people who drink this water, especially those who may not have received this notice directly (i.e., people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or by distributing copies.

Date Issued: _____ Time Issued: _____ AM / PM

APPENDIX F GRANT OF EASEMENT

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE

David A. Paterson
Governor

Carol Ash
Commissioner

New York State Office of Parks,
Recreation and Historic Preservation
Long Island Region - Belmont Lake State Park, P.O. Box 247, Babylon, NY 11702-0247
www.nysparks.com

May 15, 2008

Andrew A. Musgrave, Superintendent
Bethpage Water District
25 Adams Ave.
Bethpage NY 11714-1304

Dear Mr. Musgrave:

Re: Bethpage Water District
Bethpage State Park

Enclosed please find a copy of the Letter of Intent signed and fully executed by Parks. Parks intends to move forward with the appraisal process and will keep you informed as to our progress.

For your information, New York State Department of Transportation is the process of extending the bikeway north through the park including through the area in close proximity to the well site request. Parks and DOT may contact you from time to time regarding the plans for this project.

Your cooperation in the well site placement together with the bikeway plan will be appreciated.

Sincerely,

Michelle Somma
Land Management and Regulatory Affairs Coordinator

Cc: R. Foley
J. Kowalchyk
S. Fish/W. Mausling
D. Catalano
E. Kullesied
P. Laudato
J. Sponable
R. Reinhardt
M. Byrne, NYSDOT
File S:\Real Property\Bethpage State Park\Bethpage Water District\Ltr to WD re Letter of Intent - Bikeway 5-08.doc

Letter of Intent
Grant of Easement

Grantee:

BETHPAGE WATER DISTRICT

25 Adams Avenue

Bethpage, NY 11714

Region: _____

State Park, State Historic Site or Other Facility: _____

BETHPAGE STATE PARK

Easement Description (may be general):

Approximately 4 acres for use as a public water supply well.

See site plan attached.

The Grantee has requested that the New York State Office of Parks, Recreation and Historic Preservation (hereinafter "State Parks") convey the above described easement to the Grantee for purposes of the installation and/or maintenance of the following underground facilities (check appropriate):

- o **electrical**
- o **communication**
- xx **potable water**
- o **sanitary sewer**
- o **storm sewer**
- xx **other:** Installation of a public water supply well.

State Parks shall determine the value of the real property interest sought by the Grantee by obtaining an appraisal of the fair market value thereof (two appraisals are necessary for easements of a value greater than $300,000). Grantee shall reimburse State Parks for the cost of said appraisal(s).

In the event that State Parks incurs any additional costs as a result of the conveyance of said easement (e.g., survey, engineering review costs, etc.), Grantee shall reimburse State Parks for said costs.

In addition to the fair market value of the real property interest, Grantee sh
Parks a sum to be agreed upon by the parties that reflects the value of appr
mitigation for the impacts upon State Parks property and buildings caused
installation and/or maintenance of the underground facilities. In lieu of sa
parties may agree to in-kind services to be performed or provided by the C

This letter reflects the intent of the parties only and does not constitute an
is binding on either party. Upon receipt of the necessary information, inclu
appraised fair market value of the proposed easement, the parties shall ent
agreement that shall be subject to the approval of the Attorney General as
the approval of the Office of the State Comptroller in accordance with the
Finance Law.

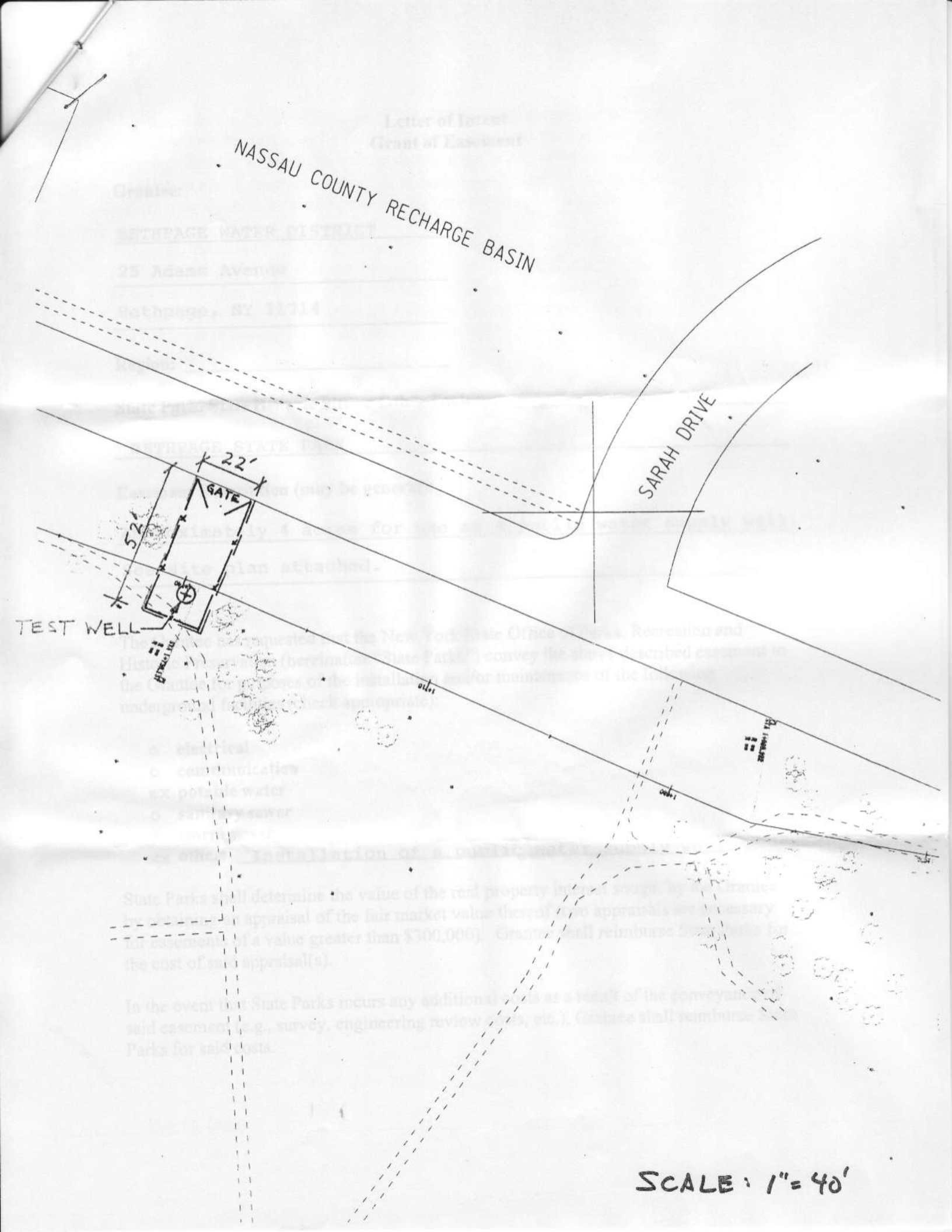
Date:
Grantee:

Chairman of Board of Water Commissioners

Name: William J. Ellinger
Title:

Date: 5/2/08
State Parks:

Name:
Title:


NASSAU COUNTY RECHARGE BASIN
SARAH DRIVE
22'
GATE
52'
TEST WELL
SCALE: 1" = 40'

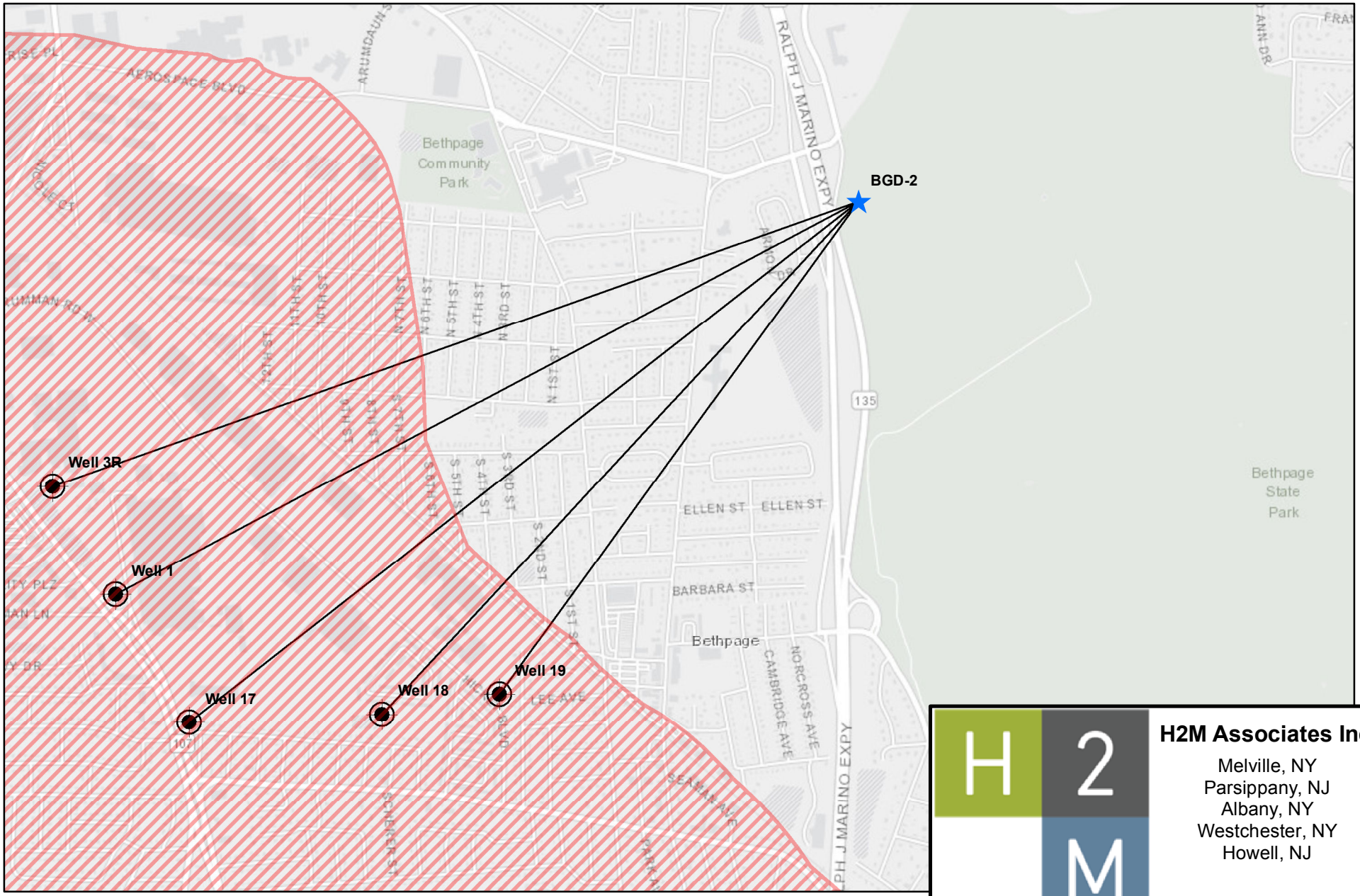
APPENDIX G NORTHROP GRUMMAN OU-2 REMEDIAL WELL ANALYSIS

Bethpage Water District

Nassau County, New York

Appendix G

System Map Scale:
1 inch = 15,000 feet



H2M Associates Inc.

Melville, NY
Parsippany, NJ
Albany, NY
Westchester, NY
Howell, NJ

Appendix G

Bethpage Water District
Northrop Grumman Remedial Well Analysis

Well ID:		1	3R	17	18	19	BGD-2
Measuring Point Elevation (ft msl)		116.78	115.28	104.10	110.00	108.70	119.20
Water Level Elevation (ft msl)		27.78	29.68	37.40	44.20	44.40	-
Screen Interval [2]	Top (ft msl)	Unavailable	Unavailable	-375	-353	-355	-460.8
	Bottom (ft msl)	Unavailable	Unavailable	-458	-457	-507	-560.8
Horizontal Distance to BGD-2 (ft) [3]		7724	7855	7794	6436	5608	-

Quarterly TCE Concentration (ug/l)		608	362	116	45	118	-
Quarterly TVOC Concentration (ug/l)		650	410	150	68	140	-

1. Data extracted from 2017 Annual Operation Maintenance and Monitoring Report, Operable Unit 2 - Groundwater
2. Reported screen intervals are approximated from figures 12 and 13
3. Reported horizontal distances are approximated from well locations indicated in figure 1

EXHIBITS

Exhibit A Map of Bethpage Water District with Plant Locations

Bethpage Water District

Nassau County, New York

Exhibit A

System Map Scale: 1 inch = 20,000 feet

Plant View Scale: 1 inch = 5,000 feet

Plant 1

Plant SPD

Plant BGD

Grumman Rd Plant

Plant 6

Plant 5

Plant 4

Plant SPD

Plant BGD

Plant 1

Plant 4

Grumman Rd Plant

Plant 6

Plant 5

Legend

District Boundary Line

Plant Sites

H2M Associates Inc.

Melville, NY
Parsippany, NJ
Albany, NY
Westchester, NY
Howell, NJ

Document Path: X:\BPWD (Bethpage Water District) - 10150\BPWD1806 - New Well at BGD\01-Prelims\Engineering Report\Tables, Appendices & Exhibits\Exhibit A - Plant Sites\Plant Sites.mxd

EXHIBIT B WATER DISTRIBUTION SYSTEM

LEGEND

MAIN SIZE
2" & 4"
6"
8"
10"
12"
14"
16"
20"

VALVE
HYDRANT 153 HYDRANT WITH VALVE

WATER DISTRICT BOUNDARY LINE
TOWN LINE

SCALE: 1 INCH = 600 FEET

600 0 600 1200

DECEMBER 1992

BETHPAGE WATER DISTRICT

TOWNS OF OYSTER BAY AND HEMPSTEAD, NASSAU COUNTY, NEW YORK

PLAN OF

DISTRIBUTION SYSTEM

FEBRUARY 5, 2009
DECEMBER 26, 2007
OCTOBER 16, 2007
APRIL 12, 2001
FEBRUARY 2, 1999
SEPTEMBER 17, 1998
DECEMBER 2, 1996
APRIL 15, 1996

MARCH 3, 2014
AUGUST 1, 2015

H2M architects + engineers

M:\cadd\CADMAPS\bpwd\Bpcadmap.dwg December 28 2001 1:29pm By:jam

EXHIBIT C DISTRICT AREA WITH KNOWN ELEVATED LEVELS OF REGULATED CONTAMINANTS

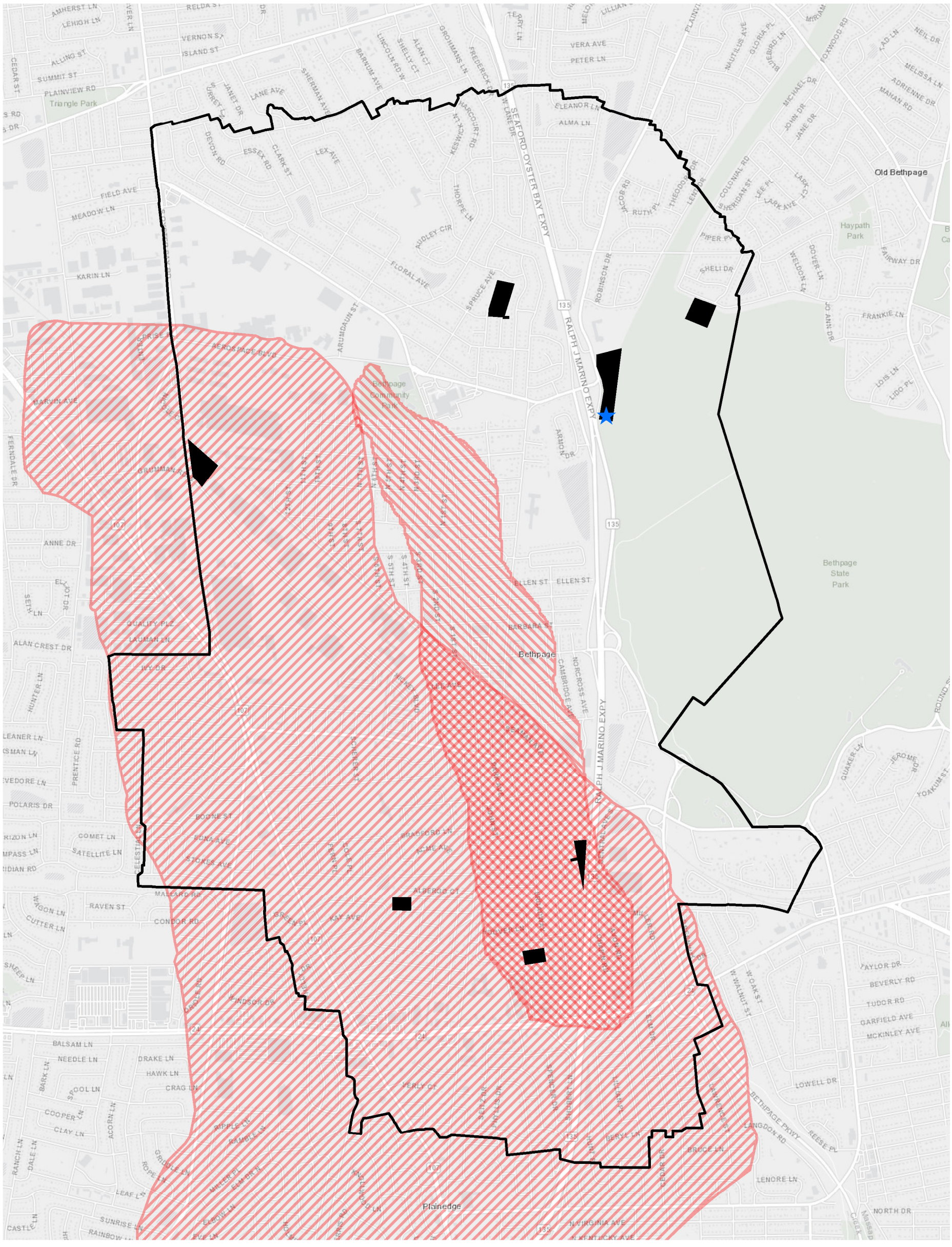
Bethpage Water District

Nassau County, New York

Exhibit C

N
W E
S

System Map Scale:
1 inch = 20,000 feet



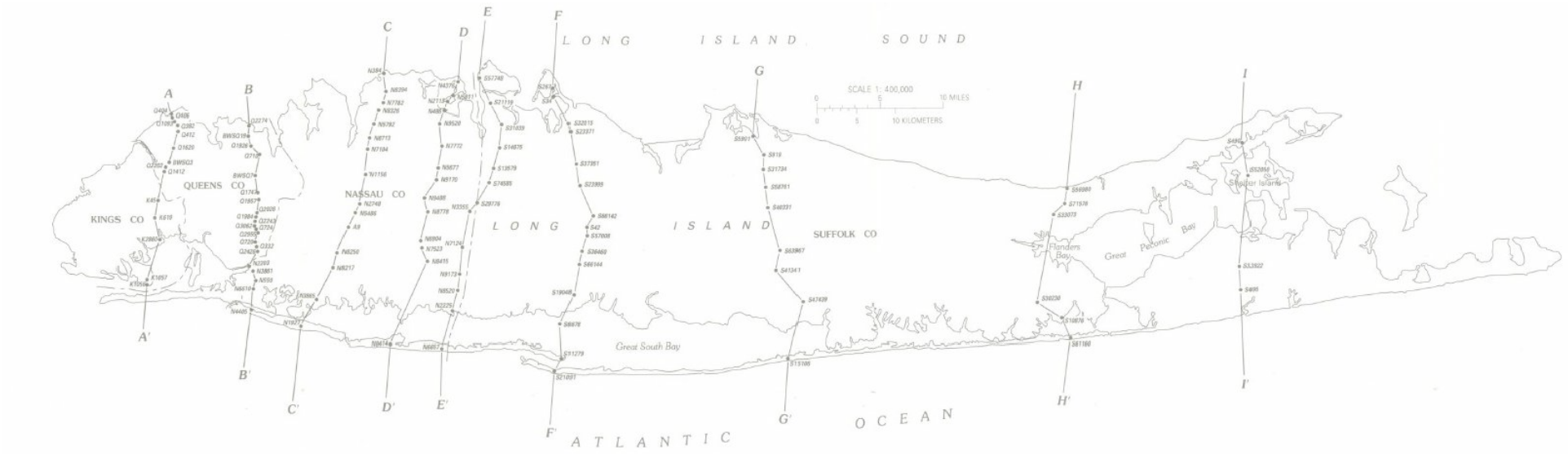
Legend

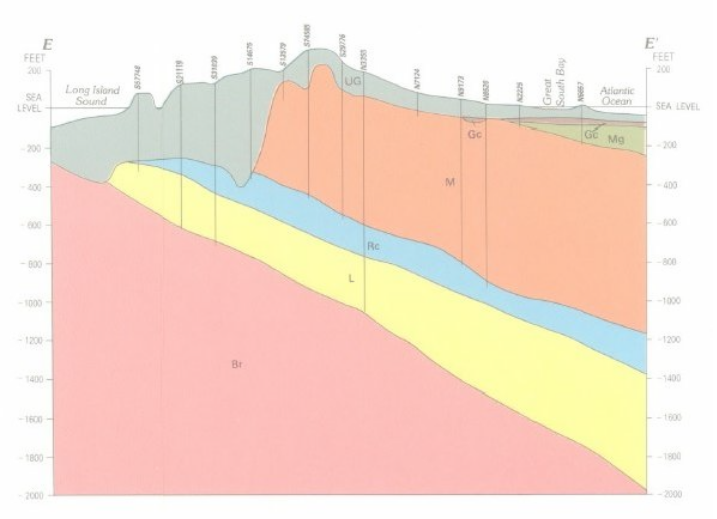
- District Boundary Line
- Plant Sites
- BGD-2
- OU-3 Plume
- OU-2 Plume

H2M Associates Inc.
Melville, NY
Parsippany, NJ
Albany, NY
Westchester, NY
Howell, NJ

Document Path: X:\BPWD (Bethpage Water District) - 10150\BPWD1806 - New Well at BGD\01-Prelims\Engineering Report\Tables, Appendices & Exhibits\Exhibit C - Contamination Area\Contamination Area.mxd

EXHIBIT D HYDROGEOLOGICAL CROSS SECTION





EXPLANATION

HYDROGEOLOGIC UNIT

- UG — Upper glacial aquifer
- Gc — Gardiners Clay
- J — Jameco aquifer
- Mg — Monmouth greensand
- M — Magothy aquifer
- Rc — Raritan confining unit
- L — Lloyd aquifer
- Br — Bedrock

WELL AND NUMBER—Vertical line indicates depth of borehole or well. Prefix letter (K, Q, N or S) indicates Kings, Queens, Nassau or Suffolk County.

Hydrogeologic Contact

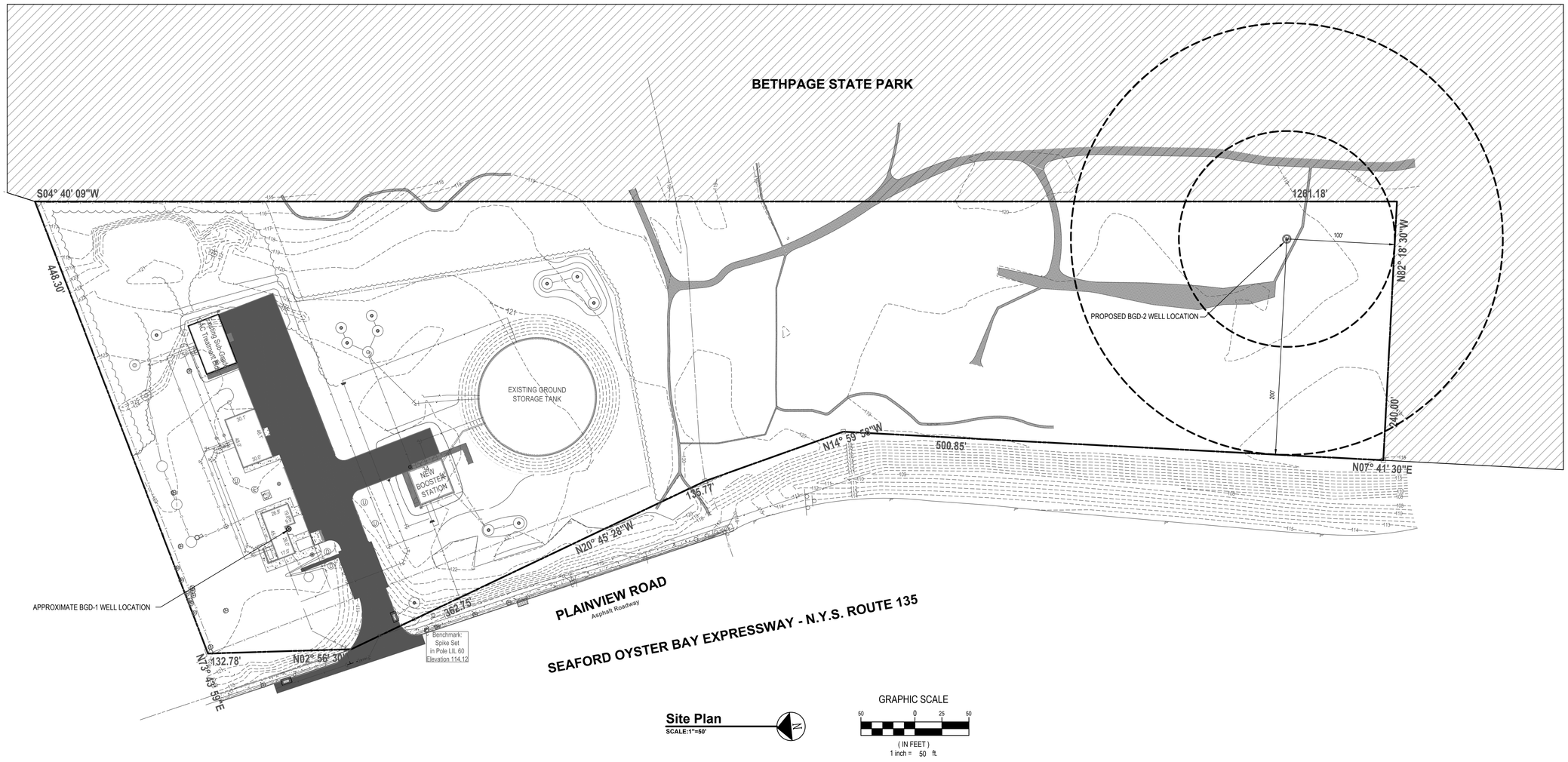
0 5 10 MILES
0 5 10 KILOMETERS

VERTICAL SCALE IS GREATLY EXAGGERATED
NATIONAL GEODETIC VERTICAL DATUM OF 1929

IMAGE SOURCE: US GEOLOGICAL SURVEY HYDROLOGIC INVESTIGATIONS ATLAS HA-709 (SHEET 1 OF 3)

H 2 M architects + engineers

EXHIBIT E WELL SITE PLAN AND SPECIFICATIONS OUTLINE



Site Plan
SCALE:1"=50'

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

NOTES

1. **BASEMAP GEOMETRY OBTAINED FROM SURVEY AND PROPOSED LINEWORK FROM TANK DESIGN ON PLANT SITE (H2M NO. BPWD 13-06**

H2M architects + engineers
NJ Cert. of Auth. 24GA28019100

119 Cherry Hill Road
Suite 110
Parsippany, NJ 07054
P: (862) 207-5900
F: (973) 334-0507

Melville, NY
Albany, NY
Westchester, NY
Suffern, NY
Parsippany, NJ
Howell, NJ

CONSULTANTS:

MARK	DATE	DESCRIPTION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
TJH	EQ		

PROJECT No.:	DATE:	SCALE:
BPWD 18-06	MAY 2018	AS SHOWN

CLIENT
Bethpage Water District

Proposed BGD-2 Well

Plainview Road, Bethpage, NY

CONTRACT

STATUS
NOT FOR CONSTRUCTION

SHEET TITLE

DRAWING No.

SHEET No.
OF **100**

X:\BPWD (Bethpage Water District) - 10150\BPWD1806 - New Well at BGD\02-BIM-CADD\Con-docs\mech\BPWD1806 Civil Doc.dwg

X:\BPWD (Bethpage Water District) - 10150\BPWD1806 - New Well at BGD\02-BIM-CADD\Con-docs\mech\BPWD1306 Civil Doc.dwg Last Modified: Aug 29, 2018 - 2:36pm Plotted on: Aug 30, 2018 - 3:33pm By: ngibbs

BETHPAGE WATER DISTRICT

NEW BGD-2 WELL

EXHIBIT E

SPECIFICATION OUTLINE

DIVISION 1 – GENERAL REQUIREMENTS

011100 SUMMARY OF WORK
011400 WORK RESTRICTIONS
012900 PAYMENT PROCEDURES
012973 SCHEDULE OF VALUES
013100 PROJECT MANAGEMENT AND COORDINATION
013119 PROGRESS MEETINGS
014100 REGULATORY REQUIREMENTS
014500 QUALITY CONTROL
014550 ENVIRONMENTAL QUALITY CONTROL
015000 TEMPORARY FACILITIES AND CONTROLS
015680 ENVIRONMENTAL PROTECTION
016200 PRODUCT OPTIONS
016500 PRODUCT DELIVERY, STORAGE AND HANDLING
017423 CLEANING
017800 CLOSEOUT SUBMITTALS
017820 OPERATING AND MAINTENANCE DATA
017839 PROJECT RECORD DOCUMENTS

DIVISION 2

NO ITEMS USED IN THIS DIVISION

DIVISION 3 – CONCRETE

033000 CONCRETE

DIVISIONS 4-8

NO ITEMS USED IN THESE DIVISIONS

DIVISION 9 – FINISHES

09744 MECHANICAL PIPING COATINGS SYSTEM

DIVISIONS 10-21

NO ITEMS USED IN THESE DIVISIONS

DIVISION 22 – PLUMBING

224000 SMALL PIPING, VALVES AND MISCELLANEOUS EQUIPMENT

DIVISIONS 23-25

NO ITEMS USED IN THESE DIVISIONS

DIVISION 26 – ELECTRICAL

260000 ELECTRICAL
260114 FLEXIBLE LIQUID-TIGHT METAL CONDUIT
260519 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS & CABLES

DIVISIONS 27-30

NO ITEMS IN THESE DIVISIONS

DIVISION 31 – EARTHWORK

311100 SITE CLEARING
312316 EXCAVATION
312333 TRENCHING AND BACKFILLING

DIVISION 32 – EXTERIOR IMPROVEMENTS

329219 SEEDING

DIVISION 33 – UTILITIES

331300 DISINFECTION OF WATER DISTRIBUTION
331116 SITE WATER UTILITY DISTRIBUTION PIPING
332120 DISINFECTION OF WELLS

DIVISION 43 – PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT

430513 ELECTRIC MOTORS
432155 WELL PUMP

APPENDICES

A NCDH WATER QUALITY MONITORING REQUIREMENTS
B TURBINE PUMP & WELL DATA SHEET

Exhibit F United States Geological Survey Maps: Hydrogeologic Framework of Long Island, New York

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
SUFFOLK COUNTY WATER AUTHORITY AND DEPARTMENT OF HEALTH SERVICES

INTRODUCTION

Long Island, N.Y., is underlain by a mass of unconsolidated geologic deposits of clay, silt, sand, and gravel that overlie southward-sloping consolidated bedrock. These deposits are thinnest in northern Queens County (northwestern Long Island), where bedrock crops out, and increase to a maximum thickness of 2,000 ft in southeastern Long Island. This sequence of unconsolidated deposits consists of several distinct geologic units ranging in age from late Cretaceous through Pleistocene, with some recent deposits near shores and streams. These units are differentiated by age, depositional environment, and lithology in table 1.

Investigations of ground-water availability and flow patterns may require information on the internal geometry of the hydrologic system that geologic correlations and interpretation alone cannot provide; hydrologic interpretations in which deposits are differentiated on the basis of water-transmitting properties are generally needed also. This set of maps and vertical sections depicts the hydrogeologic framework of the unconsolidated deposits that form Long Island's ground-water system. These deposits can be classified into eight major hydrogeologic units (table 1). The hydrogeologic interpretations presented herein are not everywhere consistent with strict geologic interpretation owing to facies changes and local variations in the water-transmitting properties within geologic units.

These maps depict the upper-surface altitude of seven of the eight hydrogeologic units, which, in ascending order, are: consolidated bedrock, Lloyd aquifer, Raritan confining unit, Magothy aquifer, Monmouth greensand, Jameco aquifer, and Gardiners Clay. The upper glacial aquifer—the uppermost unit—is at land surface over most of Long Island and is, therefore, not included. The nine north-south hydrogeologic sections shown below depict the entire sequence of unconsolidated deposits and, together with the maps, provide a detailed three- dimensional interpretation of Long Island's hydrogeologic framework.

The structure-contour map that shows the upper-surface altitude of the Cretaceous deposits is included to illustrate the erosional unconformity between the Cretaceous and overlying Pleistocene deposits. Pleistocene erosion played a major role in determining the shape and extent of the Lloyd aquifer, the Raritan confining unit, and the Magothy aquifer, and thus partly determined their hydrogeologic relation with subsequent (post-Cretaceous) deposits.

PREVIOUS HYDROGEOLOGIC INVESTIGATIONS

The first attempt to map the complete sequence of geologic units on an islandwide scale was made by Suter and others (1949) despite a paucity of data. The most recent report to interpret the hydrogeology of Long Island on an islandwide scale was by McClymonds and Franke (1972) which gives the estimated thickness of the Lloyd, Magothy, Jameco, and upper glacial aquifers. Recent investigations have provided more detailed information in several local areas.

The hydrogeologic framework of Kings and Queens Counties has been evaluated by Buxton and Shernoff (U.S. Geological Survey, written comm., 1985), and the northern part of Nassau County has been studied by Kilburn (1980) and Kilburn and Krulikas (1986). The Roosevelt and Mitchell Field area in Nassau County has been studied by Eckhardt (in press), and the upper surface altitude of the Matawan Group and Magothy Formation and shallower geologic units of southern Nassau and Suffolk Counties have been mapped by Doriski and Wilde-Katz (1982).

Jensen and Soren (1974) mapped the complete sequence of aquifers and confining units in Suffolk county. Local hydrogeologic studies in Suffolk County include the Montauk Point area (Prince, 1986); the south fork (Nemickas and Koszalka, 1982); the northern part of the Town of Brookhaven (Koszalka, 1980); and the surface of the Matawan Group and Magothy Formation in Suffolk County (Krulikas, Koszalka, and Doriski, 1983). All of these reports define either geologic or hydrogeologic units, which may create some discrepancies upon comparision owing to the differing criteria for interpretation.

The hydrogeologic units on Long Island can be correlated with those of northeastern New Jersey, which have been investigated by Gill and Farlekas (1976), Minard (1969), Zapecza (1984). Although southern Connecticut parallels the north shore of Long Island (fig.1), it lacks the hydrogeologic units of Long Island because they pinch out beneath the Long Island Sound.

SOURCES OF DATA

Two major sources of hydrogeologic data were used to construct the maps—records of wells and offshore seismic surveys.

Well Data

The well data used in this investigation include drillers' logs, geophysical logs, and geologists' descriptions of cores and other drilling samples. Hydrogeologic data from more than 3,100 wells on Long Island are available. Hydrogeologic interpretations of all wells used in this study, including the altitude of the upper surface of each unit penetrated, are given in a report by Buxton, Smolensky, and Shernoff (in press). Hydrogeologic data on these wells are on file at the U.S. Geological Survey office in Syosset, N.Y.

Offshore Seismic Surveys

Several seismic surveys conducted in recent years have produced a means of mapping offshore structures. Primarily through reflection techniques, the configuration of the bedrock and Cretaceous surfaces under the water surrounding Long Island have been defined. Grim and others (1970) and the U.S. Geological Survey (1970) contoured the eroded surface of the Cretaceous deposits and bedrock beneath Long Island Sound. Williams (1976) investigated the shallow bottom structure off Long Island with emphasis around the north and south forks. McMaster and Ashraf (1973) discuss paleo-drainage in New England and Long Island and resultant buried valleys. Hutchinson (written commun., 1984) has interpreted data from recent cruises on the Long Island Sound and on the inner continental shelf directly south of Long Island.

In this study, knowledge gained from offshore seismic survey was used to correlate onshore and offshore data and to project the extent of the hydrogeologic units offshore. The eroded surface of Cretaceous deposits or consolidated bedrock beneath Long Island Sound (U.S. Geological Survey, 1970) was correlated with the surface of the Upper Cretaceous unit onshore. The dip of the relatively flat underlying Cretaceous units was assumed to persist offshore; thus the onshore surfaces were extended northward to their contact with the Cretaceous or bedrock surface. The bedrock surface was similarly extended northward to the point at which the effects of post-Cretaceous erosion could be observed. The extent of each Cretaceous unit is defined by the point of post-Cretaceous erosion on the next underlying unit. The logic of this analysis is consistent with the concepts of the sedimentation model described in the following section.

EROSIONAL AND DEPOSITIONAL HISTORY

The unconsolidated deposits that comprise the hydrogeologic framework of Long Island reflect the island's erosional and depositional history.

Present-day depositional environments show the close relation between environment of deposition and type and rate of sediments deposited. These relations can be applied to the present sequence of sediments and their structure and characteristics to identify and correlate recurring intervals of deposition, nondeposition, and (or) erosion in the paleo-environments.

This study used a theoretical sedimentation model to help define the structure and configuration of the individual hydrogeologic units. The model was used to help conceptualize the type, location, and thickness of sediments on the basis of a sequence of changing physical environments through geologic time.

The following paragraphs briefly summarize the paleo-environments in Long Island's geologic past and their correlation with the present hydrogeologic units on Long Island.

Consolidated bedrock on Long Island (sheet 2) is of Precambrian and/or Paleozoic age, and its surface configuration is defined as a peneplain (Suter and others, 1949). Because Paleozoic and lower Mesozoic deposits are absent above bedrock, the period when erosion on the bedrock surface occurred cannot be dated.

The overlying Cretaceous age sediments can be characterized by three periods of deposition, each separated by an interval of nondeposition and (or) erosion. The lowermost Cretaceous sediments on Long Island, which form the Raritan Formation, were probably deposited in an environment dominated by streams and coalescing deltas (Buxton and others, 1981). These deposits exhibit a distinct fining upward that may be a result of changing stream gradients and (or) a prograding shoreline. The formation has been divided into two members—the Lloyd Sand Member (Lloyd aquifer) and a conformable overlying unnamed clay member (Raritan confining unit). These members are differentiated primarily by grain size. The intervening conformity is relatively flat lying and dips gradually to the southeast (sheet 2).

The first interval of nondeposition (or erosion) is shown by a distinct unconformity that separates the fine-grained clay member of the Raritan Formation from the coarse basal zone of the Matawan Group and Magothy Formation, undifferentiated (Magothy aquifer). This unconformity is shown on the surface configuration of the Raritan clay member (sheet 2) and indicates little erosion.

After the interval of nondeposition, the Magothy Formation was deposited in an environment again dominated by streams and coalescing deltas (Doriski and Wilde-Katz, 1983). Its coarse basal zone indicates an environment of high energy that decreased rapidly, causing an upward gradation to the fine sands and clays that form the bulk of this unit.

The Monmouth Group (Monmouth greensand) unconformably overlies the Matawan Group and Magothy Formation, undifferentiated. The unconformity between these units indicates a second interval of nondeposition or erosion during the Cretaceous on Long Island. The surface of this deposit is gently rolling with no severe erosion (sheet 3). The clay and silty sand material that forms the Monmouth Group (sheet 3) was deposited by a transgressing sea. The abundance of glauconite indicates a quiet marine environment.

Although Tertiary deposits are reported offshore south of Long Island, they are not present onshore. Whether Tertiary deposition occurred and was subsequently eroded, or never occurred, is uncertain.

Several episodes of Pleistocene glaciation by a southward advance from New England and the Hudson River valley severely eroded the Cretaceous deposits. The unconformity, which extends across Long Island between all Cretaceous and overlying deposits, reflects the glacial scouring and glaciofluvial erosion typical of the high-energy Pleistocene environments.

The well-dissected surface of Cretaceous or older deposits is depicted on sheet 1. The erosion is most severe on the north shore and in Long Island Sound, where glacial processes locally cut through the entire sequence of Cretaceous deposits and, in some areas, into crystalline bedrock. Several deep channels in the Cretaceous surface in central Suffolk County indicate severe scouring by ice tongues and erosion in meltwater channels that trend both along the ice margin and southward.

The lack of ice-contact erosion on the relatively flat-lying Cretaceous surface in the south half of the island marks the furthest extent of any of the glacial advances.

The oldest Pleistocene deposit is the Jameco Gravel (Jameco aquifer), which is present only in western Long Island. It is a channel filling of gravel and coarse sand of Illinoian age and may be the remnant of a high-energy ancestral Hudson River (Soren, 1978). The surface of this unit (sheet 3) probably underwent extensive erosion and reworking by glaciation and fluvial processes during interglacial periods.

The effects of eustatic sea-level changes during the Pleistocene are shown by several lagoonal and shallow-bay clays along southern Long Island. The most prominent of these is the Gardiners Clay (sheet 3), which was probably deposited during Sangamon interglaciation (Soren, 1971).

Subsequent deposition on Long Island, except for small recent deposits, occurred in late Wisconsin glaciation. Long Island's present topography is characterized by the Ronkonkoma and Harbor Hill moraine ridges and a gradually southward sloping outwash plain south of the moraines.

SELECTED REFERENCES

Buxton, H.T., Soren, Julian, Posner, A., and Shernoff, P.K., 1981, Reconnaissance of the ground-water resources of Kings and Queens Counties, New York: U.S. Geological Survey Open-File Report 81–1186, 59 p.

Buxton, H.T., and Shernoff, P.K., Ground-water resources of Kings and Queens Counties, New York: U.S. Geological Water-Supply Paper (in press).

Buxton, H.T., Smolensky, D.A., and Shernoff, P. K., 1989, Hydrogeologic correlations for selected wells on Long Island, New York—A data base and retrieval program: U.S. Geological Survey Water-Resources Investigations Report 86–4318, 107 p.

Crandell, H.C., Jr., 1962, Geology and ground-water resources of Plum Island, Suffolk County, New York: U.S. Geological Survey Water-Supply Paper 1539–X, 35 p.

———1963, Geology and ground-water resources of the Town of Southold, Suffolk County, New York: U.S. Geological Survey Water-Supply Paper 1619–GG, 36 p.

deLaguna, Wallace, 1963, Geology of Brookhaven National Laboratory and vicinity, Suffolk County, New York: U.S. Geological Survey Bulletin 1156–A, 35 p.

deLaguna, Wallace, and Brashears, M.L., Jr., 1948, The configuration of the rock floor in western Long Island, New York: New York State Water Power and Control Commission Bulletin GW–13, 32 p.

Doriski, T.P., and Wilde-Katz, Franceska, 1983, Geology of the "20-Foot" clay in southern Nassau and southwestern Suffolk Counties, Long Island, New York: U.S. Geological Survey Water-Resources Investigations Report 82–4056, 17 p.

Eckhardt, D.A., and Pearsall, K.A., Chlorinated compounds in ground water at Roosevelt Field, Nassau County, Long Island, New York: U.S. Geological Survey Water-Resources Investigations Report (in press).

Faust, G.T., 1963, Physical properties and mineralogy of selected samples of the sediments from the vicinity of Brookhaven National Laboratory, Long Island, New York: U.S. Geological Survey 1156–B, 34 p.

Fuller, M.L., 1914, The geology of Long Island, New York: U.S. Geological Survey Professional Paper 82, 231 p.

Gill, H.E., and Farlekas, G.M., 1976, Geohydrologic maps of the Potomac-Raritan-Magothy aquifer system in the New Jersey Coastal Plain: U.S. Geological Survey Hydrologic Atlas HA–557, 2 sheets, scale 1:500,000.

Grim, M.S., Drake, C.L., and Heirtzler, J.R., 1970, Sub-bottom study of Long Island Sound: Geological Society of America Bulletin 81, p. 649–666.

Isbister, John, 1966, Geology and hydrology of northeastern Nassau County, Long Island, New York: U.S. Geological Survey Water-Supply Paper 1825, 89 p.

Jensen, H.M., and Soren, Julian, 1971, Hydrogeologic data from selected wells and test holes in Suffolk County, Long Island, New York: Long Island Water Resources Bulletin 3, 35 p.

———1974, Hydrogeology of Suffolk County, Long Island, New York: U.S. Geological Survey Hydrologic Investigation Atlas HA–501, 2 sheets, scale 1:250,000.

Kilburn, Chabot, 1980, Hydrogeology of the Town of North Hempstead, Nassau County, Long Island, New York: Long Island Water Resources Bulletin 12, 87 p.

Kilburn, Chabot, and Krulikas, R.K., Hydrogeology and ground-water quality of the northern part of the Town of Oyster Bay, Nassau County, New York, in 1980: U.S. Geological Survey Water-Resources Investigations Report 85-4051, 71 p. (in press).

Koszalka, E.J., 1980, Hydrogeologic data from the northern part of the Town of Brookhaven, Suffolk County, New York: Suffolk County Water Authority, Long Island Water Resources Bulletin 15, 80 p.

Krulikas, R.K., 1981, Hydrogeologic data from selected wells and test holes in Suffolk County, Long Island, New York, 1972-80: U.S. Geological Survey Open-File Report 81–500, 27 p.

Krulikas, R.K., Koszalka, E.J., and Doriski, T.P.,1983, Altitude of the top of the Matawan Group-Magothy Formation, Suffolk County, Long Island, New York: U.S. Geological Survey Open-File Report 83–137, 1 sheet.

Ku, H.F.H., Vecchioli, John, and Cerrillo, L.A., 1975, Hydrogeology along the proposed barrier-recharge-well alinement in southern Nassau County, Long Island, New York: U.S. Geological Survey Hydrologic Investigation Atlas HA–502, 1 sheet, scale 1:96,000.

Leggette, R.M.,1938a, Record of wells in Nassau County, New York: New York State Water Power and Control Commission Bulletin GW–5, 140 p.

———1938b, Record of wells in Suffolk County, New York: New York State Water Power and Control Commission Bulletin GW–4, 108 p.

Lubke, E.R., 1964, Hydrogeology of the Huntington-Smithtown area, Suffolk County, New York, in U.S. Geological Survey Water-Supply Paper 1669–D, p. D1–D68.

MacClintock, Paul, and Richards, H.R., 1936, Correlation of late Pleistocene marine and glacial deposits of New Jersey and New York: Geological Society of America Bulletin, v. 47, no. 3, p. 289–338.

McClymonds, N.E., and Franke, O.L., 1972, Water-transmitting properties of aquifers on Long Island, New York: U.S. Geological Survey Professional Paper 627–E, p. E1–E24, 24 p.

McMaster, R.L., and Ashraf, Asaf, 1973, Sub-bottom basement drainage system of inner continental shelf off southern New England: Geological Society of America Bulletin, v. 84, p. 187–190.

———1973, Extent and formation of deeply buried channels on the continental shelf off southen New England: Journal of Geology, v. 81, p. 374–379.

———1973, Drowned and buried valleys on the southern New England continental shelf: Marine Geology, v. 15, no. 249–268.

Minard, J.P., 1969, Geology of the Sandy Hook Quadrangle in Monmouth County, New Jersey: U.S. Geological Survey Bulletin 1276, 43 p.

Nemickas, Bronius, and Koszalka, E.J., 1982, Geohydrologic appraisal of the water resources of the South Fork, Long Island, New York: U.S. Geological Survey Water-Supply Paper 2073, 55 p.

Oliver, J.E., and Drake, C.L., 1951, Geophysical investigations in the emerged and submerged Atlantic coastal plain, part IV—the Long Island area: Geological Society of America Bulletin, v. 62, p. 1278–1296.

Perlmutter, N.M., and Todd, Ruth, 1965, Correlation and foraminifera of the Monmouth Group (Upper Cretaceous), Long Island, New York: U.S. Geological Survey Professional Paper 483–I, 24 p.

Perlmutter, N.M., and Geraghty, J.J., 1963 Geology and ground-water conditions in, southern Nassau and southeastern Queens Counties, Long Island, New York: U.S. Geological Survey Water-Supply Paper 1613–A, p. A1–A205.

Prince, K.R., 1986, Ground-water assessment of the Montauk area, Long Island, New York: U.S. Geological Survey Water-Resources Investigations Report 85–4013, 103 p.

Sirkin, L.A., 1968, Geology, geomorphology, and late-glacial environments of western Long Island, New York, *in* Finks, R.M. (ed.), Guidebook to field excursions, New York State Geological Association, 40th Annual meeting: p. 233–253.

———1974, Palynology and stratigraphy of Cretaceous strata in Long Island, New York, and Block Island, Rhode Island: U.S. Geological Survey Journal of Research, v. 2, p. 431–446.

———1976, Block Island, Rhode Island—evidence of fluctuation of the late Pleistocene ice margin: Geological Society of America Bulletin, v. 87, p. 574–580.

Sirkin, L.A., and Stuckenrath, R., 1980, The Portwashingtonian warm interval in the northern Atlantic Coastal Plain: Geological society of America Bulletin, part 1, v. 91, p. 332–336.

Soren, Julian, 1971, Results of subsurface exploration in the mid-island area of western Suffolk County, Long Island, New York: Long Island Water Resources Bulletin 1, 60 p.

———1978, Hydrogeologic conditions in the Town of Shelter Island, Suffolk County, Long Island, New York: U.S. Geological Survey Water-Resources Investigations 77–77, 22 p.

Suter, Russell, deLaguna, Wallace, and Perlmutter, N.M., 1949, Mapping of geologic formations and aquifers of Long Island: New York State Water Power and Control Commission Bulletin GW–18, 212 p.

Upson, J.E., 1970, The Gardiners Clay of eastern Long Island, New York—a reexamination, U.S. Geological Survey Professional Paper 700–B, p. 157–160.

U.S. Geological Survey, 1967, Engineering geology of the northeast corridor, Washington D.C. to Boston, Massachusetts, coastal plain and surficial geology: U.S. Geological Survey Miscellaneous Geologic Investigations 514, 8 sheets.

Veatch, A.C., Slichter, C.S., Bowman, Isiah, Crosby, W.O., and Horton, R.E., 1906, Underground water resources of Long Island, New York: U.S. Geological Survey Professional Paper 44, 394 p.

Warren, M.A., deLaguna, Wallace, and Luszcynski, N.J., 1968, Hydrology of Brookhaven National Laboratory and vicinity, Suffolk County, New York: U.S. Geological Survey Bulletin 1156–C, 127 p.

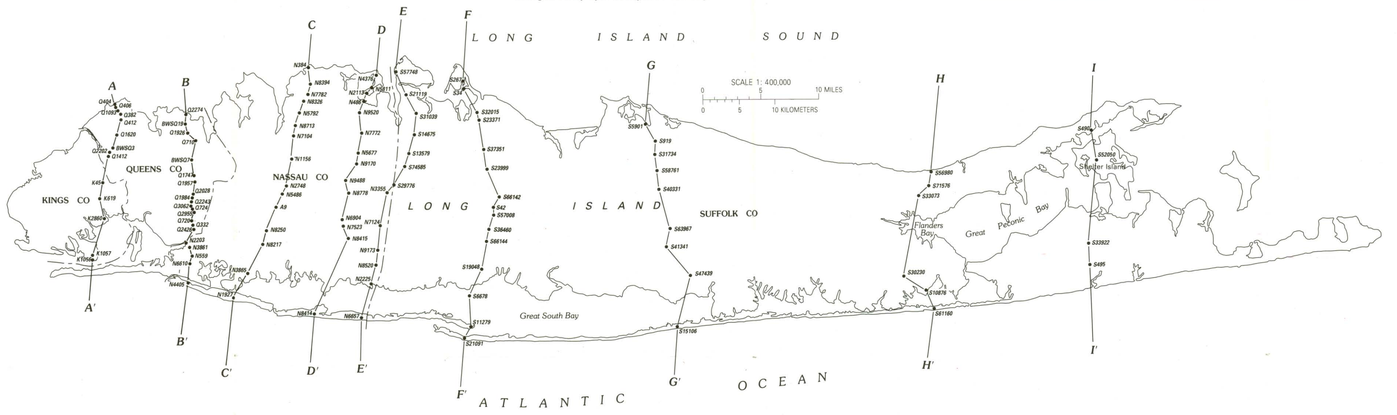
Williams, S.J., 1976, Sediments and shallow structure of the Long Island Atlantic inner continental shelf: U.S. Army Corps of Engineers, Coastal Engineering Research Center, Fort Belvoir, Va., technical paper 76–2, 123 p.

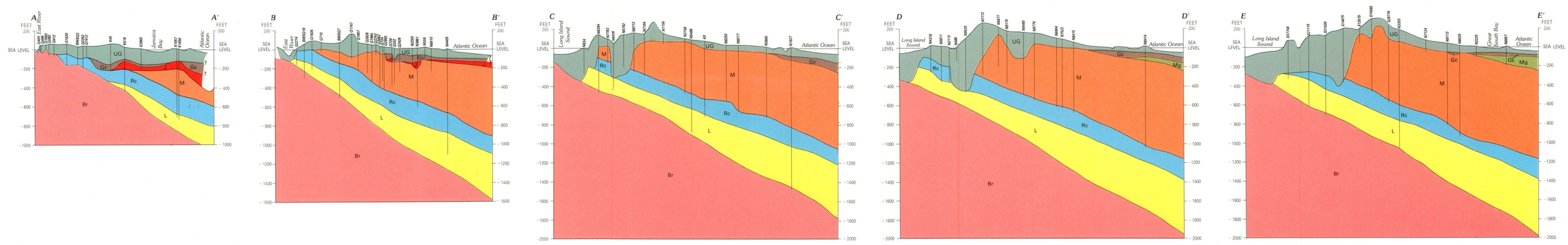
———1981, Sand resources and geological character of Long Island Sound: U.S. Army Corps of Engineers, Coastal Engineering Research Center, Fort Belvoir, Va., Technical Paper 81–3.

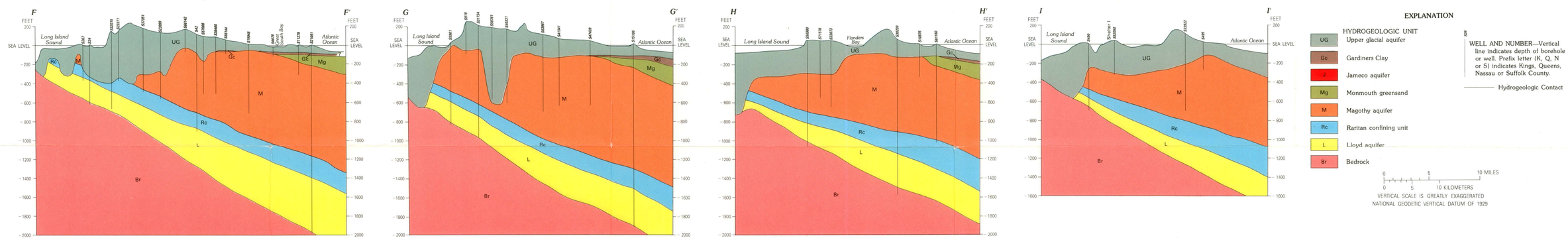
Zapecza, O.S., 1984, Hydrogeologic framework of the New Jersey coastal plain: U.S. Geological Survey Open-file Report 84–730, 61 p.

Table 1.—**Hydrogeologic units of Long Island and their water bearing properties**
[ft/d, feet per day; ft, feet]

System	Series	Geologic unit	Hydrogeologic unit	Approximate maximum thickness (ft)	Character of deposits	Water bearing properties
Quaternary	Holocene	Recent deposits: Salt marsh deposits, stream alluvium, shoreline deposits and fill	Recent deposits	50	Sand, gravel, clay, silt, organic mud, peat, loam, and shells. Colors are gray, brown, green, black, and yellow.	Beach deposits are highly permeable; marsh deposits poorly permeable. Locally hydraulically connected to underlying aquifers.
	Pleistocene	Upper Pleistocene deposits	Upper glacial aquifer	700	Till composed of clay, sand, gravel, and boulders, forms Harbor Hill and Ronkonkoma terminal moraines. Outwash deposits consist of quartzose sand, fine to very coarse, and gravel, pebble to boulder sized. Also contains lacustrine, marine, and reworked deposits. Local units are Port Washington aquifer and confining unit, "20-foot clay," and clay at Smithtown.	Till is poorly permeable. Outwash deposits are moderately to highly permeable. Glaciolacustrine and marine clay deposits are mostly poorly permeable but locally have thin, moderately permeable layers of sand and gravel. Average horizontal hydraulic conductivity is approximately 270 ft/d; conductivity of morainal material is approximately 50 percent of outwash deposits; anisotropy is approximately 10:1.
		unconformity				
		Gardiners Clay	Gardiners Clay	150	Clay, silt, and few layers of sand. Colors are grayish green and brown. Contains marine shells and glauconite.	Poorly permeable; constitutes a confining layer for underlying aquifer. Some sand lenses may be permeable. Average vertical hydraulic conductivity is approximately 0.001 ft/d.
		unconformity				
		Jameco Gravel	Jameco aquifer	200	Sand, fine to very coarse, and gravel to large-pebble size; few layers of clay and silt. Gravel is composed of crystalline and sedimentary rocks. Color is mostly brown.	Moderately to highly permeable. Confined by overlying Gardiners clay. Average horizontal hydraulic conductivity is 200 to 300 ft/d; anisotropy is approximately 10:1.
Cretaceous	Upper Cretaceous	Monmouth Group	Monmouth greensand	200	Interbedded marine deposits of clay, silt, and sand; dark-greenish gray, greenish-black, greenish, dark-gray, and black, containing much glauconite.	Poorly permeable; primarily a confining unit for underlying Magothy aquifer. Average vertical hydraulic conductivity is approximately 0.001 ft/d.
		unconformity				
		Matawan Group – Magothy Formation, undifferentiated	Magothy aquifer	1,100	Sand, fine to medium clayey in part; interbedded with lenses and layers of coarse sand and sandy and solid clay. Gravel is common in basal zone. Sand and gravel are quartzose. Lignite, pyrite, and iron oxide concretions are common. Colors are gray, white, red, brown, and yellow.	Most layers are poorly to moderately permeable; some are highly permeable locally. Water is unconfined in uppermost parts, elsewhere is confined. Constitutes principal aquifer for public supply. Average horizontal hydraulic conductivity is 50 ft/d; anisotropy is approximately 100:1.
		unconformity				
		Raritan Formation — Unnamed clay member	Raritan confining unit	200	Clay, solid and silty; few lenses and layers of sand. Lignite and pyrite are common. Colors are gray, red, and white, commonly variegated.	Poorly to very poorly permeable; constitutes confining layer for underlying Lloyd aquifer. Average vertical hydraulic conductivity is approximately 0.001 ft/d.
		Raritan Formation — Lloyd Sand Member	Lloyd aquifer	500	Sand, fine to coarse, and gravel, commonly with clayey matrix; some lenses and layers of solid and silty clay; locally contains thin lignite layers. Sand and most of gravel are quartzose. Colors are yellow, gray, and white; clay is red locally.	Poorly to moderately permeable. Water is confined by overlying Raritan clay. Average horizontal hydraulic conductivity is 40 ft/d; anisotropy is approximately 10:1.
Paleozoic and Precambrian		Bedrock	Bedrock		Crystalline metamorphic and igneous rocks; muscovite-biotite schist, gneiss, and granite. A soft, clayey zone of weathered bedrock locally is more than 70 ft thick.	Poorly permeable to virtually impermeable; constitutes lower boundary of ground-water reservoir. Some hard fresh water is contained in joints and fractures but is impractical to develop at most places.







EXPLANATION

HYDROGEOLOGIC UNIT
- UG — Upper glacial aquifer
- Gc — Gardiners Clay
- J — Jameco aquifer
- Mg — Monmouth greensand
- M — Magothy aquifer
- Rc — Raritan confining unit
- L — Lloyd aquifer
- Br — Bedrock

S34 — WELL AND NUMBER—Vertical line indicates depth of borehole or well. Prefix letter (K, Q, N or S) indicates Kings, Queens, Nassau or Suffolk County.

Hydrogeologic Contact

0 5 10 MILES
0 5 10 KILOMETERS
VERTICAL SCALE IS GREATLY EXAGGERATED
NATIONAL GEODETIC VERTICAL DATUM OF 1929

ALTITUDE OF THE UPPER SURFACE OF SUBCROPS OF CRETACEOUS DEPOSITS AND BEDROCK BENEATH THE UPPER GLACIAL AQUIFER, LONG ISLAND, NEW YORK

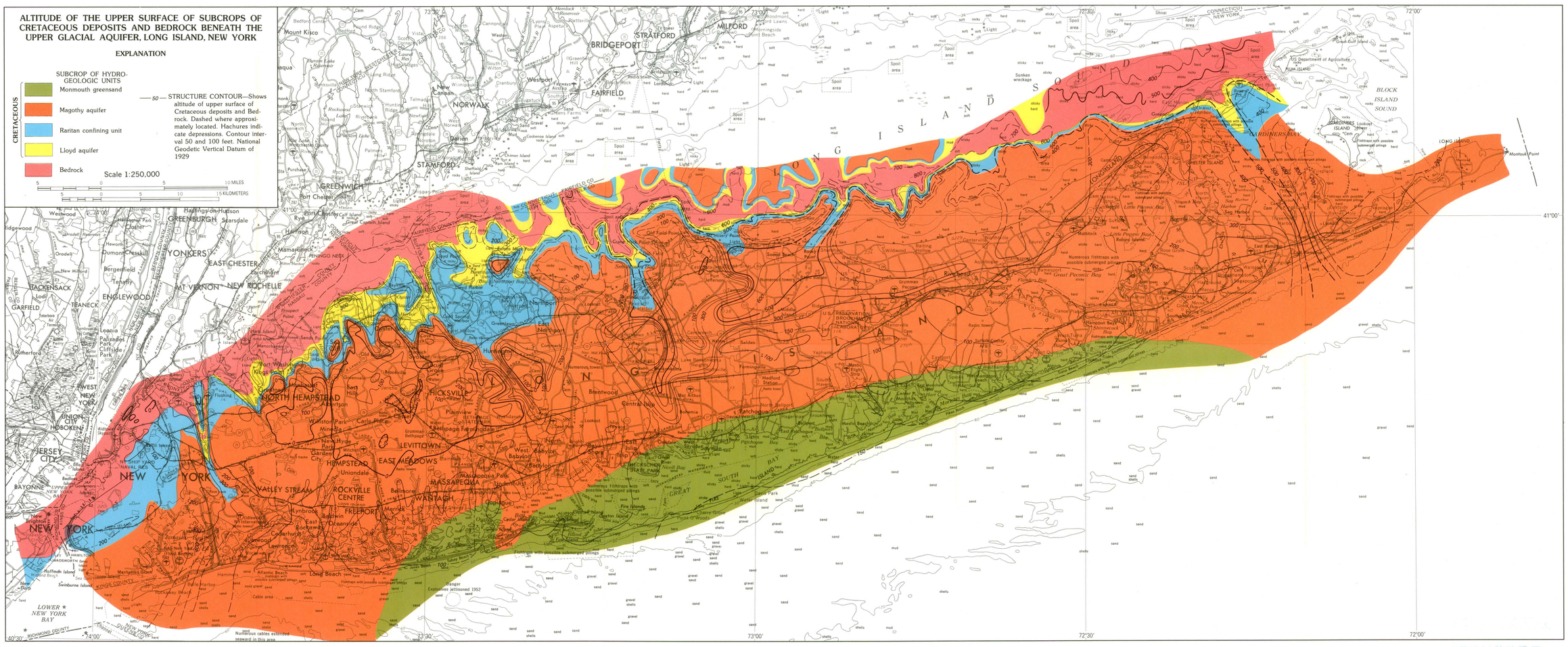
EXPLANATION

SUBCROP OF HYDROGEOLOGIC UNITS
- Monmouth greensand
- Magothy aquifer
- Raritan confining unit
- Lloyd aquifer
- Bedrock

CRETACEOUS

—50— STRUCTURE CONTOUR—Shows altitude of upper surface of Cretaceous deposits and Bedrock. Dashed where approximately located. Hachures indicate depressions. Contour interval 50 and 100 feet. National Geodetic Vertical Datum of 1929

Scale 1:250,000
5 0 5 10 MILES
5 0 5 10 15 KILOMETERS



Base from U. S. Geological Survey
New York, 1960–79, Hartford, 1962–75,
Providence, 1947–69 and Newark, 1944–69

ALTITUDE OF THE UPPER SURFACE OF CRETACEOUS DEPOSITS, LONG ISLAND, NEW YORK

HYDROGEOLOGIC FRAMEWORK OF LONG ISLAND, NEW YORK

By
D.A. Smolensky, H.T. Buxton, and P.K. Shernoff

1989

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1990

For sale by U. S. Geological Survey Map Distribution, Box 25286, Federal Center, Denver, CO 80225.

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
SUFFOLK COUNTY WATER AUTHORITY AND DEPARTMENT OF HEALTH SERVICES

HYDROLOGIC INVESTIGATIONS
ATLAS HA–709 (SHEET 2 OF 3)

ALTITUDE OF THE UPPER SURFACE OF THE RARITAN CONFINING UNIT, LONG ISLAND, NEW YORK

EXPLANATION

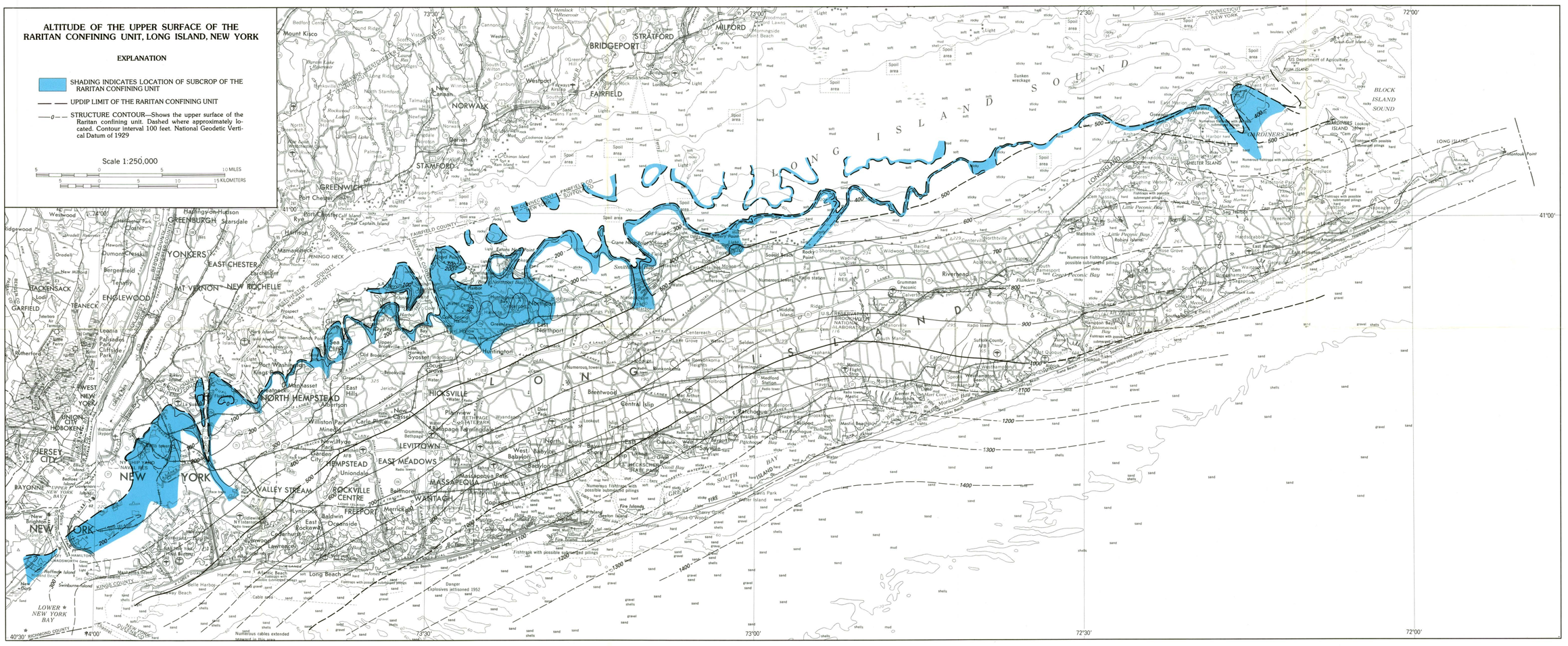
SHADING INDICATES LOCATION OF SUBCROP OF THE RARITAN CONFINING UNIT

UPDIP LIMIT OF THE RARITAN CONFINING UNIT

—0— STRUCTURE CONTOUR—Shows the upper surface of the Raritan confining unit. Dashed where approximately located. Contour interval 100 feet. National Geodetic Vertical Datum of 1929

Scale 1:250,000

5 0 5 10 MILES
5 0 5 10 15 KILOMETERS



ALTITUDE OF THE UPPER SURFACE OF THE RARITAN CONFINING UNIT

ALTITUDE OF THE UPPER SURFACE OF THE LLOYD AQUIFER, LONG ISLAND, NEW YORK

EXPLANATION

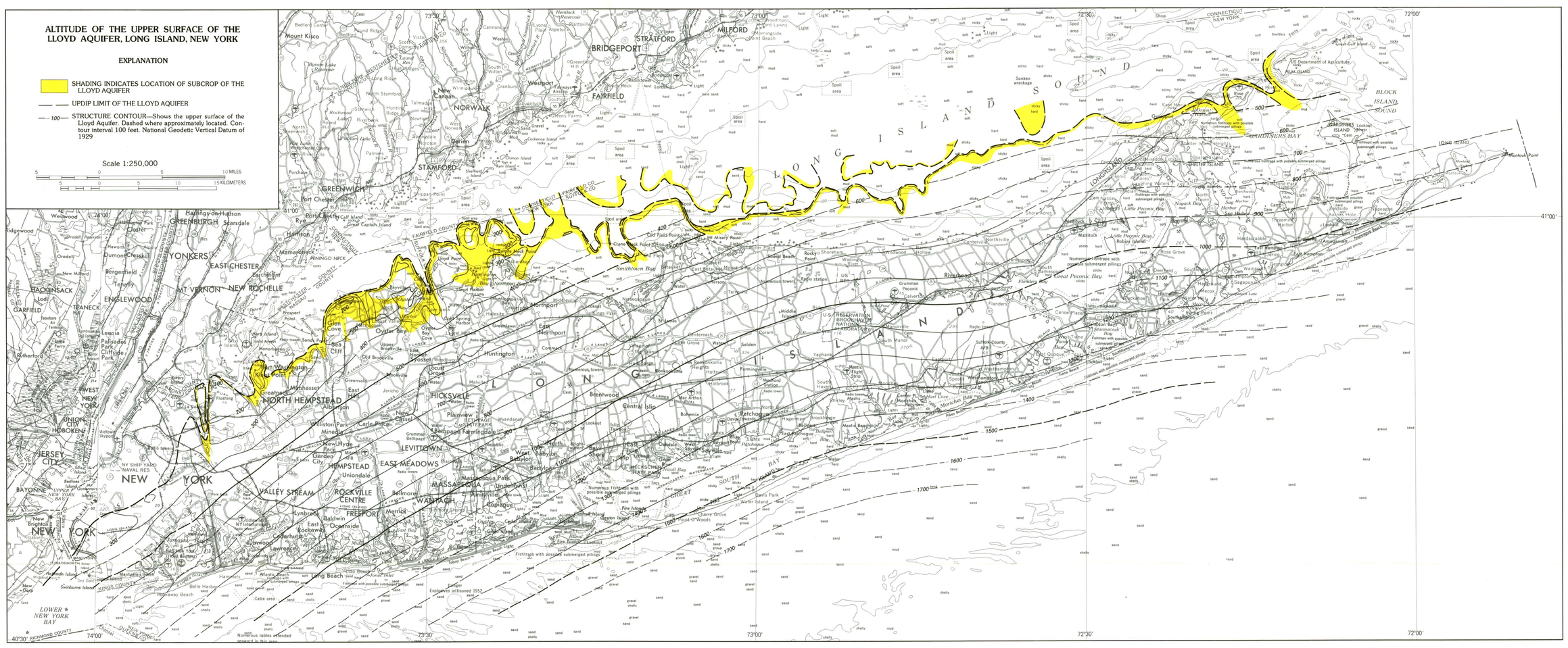
SHADING INDICATES LOCATION OF SUBCROP OF THE LLOYD AQUIFER

UPDIP LIMIT OF THE LLOYD AQUIFER

—100— STRUCTURE CONTOUR—Shows the upper surface of the Lloyd Aquifer. Dashed where approximately located. Contour interval 100 feet. National Geodetic Vertical Datum of 1929

Scale 1:250,000

5 0 5 10 MILES
5 0 5 10 15 KILOMETERS



ALTITUDE OF THE UPPER SURFACE OF THE LLOYD AQUIFER

CONFIGURATION OF THE BEDROCK SURFACE LONG ISLAND, NEW YORK

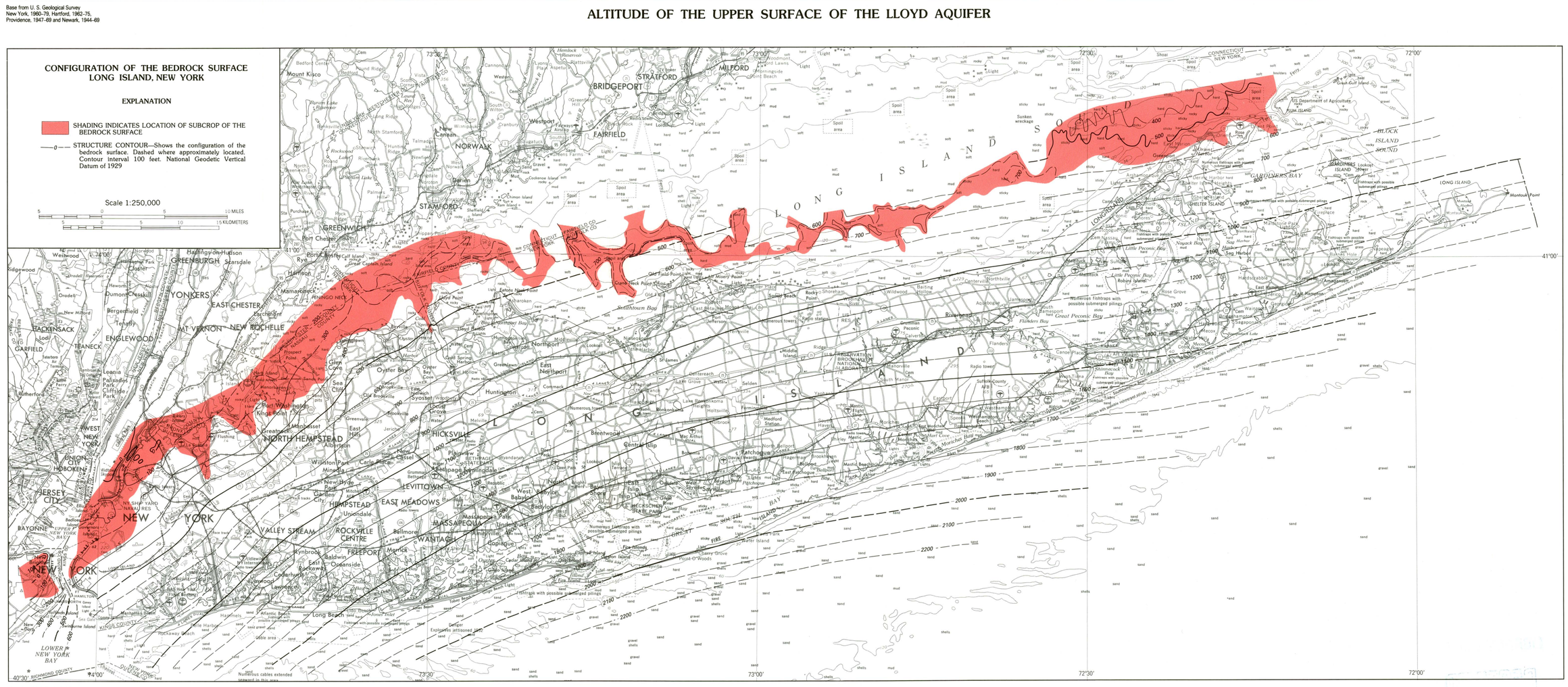
EXPLANATION

SHADING INDICATES LOCATION OF SUBCROP OF THE BEDROCK SURFACE

—0— STRUCTURE CONTOUR—Shows the configuration of the bedrock surface. Dashed where approximately located. Contour interval 100 feet. National Geodetic Vertical Datum of 1929

Scale 1:250,000

5 0 5 10 MILES
5 0 5 10 15 KILOMETERS



CONFIGURATION OF THE BEDROCK SURFACE

HYDROGEOLOGIC FRAMEWORK OF LONG ISLAND, NEW YORK

By
D.A. Smolensky, H.T. Buxton, and P.K. Shernoff

1989

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1989

ALTITUDE OF THE UPPER SURFACE OF THE GARDINERS CLAY, LONG ISLAND, NEW YORK

EXPLANATION

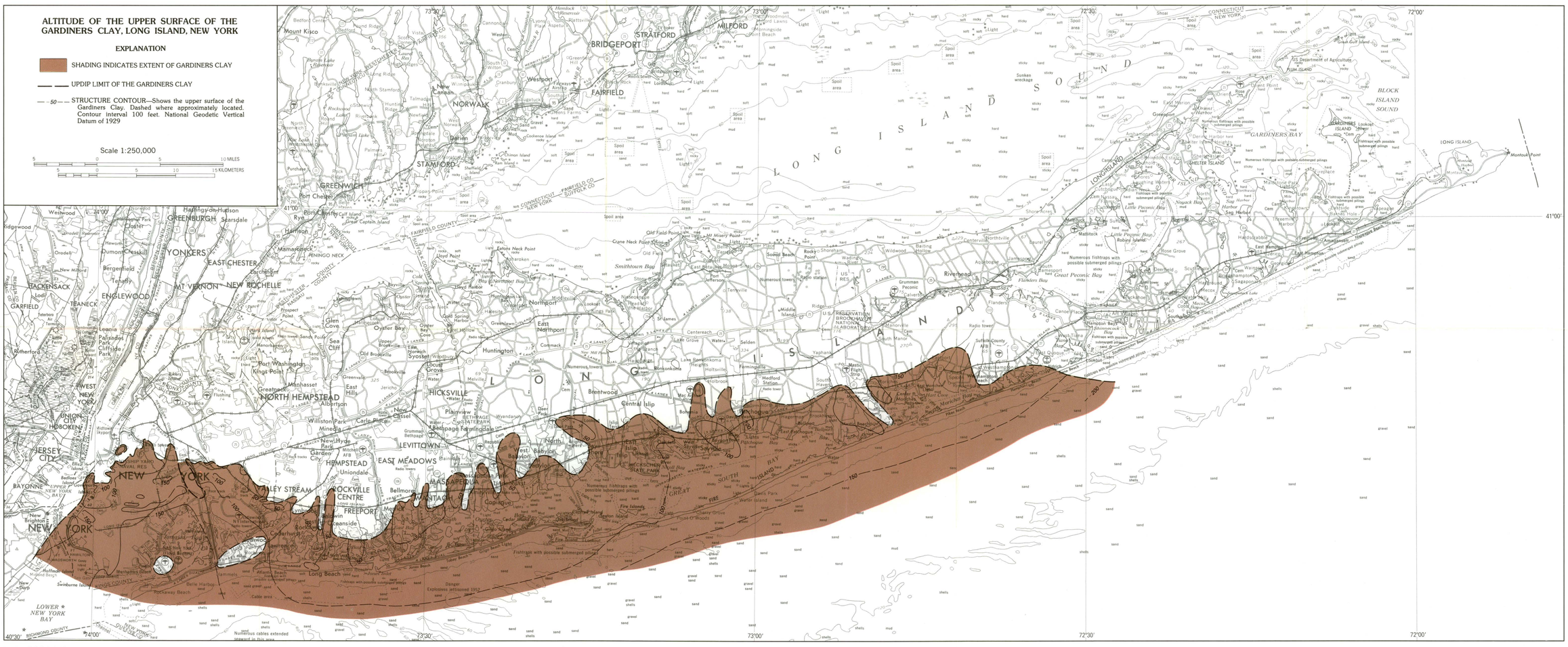
SHADING INDICATES EXTENT OF GARDINERS CLAY

UPDIP LIMIT OF THE GARDINERS CLAY

—50— STRUCTURE CONTOUR—Shows the upper surface of the Gardiners Clay. Dashed where approximately located. Contour interval 100 feet. National Geodetic Vertical Datum of 1929

Scale 1:250,000

5 0 5 10 MILES
5 0 5 10 15 KILOMETERS



ALTITUDE OF THE UPPER SURFACE OF THE GARDINERS CLAY

ALTITUDE OF THE UPPER SURFACE OF THE MONMOUTH GREENSAND AND THE JAMECO AQUIFER, LONG ISLAND, NEW YORK

EXPLANATION

SHADING INDICATES LOCATION OF SUBCROP OF THE MONMOUTH GREENSAND

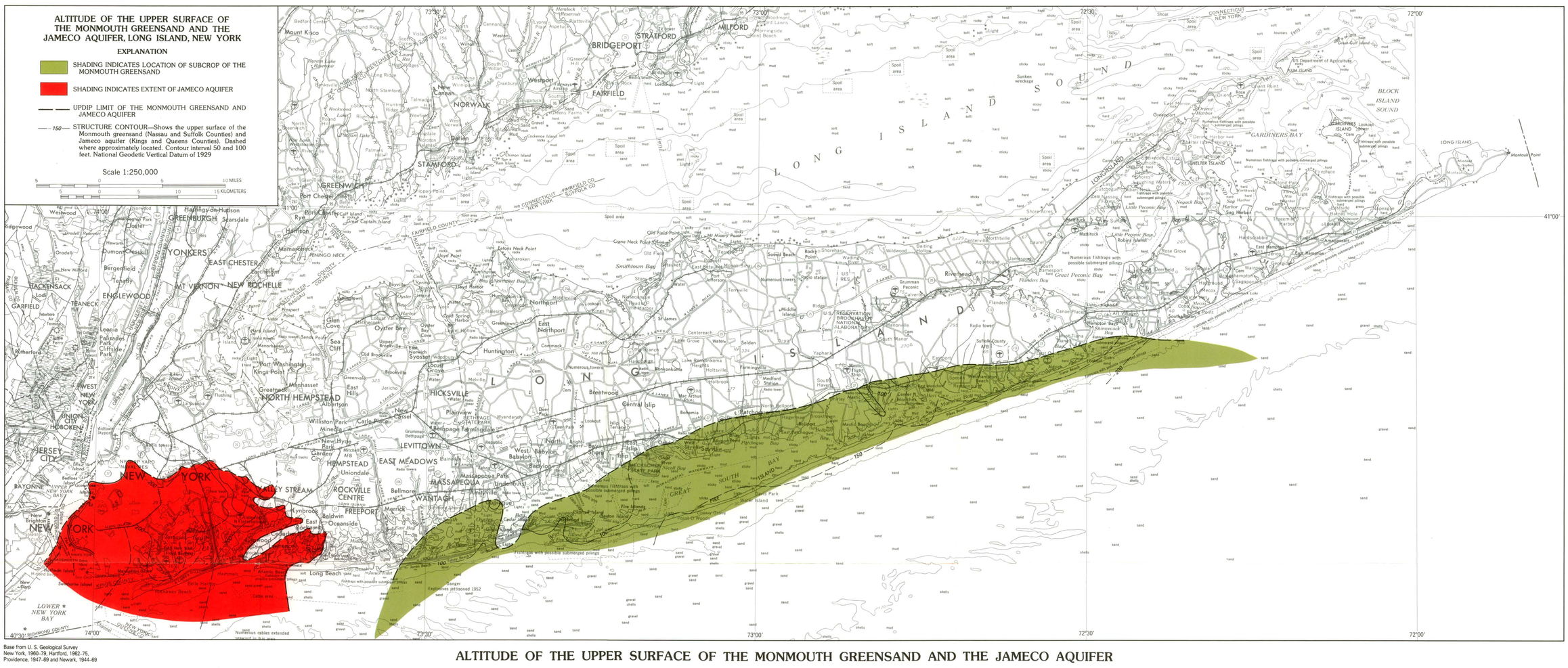
SHADING INDICATES EXTENT OF JAMECO AQUIFER

UPDIP LIMIT OF THE MONMOUTH GREENSAND AND JAMECO AQUIFER

—150— STRUCTURE CONTOUR—Shows the upper surface of the Monmouth greensand (Nassau and Suffolk Counties) and Jameco aquifer (Kings and Queens Counties). Dashed where approximately located. Contour interval 50 and 100 feet. National Geodetic Vertical Datum of 1929

Scale 1:250,000

5 0 5 10 MILES
5 0 5 10 15 KILOMETERS



ALTITUDE OF THE UPPER SURFACE OF THE MONMOUTH GREENSAND AND THE JAMECO AQUIFER

ALTITUDE OF THE UPPER SURFACE OF THE MAGOTHY AQUIFER, LONG ISLAND, NEW YORK

EXPLANATION

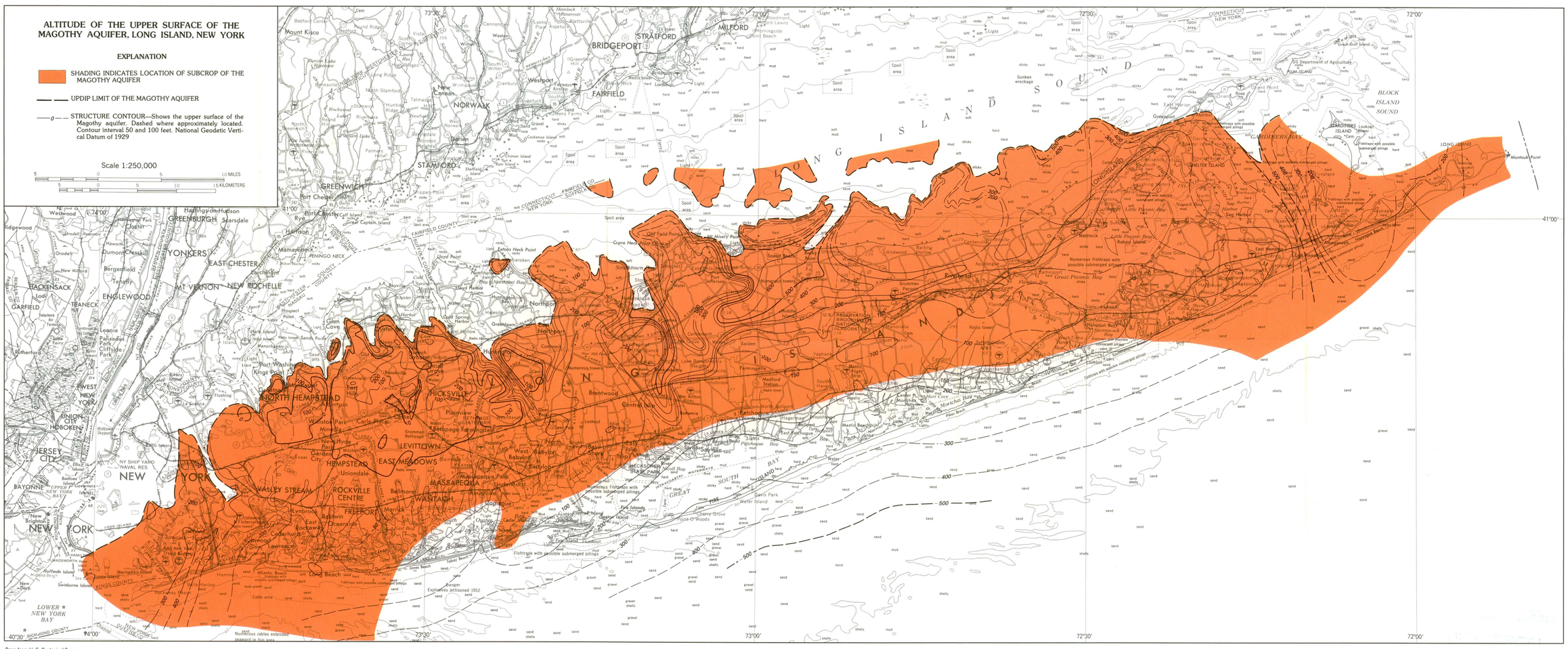
SHADING INDICATES LOCATION OF SUBCROP OF THE MAGOTHY AQUIFER

UPDIP LIMIT OF THE MAGOTHY AQUIFER

—a— STRUCTURE CONTOUR—Shows the upper surface of the Magothy aquifer. Dashed where approximately located. Contour interval 50 and 100 feet. National Geodetic Vertical Datum of 1929

Scale 1:250,000

5 0 5 10 MILES
5 0 5 10 15 KILOMETERS



ALTITUDE OF THE UPPER SURFACE OF THE MAGOTHY AQUIFER

HYDROGEOLOGIC FRAMEWORK OF LONG ISLAND, NEW YORK

By
D.A. Smolensky, H.T. Buxton, and P.K. Shernoff

1989

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1989