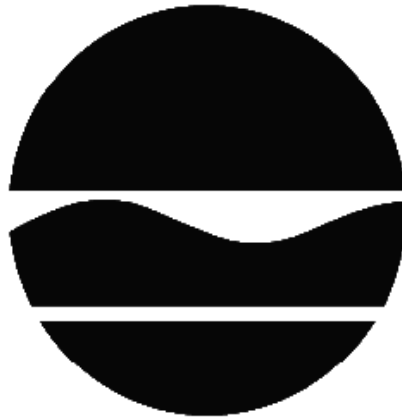


PROPOSED REMEDIAL ACTION PLAN

Ronkonkoma Wallpaper Site
Environmental Restoration Project
Ronkonkoma, Suffolk County
Site No. E152191
February 2014



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy proposed by this Proposed Remedial Action Plan (PRAP). The disposal of contaminants at this site, as more fully described in Section 6 of this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum. The proposed remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This PRAP identifies the preferred remedy, summarizes the other alternatives considered, and discusses the reasons for the preferred remedy.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all PRAPs. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repository:

Sachem Public Library
150 Holbrook Rd,
Holbrook, NY 11741

**A public comment period has been set from:
February 12, 2014**

to

March 28, 2014

A public meeting is scheduled for the following date:

March 10, 2014

Public meeting location:

**Sachem Public Library
150 Holbrook Rd,
Holbrook, NY 11741**

At the meeting, the findings of the remedial investigation (RI) and the alternatives analyses (AA) will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP.

Written comments may also be sent through 3/28/2014 to:

Kerry Maloney
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233
kamalone@gw.dec.state.ny.us

The Department may modify the proposed remedy or select another of the alternatives presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

Receive Site Citizen Participation Information by Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:

The property is located on the north side of Easton Street and is bounded on the east by Raynor Street, on the west by Elm Avenue, and on the south by residential properties. The site is approximately 3.3 acres in size.

Site Features:

There are currently no structures at the site. Tall grasses and shrubs dominate the central and northern portions of the site where buildings previously existed. Asphalt parking and driveways exist through the central, eastern and northwestern areas.

Current Zoning and Land Use:

The site is zoned for industrial use. The site is currently vacant. The site is surrounded by chain link fence and the gates are locked.

Past Use of the Site:

A former industrial building (approximately 35,000 square feet in size) and a separate boiler building (approximately 850 square feet in size) with a brick stack approximately 50 feet high previously existed at the site. The original building was constructed in the 1920's and was reportedly used for the manufacture of paints. It is not known when the facility converted from paint manufacturing to custom wallpaper production, but the wallpaper business left the facility before 1984. The site was then used to manufacture synthetic lumber construction shapes.

Suffolk County acquired the property in 2001 for failure to pay property taxes. In 2002, the Real Property Unit of the Suffolk County Department of Planning made the decision to demolish the buildings on-site. Demolition of the buildings was completed in March 2004.

Site Geology and Hydrogeology:

The aquifer of concern at the former Ronkonkoma Wallpaper site is the Upper Glacial Aquifer which is an unconsolidated mixture of sand and gravel. The approximate thickness of the Upper Glacial Aquifer in Suffolk County is 100 feet with an estimated average horizontal hydraulic conductivity (permeability) of 270 feet/day and a vertical hydraulic conductivity of 27 feet/day.

Clay layers, such as the Gardiners Clay and the “20 Foot Clay,” where present, may act as local confining units, separating the Upper Glacial Aquifer from the underlying Magothy Aquifer which is the principal source of drinking water in Suffolk County.

Depth to groundwater was approximately 60 feet below ground surface in monitor wells installed at the site, and groundwater flow is to the south.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, an alternative which allows for restricted residential use of the site was evaluated.

A comparison of the results of the investigation against unrestricted use standards, criteria and guidance values (SCGs) for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

No PRPs have been documented to date.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. Suffolk County will assist the state in its efforts by providing all information to the State, which identifies PRPs. Suffolk County will also not enter into any agreement regarding response costs without the approval of the Department.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified at this site are:

CHROMIUM
COPPER

LEAD
BARIUM

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

-soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision. There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources and surface water.

In April 2000, the Suffolk County Department of Health Services (SCDHS) sampled four storm-water drywells and a waste-water tank for volatile organic compounds (VOCs) and metals. Concentrations of lead were detected in the southeast storm-water drywell above restricted residential soil cleanup objectives. Three monitoring wells were installed at the site in order to collect water table groundwater samples. Results from the groundwater sampling indicated no groundwater impacts of concern.

During a June 2000 inspection of the site by the SCDHS, a 5,000-gallon heating oil underground storage tank (UST), a 1,000-gallon heating oil UST, two 275-gallon heating oil aboveground storage tanks (ASTs), and a 2,000-gallon aboveground industrial waste holding tank were noted as concerns. In 2004, the ASTs were removed and the UST was excavated and removed from the site.

Nature and Extent of Contamination:

Sampling conducted at the site identified SVOCs and metals in several of the surface soil samples collected across the site, metals in one of the subsurface soil samples, and VOCs and metals in the soil sample collected from one of the Underground Injection Control UIC structures. Metals, Zinc and Sodium, were detected in groundwater samples at concentrations exceeding Ambient Water Quality Guidance Values for class GA groundwater. These are attributed to background levels for the area, since a source was not identified within the deeper soils at the site.

Soil: SVOCs and/or metals were detected in nine of the shallow soil samples (between 0-14inches bgs) above the unrestricted use Soil Cleanup Objectives (UUSCOs). Benzo(a)anthracene was detected at 1.1ppm, exceeding the UUSCO of 1.0 ppm. Benzo(b)fluoranthene was detected at 1.3mppm, exceeding the UUSCO of 1.0ppm. Chrysene was detected at 1.1ppm, exceeding the UUSCO of 1.0ppm. Indeno (1,2,3-cd) pyrene was detected at 0.56ppm, exceeding the UUSCO of 0.500 ppm. Barium was detected as high as

12,400 ppm, exceeding the UUSCO of 350 ppm. Calcium was detected at 2.74 ppm, in excess of the UUSCO of 2.5 ppm. Copper ranged from 52 ppm to 1,490 ppm, exceeding the UUSCO of 50 ppm. Chromium ranged from 32-344 ppm, exceeding the UUSCO of 30 ppm. Lead ranged from 73-2210ppm, exceeding the UUSCO of 63ppm. Nickel was detected at 32 ppm, exceeding the UUSCO of 30 ppm. Selenium was detected at 4.85 ppm, exceeding the UUSCO of 3.9 ppm. Zinc ranged from 187-3,050 ppm, exceeding the UUSCO of 109 ppm.

Metals were detected in one of the deeper (14-20ft bgs) soil borings above UUSCOs. Lead was detected at 135 ppm, exceeding the UUSCO of 63 ppm. Chromium was detected at 55 ppm, exceeding the UUSCO of 30 ppm.

A sample collected from one of the UIC structures contained concentrations of VOCs and metals above the UUSCOs. Acetone was detected at 0.079 ppm, exceeding the UUSCO of 0.50 ppm. Chromium was detected at 14,700 ppm, exceeding the UUSCO of 30 ppm. Copper was detected at 420 ppm, exceeding the UUSCO of 50 ppm. Lead was detected at 72,100 ppm, exceeding the UUSCO of 63 ppm. Cyanide was detected at 35 ppm, exceeding the UUSCO of 27 ppm.

Groundwater: Groundwater analytical results were compared to the NYSDEC Ambient Water Quality Standards and Guidance Values (AWQS) for Class GA groundwater. VOCs and SVOCs were not detected above laboratory method detection limits. Several inorganic metals were detected in each of the three groundwater samples above laboratory method detection limits. Sodium was detected in MW-1 and MW-5 and Zinc was detected in MW-4 above NYSDEC AWQS but these are attributed to background levels for the area, since a source was not identified within the soils at the site.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

The site is completely fenced, which restricts public access. However, persons who enter the site could contact contaminants in the soil by walking on the site, digging or otherwise disturbing the soil.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

SECTION 7: SUMMARY OF THE PROPOSED REMEDY

To be selected, the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the AA report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's proposed remedy is set forth at Exhibit D.

The proposed remedy is referred to as the Restricted-Residential Use Clean-up remedy.

The estimated present worth cost to implement the remedy is \$1,645,753. The cost to construct the remedy is estimated to be \$1,470,587 and the estimated average annual cost is \$175,166.

The elements of the proposed remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. This remedy would fully delineate the extent of the contamination in the surface and shallow subsurface soil prior to excavation. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;

- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Soils up to two feet in depth exceeding restricted residential soil cleanup objectives and soils from a former drywell in excess of restricted residential SCOs will be excavated and disposed off-site in a permitted facility. Approximately 7,000 cubic yards of soil will be removed from the site. Documentation samples will then be taken from the base of the excavation. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

3. Cover System

A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
- allows the use and development of the controlled property for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws; and
- requires compliance with the Department approved Site Management Plan.

5. Site Management Plan

A Site Management Plan is required, which includes the following:

an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

- a. Institutional Controls: The Environmental Easement discussed in Paragraph 4 above.
- b. Engineering Controls: The soil demarcation and cover system discussed in Paragraph 3.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

- descriptions of the provisions of the environmental easement including any land use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into two categories: semi-volatile organic compounds (SVOCs) and inorganics (metals and cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Groundwater

Groundwater samples were collected from overburden monitoring wells. The samples were collected to assess groundwater conditions on-site. Samples were taken from the water table, approximately 57-60 feet below grade. Samples were analyzed for the presence of VOCs, SVOCs, total metals and total cyanide. Metals were detected in each of the three groundwater samples above laboratory method detection limits. Sodium was detected in MW-1 and MW-5 and zinc was detected in MW-4 above NYSDEC AWQS. The presence of sodium and zinc in the groundwater is attributed to background levels for the area, as a source was not identified within the deeper soils at the site.

No site-related groundwater contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for groundwater.

Soil

Shallow and subsurface soil samples were collected at the site during the RI. Shallow and subsurface soil samples were collected from a depth of 14-20 feet to assess soil contamination impacts to groundwater. Surface soils were collected from 0 to 2 inches below ground surface (bgs) or below the vegetative layer. In addition, samples were also collected from 6 to 8 inches bgs and 12 to 14 inches bgs. Initially, the shallow surface soil samples 0 to 2 inches bgs were analyzed, while the deeper samples 6 to 8 inches bgs and 12 to 14 inches bgs were held pending analytical results. If a soil sample showed concentrations above applicable standards, the deeper sample collected from that location was analyzed. Samples were analyzed for VOCs, SVOCs, total metals and total Cyanide. The results indicate that soils at the site exceed the unrestricted and restricted residential SCGs for semi-volatile organics and metals.

Table 2 – Shallow Soil

Detected Constituents	Concentration Range Detected (ppm) ^a	Unrestricted SCG ^b (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG ^c (ppm)	Frequency Exceeding Restricted Residential SCG
Semi-Volatiles					
Benzo(a)anthracene	0-1.1	1	1/17	1	1/17
Benzo(b)fluoranthene	0—1.3	1	1/17	1	1/17
Chrysene	0-1.1	1	1/17	3.9	0/17
Indeno(1,2,3-cd)pyrene	0-.56	.5	1/17	.5	1/17
Inorganics					
Barium	20-12,400	350	20/35	400	20/35
Cadmium	1-2.74	2.5	1/35	4.3	0/35
Chromium	2-344	30	8/35	180	3/35
Copper	10-1,490	50	14/35	270	3/35
Lead	30-2210	63	18/35	400	5/35
Nickel	1-32.5	30	1/35	310	0/35
Selenium	0-4.85	3.9	1/35	180	0/35
Zinc	28-3,050	109	22/35	10,000	0/35

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Restricted Residential Use, unless otherwise noted.

The primary soil contaminants are metals associated with prior industrial activities on the site. The majority of the contamination is in the top two feet of site soils. Only one subsurface sample exceeded the UUSCOs.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are barium, chromium, copper and lead.

Soil samples were also collected during the RI from the on-site one of the UIC structures (DW-3). The results indicate soil in DW-3 exceeds the Department's SCGs in soils for arsenic, cadmium, chromium, copper and lead. Other UIC structures identified on site were previously sampled by SCDHS in 2000 and were remediated under Suffolk County oversight in 2004.

Table 3 - Soil in DW-3

Detected Constituents	Concentration Range Detected (ppm) ^a	Unrestricted SCG ^b (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG ^c (ppm)	Frequency Exceeding Restricted SCG
Inorganics					
Chromium	14,700	30	1/1	180	1/1
Copper	420	50	1/1	270	1/1
Lead	72,100	63	1/1	400	1/1
Cyanide	35	27	1/1	27	1/1

a - ppm: parts per million, which is equivalent to milligrams per kilogram,;

b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Restricted Residential Use, unless otherwise noted.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

This alternative does not satisfy the human health RAOs for the current scenario, nor is it supportive of the redevelopment of the project site for residential, commercial or industrial use. This alternative has been included to provide a point of comparison for the other alternatives.

The remaining alternatives address on-site contamination present in environmental media and are presented below. Alternatives 2, 3 and 4 address contamination present in soil.

Alternative 2: Cover Installation and Removal of Soil from Drywell

This alternative would include installation of a composite soil cap across the site and removal of soils from DW-3 in excess of Restricted Residential SCOs. This remedy will allow for the site to be redeveloped for restricted residential, commercial, or industrial uses, although the filing of an Environmental Easement and development of a Site Management Plan would be required to address any future invasive activities at the site.

The details of this alternative include:

- Clearing and grubbing
- Removal and off-site disposal of soils from within DW-3
- Installation of a two foot thick soil cover system across the entire site to meet Restricted Residential Use
- Filing of an Environmental Easement on the property that includes:
 - Development of a Site Management Plan
 - Limitation on future development to Industrial, Commercial or Restricted-Residential Uses
 - Requirements for annual certification of institutional and engineering controls

<i>Present Worth:</i>	<i>\$1,018,000</i>
<i>Capital Cost:</i>	<i>\$843,000</i>
<i>Annual Costs (20 years):</i>	<i>\$175,000</i>

Alternative 3: Restricted Residential Use Clean-up

This alternative would include removal of soil to a maximum depth of 2 feet across the site in excess of Restricted-Residential Soil Cleanup Objectives (RRSCOs) and removal of soils from DW-3 in excess of Restricted Residential SCOs.

This remedy will allow for the site to be redeveloped for Restricted-Residential, Commercial or Industrial uses, although the filing of an Environmental Easement and development of a Site Management Plan would be required to address any future invasive activities at the site.

The details of this alternative include:

- Clearing and grubbing
- Removal and off-site disposal of shallow soil from across the site that exceed RRSCOs
- Removal and off-site disposal of soils from within DW-3
- Installation of a composite cover system above remaining soil contamination area
- Filing of an Environmental Easement on the property that includes:
 - Development of a Site Management Plan
 - Limitation on future development to Industrial, Commercial or Restricted-Residential Uses
 - Requirements for annual certification of institutional and engineering controls

Present Worth: \$1,650,000
Capital Cost: \$1,470,000
Annual Costs (20 years): \$175,000

Alternative 4: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8(a).

This alternative would include:

- Clearing and grubbing
- Removal and off-site disposal of soil from across the site that exceeds UUSCOs
- Removal and off-site disposal of soil from within DW-3 in accordance with SCDHS guidance
- Backfilling excavations with clean, suitable material from an off-site source

Capital Cost: \$2,034,000

Exhibit C**Remedial Alternative Costs**

Remedial Alternative	Capital Cost (\$)	Annual Costs (\$)	Total Present Worth (\$)
No Action	0	0	0
Cover Installation and Removal of Soil	843,000	175,000	1,018,000
Restricted-Residential Use Clean-up	1,470,000	175,000	1,650,000
Unrestricted Use Clean-up	2,034,000	0	2,034,000

Exhibit D

SUMMARY OF THE SELECTED REMEDY

The Department is proposing Alternative 3, Restricted Residential Use Clean-up as the remedy for this site. Alternative 3 would achieve the remediation goals for the site by removing soil exceeding the restricted residential SCOs in the top 2 feet of the site and implementing a SMP to manage any remaining soils exceeding SCOs in the subsurface. The elements of this remedy are described in Section 7. The selected remedy is depicted in Figure 3

Basis for Selection

The selected remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the AA report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy (Alternative 3) would satisfy this criterion by meeting the RAOs for shallow soil. Alternative 1 does not satisfy the RAOs or provide protection of public health and the environment as it does not eliminate the potential for exposure of the public, future construction workers and site residents to on-site contaminants. Alternative 1 is removed from further consideration. Alternatives 2, 3 and 4 would be protective of human health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternatives 2, 3 and 4 comply with the applicable SCGs. However with Alternative 2, the majority of the contaminated soil would remain at the site.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Alternative 3 achieves long-term effectiveness and permanence by having a soil cover system at the site and restricting use of the site through an environmental easement.

Alternative 2 achieves long-term effectiveness and permanence by construction of a composite cover system at the site and restricting use of the site through an EE. Alternative 4 achieves long-term effectiveness and permanence by removing soils affected by site contaminants above UUSCOs.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternatives 2, 3 and 4 reduce the mobility, volume and toxicity of contaminants from on-site shallow soil. Alternative 4 achieves the greatest reductions since it calls for the greatest volume of removals in order to meet unrestricted use SCOs.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

The short-term adverse impacts and exposure to the public and the environment during the implementation of Alternatives 2, 3 and 4 are minimal. Short-term exposure to on-site workers during excavation and loading activities are addressed via a Health and Safety Plan (HASP) and mitigated through the use of personal protective equipment, monitoring and engineering controls. Potential short-term exposure to the surrounding community is addressed through the use of dust-suppression techniques and through the implementation of a Community Air Monitoring Plan (CAMP) which requires air monitoring activities during all excavation and soil disturbance activities.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternatives 2, 3 and 4 can be implemented using readily available and proven technologies. Both the technical and nontechnical aspects of implementing these alternatives are feasible

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The costs of the alternatives vary significantly. Alternative 3 is 62% more expensive than Alternative 2 and Alternative 4 is twice as expensive as Alternative 2. Alternative 2 has a low cost, but most of the contaminated soil would not be addressed other than by institutional and engineering controls. Both Alternatives 3 and 4 have costs associated with excavation, offsite disposal and backfilling of the site. Alternative 4 is 23% more expensive than Alternative 3, yet both alternatives provide equal protection.

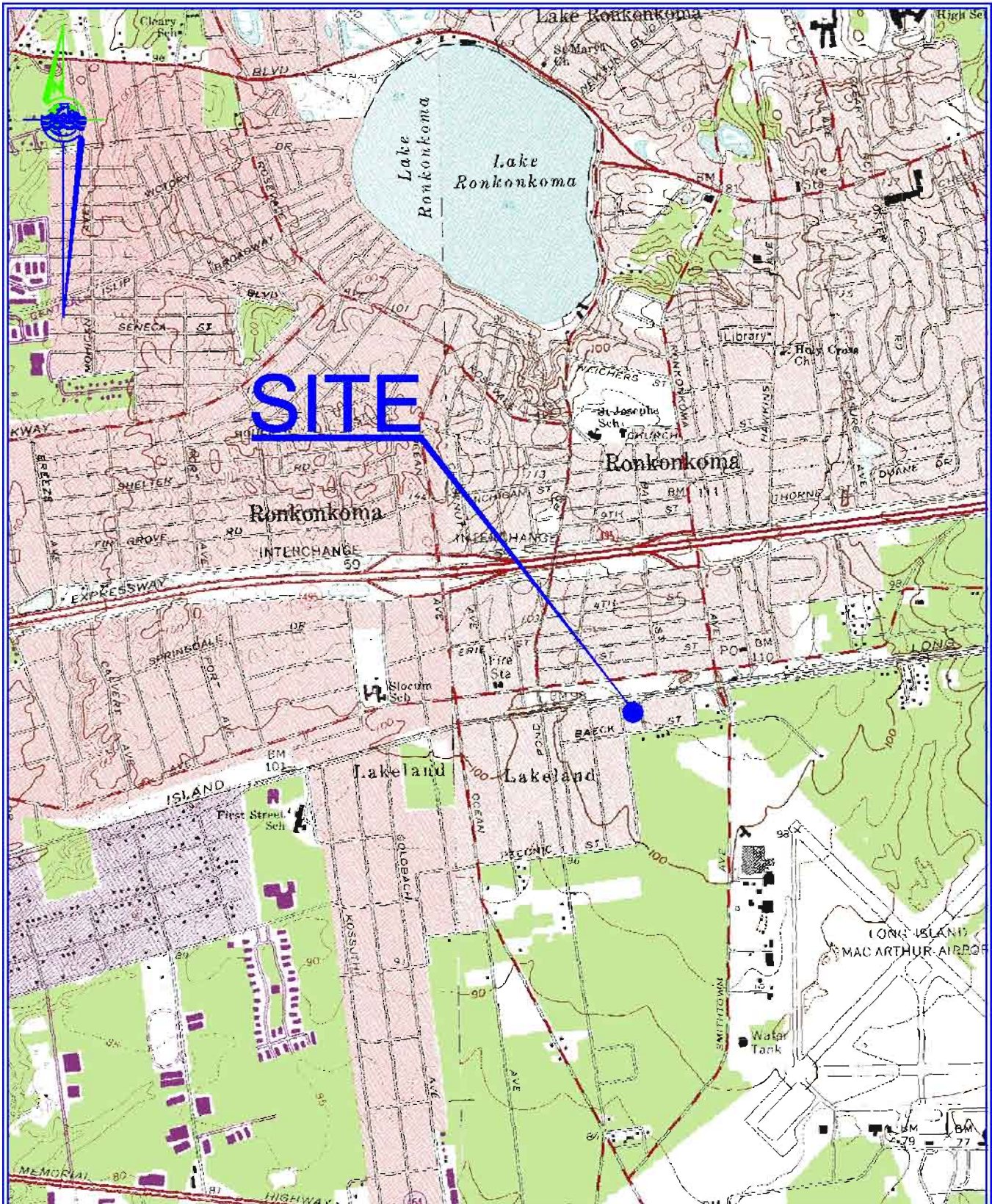
8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Alternatives 2, 3 and 4 are compatible with respect to the proposed land uses in the vicinity of the site. The proposed use is consistent with existing zoning designations for the property and consistent with development patterns. Alternative 1 restricts the use of the land and does not comply with the NYSDEC ERP goal for cleanup of contaminated land.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP will be evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes

Alternative 3 is being proposed or because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.



SITE

VICINITY MAP
 SCALE = 1:24,000

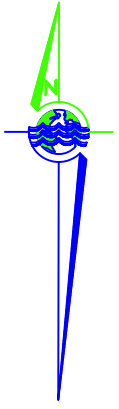
Mapped, edited, and published by the Geological Survey
 Revised in cooperation with New York
 Department of Transportation

Control by USGS, USC&OS, and New Jersey Geodetic Survey
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**934 EASTON STREET
 RONKONKOMA, NY**

Figure 1



COMPOUND	0-2"	6-8"	12-14"
BARIUM	674	620	573

COMPOUND	0-2"	6-8"	12-14"
BARIUM	90	505	1090

COMPOUND	0-2"	6-8"	12-14"
BARIUM	1,620	1,510	767

COMPOUND	0-2"	6-8"	12-14"
BARIUM	2,320	1,850	365

COMPOUND	0-2"	6-8"	12-14"
BARIUM	1,180	397	279

COMPOUND	0-2"	6-8"
BARIUM	12,100	253
COPPER	1,490	30.2
LEAD	991	36.3

COMPOUND	0-2"	6-8"	12-14"
BARIUM	1,260	4,310	136
LEAD	269	1,210	33

COMPOUND	0-2"	6-8"	12-14"
BARIUM	12,400	4,360	1,030
COPPER	787	298	68.5
LEAD	2,210	814	138

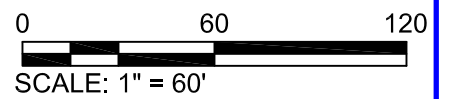
COMPOUND	0-2"	6-8"
BARIUM	3,870	324
LEAD	434	43.8

LEGEND

- MONITORING WELL LOCATIONS
- MW-1**
- DRYWELL
- SURFACE SAMPLE LOCATIONS
- SS-10**
- SUB-SURFACE SAMPLE LOCATIONS
- SB-1**
- 200** CONCENTRATION EXCEEDING RRSCOS
- 100** CONCENTRATION BELOW RRSCOS

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 YOUNG & YOUNG
 400 OSTRANDER AVENUE
 RIVERHEAD, NY 11901
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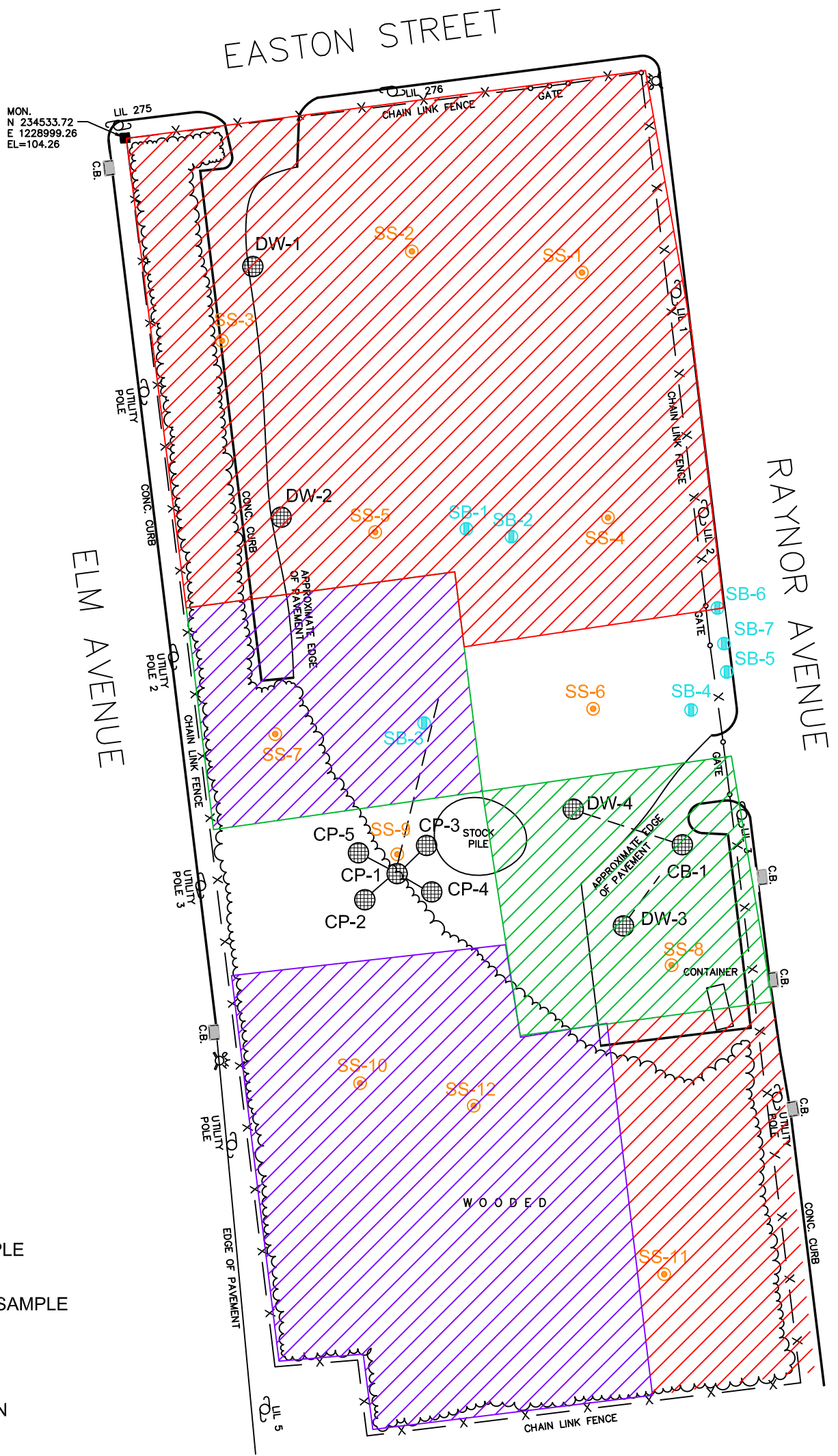
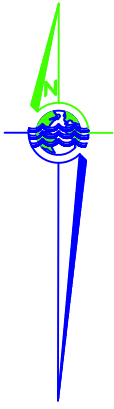
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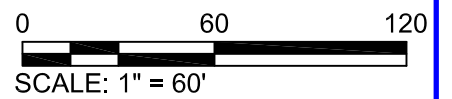
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 SURFACE / SUB-SURFACE SOIL SAMPLE LOCATIONS
 934 EASTON STREET
 RONKONKOMA, NY
Figure 2



LEGEND

- DRYWELL
- SS-10 SURFACE SAMPLE LOCATIONS
- SB-1 SUB-SURFACE SAMPLE LOCATIONS
- 6" EXCAVATION AREA 45,220 SF
- 12" EXCAVATION AREA 13,114 SF
- 24" EXCAVATION AREA 69,469 SF

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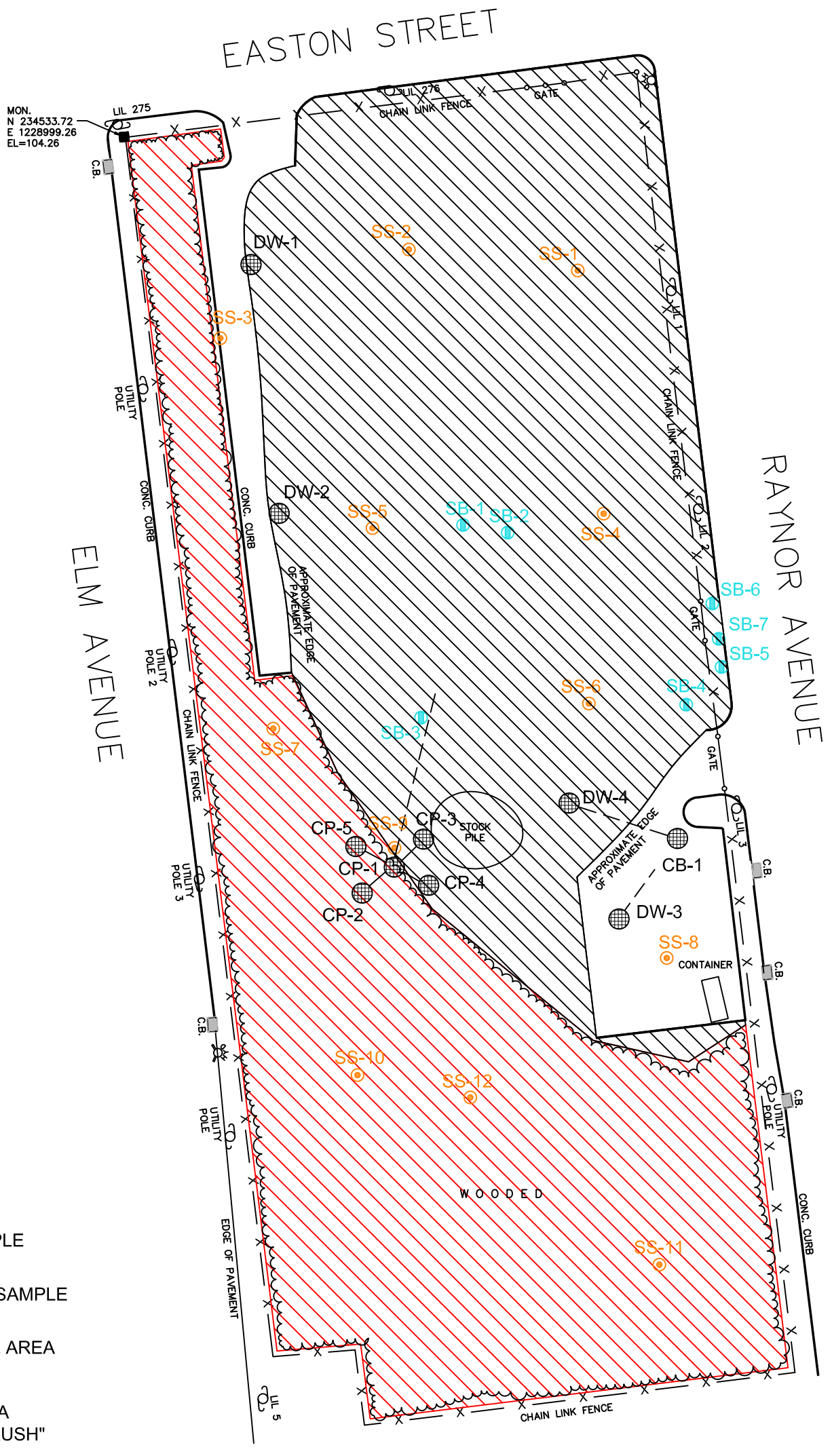
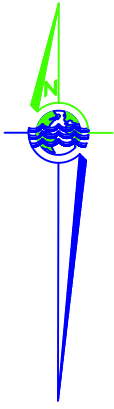
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EXCAVATION AREAS
 934 EASTON STREET
 RONKONKOMA, NY

Figure 3

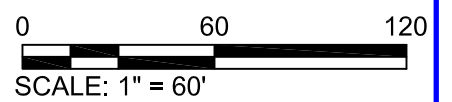
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LEGEND

- DRYWELL
- SS-10 SURFACE SAMPLE LOCATIONS
- SB-1 SUB-SURFACE SAMPLE LOCATIONS
- TREE REMOVAL AREA
59,283 SF
- GRUBBING AREA
"LOW UNDERBRUSH"
71,228 SF

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SHEET TITLE
GRUBBING AREA 934 EASTON STREET RONKONKOMA, NY
Figure 4